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# Isotopic Details of the Spent Catawba-1 MOX Fuel Rods at ORNL

**April 10, 2015**

**Prepared by**
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Reactor and Nuclear Systems Division

# ISOTOPIC DETAILS OF THE SPENT CATAWBA-1 MOX FUEL RODS AT ORNL

Ronald J. Ellis

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# 1. INTRODUCTION

The United States Department of Energy funded Shaw/AREVA MOX Services LLC to fabricate four MOX Lead Test Assemblies (LTA) from weapons-grade plutonium. A total of four MOX LTAs (including MX03) were irradiated in the Catawba Nuclear Station (Unit 1) "Catawba-1" PWR which operated at a total thermal power of 3411 $MW_t$ and had a core with 193 total fuel assemblies. The MOX LTAs were irradiated along with Duke Energy's irradiation of eight Westinghouse Next Generation Fuel (NGF) LEU LTAs (ref.1) and the remaining 181 LEU fuel assemblies. The MX03 LTA was irradiated in the Catawba-1 PWR core (refs.2,3) during cycles C-16 and C-17. C-16 began on June 5, 2005, and ended on November 11, 2006, after 499 effective full power days (EFPDs). C-17 started on December 29, 2006, (after a shutdown of 48 days) and continued for 485 EFPDs. The MX03 and three other MOX LTAs (and other fuel assemblies) were discharged at the end of C-17 on May 3, 2008. The design of the MOX LTAs was based on the (Framatome ANP, Inc.) Mark-BW/MOX1 17×17 fuel assembly design (refs. 4,5,6) for use in Westinghouse PWRs, but with MOX fuel rods with three Pu loading ranges: the nominal Pu loadings are 4.94 wt%, 3.30 wt%, and 2.40 wt%, respectively, for high, medium, and low Pu content. The Mark-BW/MOX1 (MOX LTA) fuel assembly design is the same as the Advanced Mark-BW fuel assembly design but with the LEU fuel rods replaced by MOX fuel rods (ref. 5). The fabrication of the fuel pellets and fuel rods for the MOX LTAs was performed at the Cadarache facility in France, with the fabrication of the LTAs performed at the MELOX facility, also in France.

Five MOX fuel rods were selected from MX03 LTA and sent to Oak Ridge National Laboratory, arriving on January 22, 2009. These MOX fuel rods encompassed fuel rods B4, B14, and K5 (all high Pu loading), fuel rod C1 (medium Pu loading), and fuel rod A1 (low Pu loading). Table 1 presents details and parameters of the five MOX fuel rods that were transported to ORNL after irradiation in the MX03 LTA and is a summary of important initial and operational details of the five MOX fuel rods. The discharge burnups for each MOX fuel rod were not made public by Duke-Energy or AREVA, but the range in burnup levels was documented as shown in the last column (ref. 5,6). The exact as-built details (from Melox) of the fuel rods were used in the models and burnup simultations considered in this work.

**Table 1. Summary of the MOX Fuel Rods that came to ORNL**

| MOX Fuel Rod | Pu Loading Category | Nominal Amount of Pu (Pu+Am)/HM | Mass of initial heavy metal (IHM) (g) | Exit Burnup GWd/MTIHM |
|---|---|---|---|---|
| **B4** | high | 4.94 wt% | 1772.37 | Range of 39.7 to 47.3 |
| **A1** | low | 2.40 wt% | 1773.90 | |
| **C1** | Medium | 3.30 wt% | 1760.50 | |
| **B14** | High | 4.94 wt% | 1765.39 | |
| **K5** | High | 4.94 wt% | 1763.11 | |

The MX03 LTA underwent two cycles of irradiation (C-16 and C-17) in the Catawba-1 PWR core. The fuel assembly average burnup for MX03 LTA for the total of cycles C-16 and C-17 was published by AREVA to be 41.8 GWd/MTIHM, with the average burnup in cycle C-16 for the MOX LTA was 22.0 GWd/MTIHM, and for C-17, it was 19.8 GWd/MTIHM. The burnup of the five individual selected MOX fuel rods range from 39.7 to 47.3 GWd/MTIHM, in the given discharge burnup determinations (ref. 5,6). All five MOX fuel rods were examined nondestructively, with four chosen for destructive examination; MOX fuel rod B14 (similar to B4) was not subjected to destructive examination (ref. 6). This report tabulates the nuclides in the calculated isotopic compositions of the irradiated and depleted fuel rods following the irradiation in Catawba-1 and the subsequent cooling (decay) time since discharge.

## 2. MODELS AND SIMULATIONS

The depletion calculations were performed with the SCALE 6.1 (ref.7) scientific code package (using TRITON in t-depl mode, and ORIGEN, both as part of the TRITON sequence, and in stand-alone operation). The models used were based on existing Westinghouse W17×17 PWR fuel assembly models updated with the as-built (at the MELOX facility – AREVA/Cogema) MOX LTA and fuel rod initial compositions, and any new dimensions and other details appropriate for the FCF (AREVA) (Framatome ANP, Inc.) Mark-BW/MOX1 17×17 fuel assembly design (ref. 5,6,7) used for the MOX LTAs, in conjunction with actual assembly operational data for the Catawba-1 irradiation in cycles C-16 and C-17.

As mentioned above, the Catawba-1 PWR core during cycles C-16 and C-17 had four MOX LTAs (including MX03 from which the five MOX fuel rods were selected) in addition to the remaining LEU fuel assemblies, but information about the neighboring LEU assemblies was not available to allow for a core model simulation. Consequently, the simulations in this work involved performing TRITON t-depl calculations for a single MOX LTA with appropriate boundary conditions, with the burnup and power history for the case normalized to the given burnup level and operational history information for each of the five MOX fuel rods provided by AREVA/Duke Energy. Five individual cases were completed, each one focused on maintaining the given power history for one of the selected MOX fuel rods.

Appendix A lists the input file used with SCALE 6.1.3/TRITON for fuel rod B4. The proprietary data for this fuel rod composition is not shown. The other four selected MOX fuel rods are modeled with similar TRITON input files, with the actual input initial fuel composition, the fuel rod location in the LTA, and the burnup history of the selected fuel rod being different for each case. The fuel rods in the MOX LTAs had cladding made from M5 represented by an approximate composition specified in the Appendix A input case. The guide tube and instrument tube dimensions and materials are used in the TRITON input cases for the MOX LTAs.

Figure 1 (ref. 6) indicates the location of the five chosen MOX fuel rods, using the AREVA numbering system, for the MX03 LTA rod position in the matrix schematic diagram. The positions of the guide thimbles and instrument tubes are shown, in addition to the three classes (Pu loading) of fuel rods, as well as the specific locations of the selected fuel rods. The high Pu content fuel rods are loaded into the central region of the MOX LTA. The low Pu content fuel rods are positioned at the corners of the LTA. The medium Pu loaded fuel rods are positioned along the outer sides of the assembly.

The initial five TRITON cases simulated the power history of each of the selected MOX fuel rods during the two Catawba-1 PWR cycles (C-16 and C-17) with the appropriate cycle full power days and the downtime between cycles. Furthermore, the cooling time (decay) for the discharged MOX fuel rods from the end of C-17 until shipment to ORNL was modeled. The material information and fuel compositions for the MOX fuel rods are stored in the SCALE-created ft71 output binary file, organized by material number and burnup/decay steps. The details of the MOX fuel rod compositions presented in Appendix C are obtained in ORIGEN calculations that start with the appropriate data in the ft71 files, and further decay the compositions to the necessary times and dates. The raw output results of these five SCALE/ORIGEN cases are listed in Appendix B in subsections B1-B5. These results were then normalized in terms of a basis of 1 MTIHM, to determine the data to put into the tables in this report.

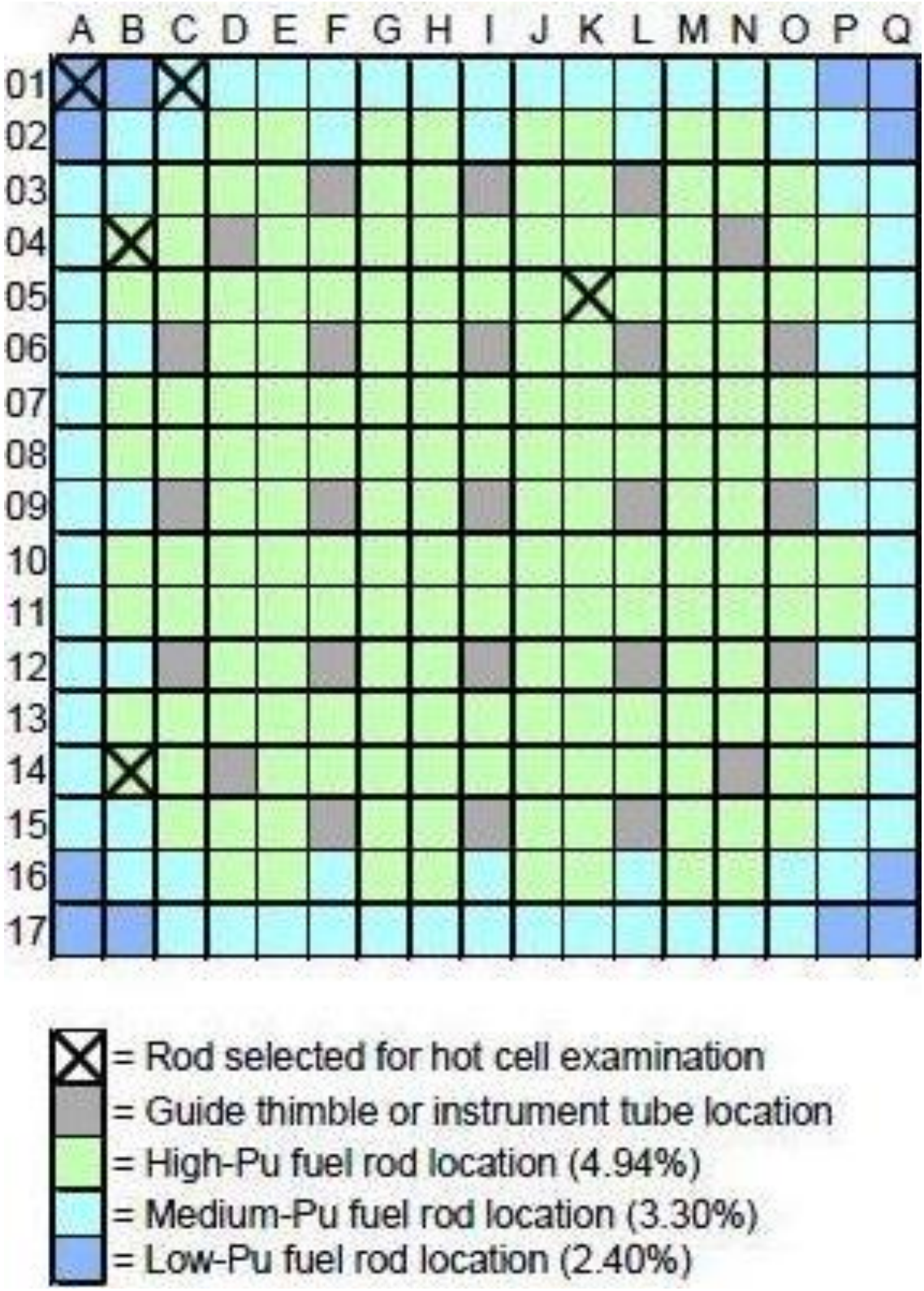


**Fig. 1. Location of the MOX fuel rods in the MX03 LTA irradiated in Catawba-1.**

Figure 2 is a depiction of the SCALE/TRITON model representing the MX03 LTA. The diagram is a quarter-view of the MOX LTA. Please see the legend in Figure 1 which identifies the various features and fuel rods. Fuel Rod A1 is specifically indicated as yellow within a yellow square at the upper right of the diagram; (it is a low-Pu content rod). The rest of the high Pu, medium Pu, and low Pu MOX fuel rods are indicated. The specific selected MOX fuel pin placements are indicated in Figure 1.

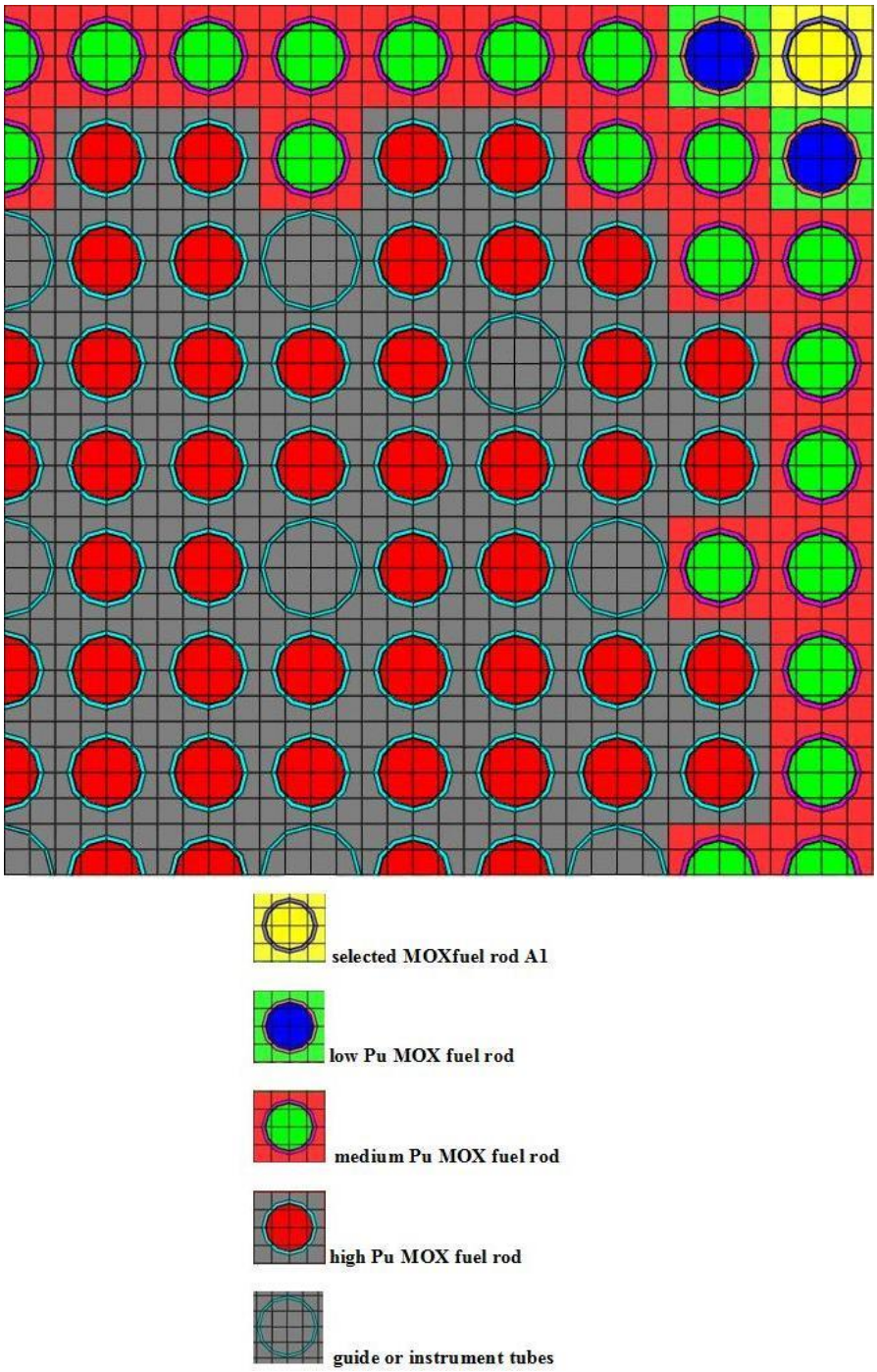


Fig. 2. Representative quarter-assembly (LTA based on the AREVA Mark-BW/MOX1 17×17 fuel assembly) view of the TRITON model for the MOX Fuel Rod irradiation/depletion calculations. Legend identifies the major components.

# 3. RESULTS AND DISCUSSION

In this report, calculated the isotopic compositions for each of the spent MOX fuel rods sent to ORNL are tabulated. The results presented in this report are shown in terms of mass (g), activities (Ci), and decay heat (W) normalized per 1 MT of initial heavy metal (MTIHM) for the individual MOX fuel rods. The various tables in this report show details of the fuel compositions for at least five representative dates. As mentioned above, the five selected MX03 LTA fuel rods were removed from the Catawba-1 reactor core on May 3, 2008. These fuel rods were shipped to ORNL arriving on January 22, 2009. This date corresponds to the first column of data in all of the tables in this report. The other columns of results in the tables represent the MOX fuel rod compositions on October 21, 2013, the date of the first draft version of this report, and on the January 22 anniversary in each of the years 2014, 2015, and 2016.

The isotopic compositions for the five MOX fuel rods depend on the initial fuel composition (Pu loading, nuclide weight fractions, total mass, location of the rod in the LTA, neighboring rods and regions, etc), the location of the fuel rod in the assembly (assembly central zone, on the periphery, near a corner, next to a guide tube, etc.), the discharge burnup level for the rods (and the associated power history), and the cooling time following removal from irradiation in the Catawba-1 core. The range in discharge burnup levels is about 20% according to the given data on burnup from Duke Energy/AREVA.

The main results for the fuel composition (weight fractions) and activities, by nuclide, are presented in Tables C1-C5, and Tables C6-C10, respectively. The data are tabulated by relevant dates. The fuel rods were discharged from Catawba-1 on May 3, 2008, and shipped to ORNL, arriving on January 22, 2009; this was 264 days (of cooling) after discharge. The other dates for which the data are listed are October 21, 2013, which is 1997 days after discharge, and on the January 22 anniversary for each of 2014, 2015, and 2016 (2090, 2455, and 2820 days of cooling after discharge). As seen in the output listings for each MOX fuel rod listed in Appendix B, the SCALE isotopic results were calculated for many additional time steps, starting with the compositions at 240 days of cooling (from the TRITON case output material libraries), for each fuel rod, designated "initial" in the output tables in Appendix B.

For convenience and usefulness for the readers, the weight fractions for each non-negligible nuclide is given in terms of grams per metric ton of initial heavy metal in each of the fuel rods. The fuel nuclide libraries in SCALE (with over 2300 nuclides) were available in the TRITON and ORIGEN calculations; about 530+ active and non-active nuclides were non-negligible ($> 1.0\times10^{-20}$ g/MTIHM) for inclusion in these mass-fraction tables. For the tables of calculated activities for the radionuclides in the fuel materials, about 350+ non-negligible ($> 1.0\times10^{-32}$ Ci/MTIHM) radioactive nuclides are listed for each MOX fuel rod. The active nuclides are listed in terms of Ci for each nuclide based on a total normalization of 1 metric ton of initial heavy metal, for each fuel rod. To consider these activities in terms of SI units, the following conversion would be used: 1 Ci = $3.7\times10^{10}$ Becquerel (disintegrations per second).

## 3.1 TABLES OF THE CALCULATED MOX FUEL ROD COMPOSITION RESULTS

Appendix B includes files added to this report that present the raw output of ORIGEN calculations for the subsequent decay of the irradiated MOX fuel rod compositions, spanning a total of about eight years of cooling time. These ORIGEN case outputs, in sections B1 to B5 in Appendix B, used the output nuclide libraries (files ft71f001) from the appropriate TRITON t-depl case runs (see Appendix A) and performed the decay for the specified cooling time duration arranged to tabulate data for specific dates of interest. Appendix C includes 10 large tables that present the weight fractions for a large list of nuclides (in grams per MTIHM) for the compositions of the MOX fuel rods B4, A1, C1, B14, and K5 (Tables C1-C5

respectively). Nuclide activities (in Ci per MTIHM) are presented for the MOX fuel rods in Tables C6-C10. These 10 tables represent the main calculated results for the isotopics of the five decayed and cooled MOX fuel rods that were received at ORNL from Catawba-1.

## 3.2 DETAILS OF ISOTOPIC RESULTS

Spreadsheets containing the information presented in Tables C1-C10 were prepared and distributed to ORNL and other staff involved in the handling and disposition of the MOX fuel rods.

Table 2 below presents the decay heat (in W per MTIHM) for the five MOX fuel rods as a function of the time after removal (cooling time) from irradiation in the Catawba-1 PWR core. The total decay heat is the sum of the heat energy rate from all α, β, and γ decay emissions. The results are listed in the Appendix B output files under the three groupings of the nuclides: light elements (LE) [activation products], actinides (Act), and fission products (FP).

Table 2 presents the actinide and fission product contributions separately as well as the total decay heat (the decay heat from the light element activation products is very small). Note that the total decay heat is an upper limit to what is manifested in the spent fuel rod material: a sizeable portion of the gamma ray emissions can escape the material sample and containers and thus not contribute to the heating, but all the decay heat from the α- and β-radiation is captured because of the short-range of these particles.

**Table 2. Total decay heat (W per MTIHM) for Irradiated MOX Fuel Rods as function of cooling time**

| **Date:** | | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
|---|---|---|---|---|---|---|
| **Days after removal on 5/03/2008:** | | **264** | **1997** | **2090** | **2455** | **2820** |
| **B4 (high Pu)** | Act | 3.391E+03 | 7.661E+02 | 7.675E+02 | 7.741E+02 | 7.807E+02 |
| | FP | 1.855E+04 | 1.931E+03 | 1.819E+03 | 1.501E+03 | 1.304E+03 |
| | **Total** | **2.194E+04** | **2.697E+03** | **2.586E+03** | **2.275E+03** | **2.085E+03** |
| **A1 (low Pu)** | Act | 2.880E+03 | 7.712E+02 | 7.698E+02 | 7.652E+02 | 7.612E+02 |
| | FP | 1.505E+04 | 1.634E+03 | 1.540E+03 | 1.273E+03 | 1.106E+03 |
| | **Total** | **1.793E+04** | **2.405E+03** | **2.310E+03** | **2.039E+03** | **1.867E+03** |
| **C1 (medium Pu)** | Act | 3.075E+03 | 7.511E+02 | 7.511E+02 | 7.511E+02 | 7.518E+02 |
| | FP | 1.619E+04 | 1.725E+03 | 1.626E+03 | 1.343E+03 | 1.166E+03 |
| | **Total** | **1.926E+04** | **2.476E+03** | **2.377E+03** | **2.094E+03** | **1.918E+03** |
| **B14 (high Pu)** | Act | 3.403E+03 | 7.695E+02 | 7.708E+02 | 7.768E+02 | 7.827E+02 |
| | FP | 1.855E+04 | 1.931E+03 | 1.820E+03 | 1.502E+03 | 1.305E+03 |
| | **Total** | **2.195E+04** | **2.701E+03** | **2.591E+03** | **2.279E+03** | **2.088E+03** |
| **K5 (high Pu)** | Act | 2.709E+03 | 5.940E+02 | 5.966E+02 | 6.074E+02 | 6.182E+02 |
| | FP | 1.643E+04 | 1.635E+03 | 1.540E+03 | 1.271E+03 | 1.106E+03 |
| | **Total** | **1.914E+04** | **2.229E+03** | **2.136E+03** | **1.878E+03** | **1.725E+03** |

The decay heat contributions presented in Table 2 and plotted in detail in Figures 3 and 4 show that the total decay heat drops off quickly at shorter cooling times then declines steadily with time. Figure 3 shows the time behavior of the decay heat (W/MTIHM) for the five MOX fuel rods from the time the rods were transported to ORNL until January 2016.

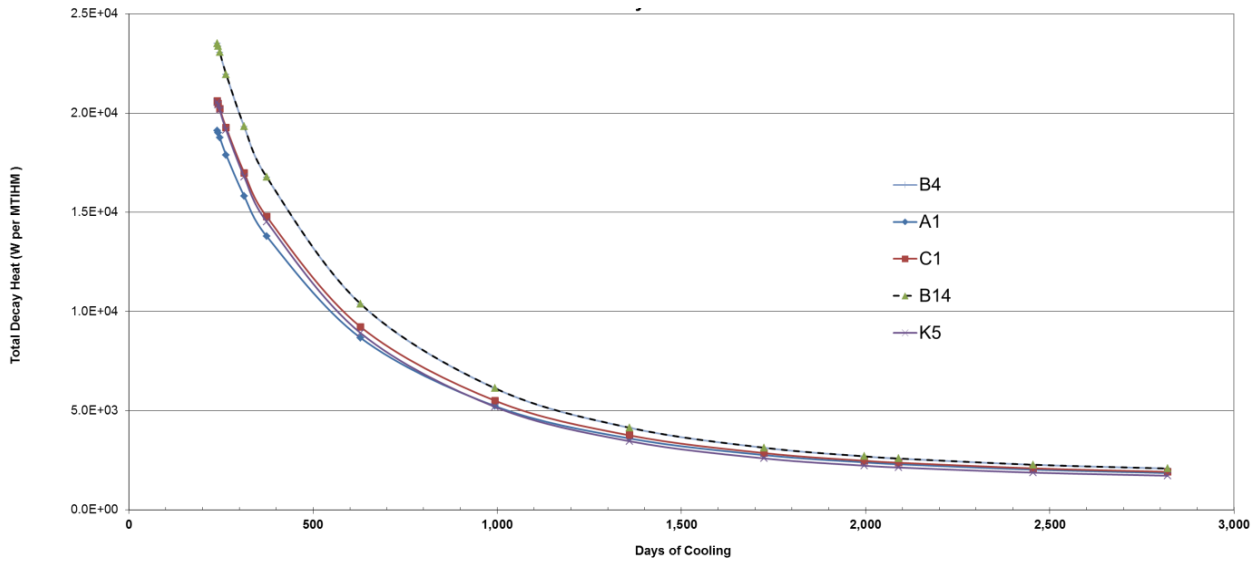


**Fig. 3. Decay heat for the MOX fuel rods as function of cooling time.**

Figure 4 show the time dependence of the decay power for the MOX fuel rods for recent and future dates when the curves are flatter. Figure 4 concentrates on the shallower declining stage of the decay heat curves from about the start of 2012 until January 2016. The trend is that the higher the initial Pu content in the MOX fuel rods, the greater the total decay heat at each time step; however, the location of the fuel rod in the LTA has a bearing on the decay heat behavior.

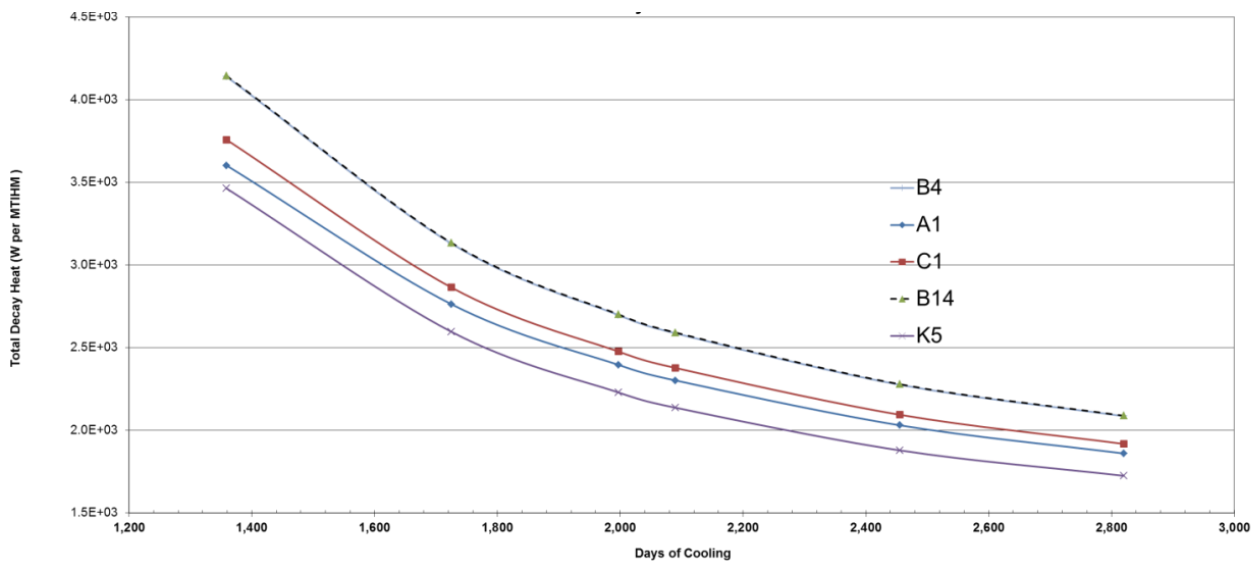


**Fig. 4. Decay heat for the MOX fuel rods.**

Figure 5 shows the decay heat for the high-Pu MOX fuel rod B4 which had one of the highest reported burnup levels at discharge. The total decay heat is shown as well as the contributions from fission products (initially quite large) and the contributions from actinide nuclides.

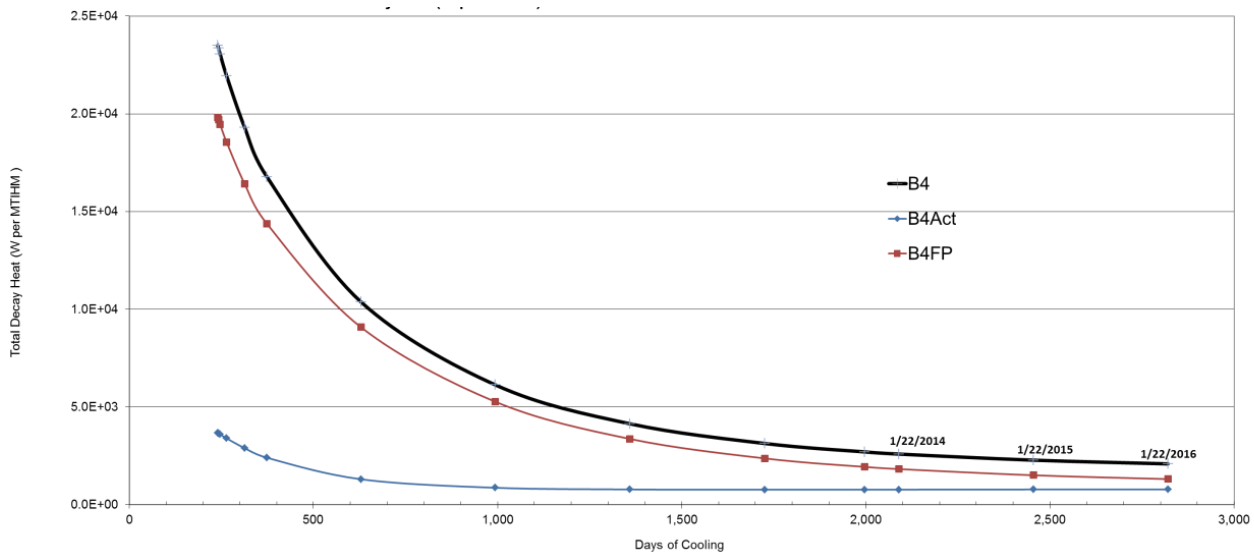


**Fig. 5. Decay heat (total, actinide, fission product) for the higher burnup MOX fuel rod B4.**

Figure 5 shows the decay heat curves from actinide and fission product nuclides, in high Pu content, high burnup, MOX fuel rod B4, in addition to the total decay heat curve. The initial fission product contribution to the decay heat is considerably greater than the actinide component, with the two components nearing in magnitude by 2016 and should be equal in 2017 or 2018, after which the actinide decay heat will generally dominate.

Table 3 presents details of the activity of the MOX fuel rods for a range of milestone dates, from January 2009 until January 2016. The very high activities in the eight months from discharge (May 2008) until they arrived at ORNL, are not shown in Table 3. However, for example, at the time of discharge, the activity of the material in MOX fuel rod B4 is high: the actinide component is 49.45 MCi/MTIHM and the fission product component is 203.24 MCi/MTIHM, for a total activity of 252.27 MCi/MTIHM. By the time MOX fuel rod B4 arrived at ORNL, the total activity had dropped substantially, by a factor of nearly 52. On January 22, 2009 (after a cooling time of 264 days), the total activity was 4.863 MCi/MTIHM, with the actinide component being 0.635 MCi/MTIHM and the fission product component being 4.228 MCi/MTIHM.

**Table 3. Activity (Ci per MTIHM) for Irradiated MOX Fuel Rods as function of cooling time**

| Date: | | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|---|
| **Days after removal on 5/03/2008:** | | **264** | **1997** | **2090** | **2455** | **2820** |
| **B4 (high Pu)** | Act | 6.347E+05 | 4.525E+05 | 4.473E+05 | 4.275E+05 | 4.085E+05 |
| | FP | 4.228E+06 | 5.625E+05 | 5.385E+05 | 4.690E+05 | 4.246E+05 |
| | **Total** | **4.863E+06** | **1.015E+06** | **9.858E+05** | **8.964E+05** | **8.331E+05** |
| **A1 (low Pu)** | Act | 4.451E+05 | 3.129E+05 | 3.093E+05 | 2.957E+05 | 2.826E+05 |
| | FP | 3.406E+06 | 4.683E+05 | 4.486E+05 | 3.918E+05 | 3.553E+05 |
| | **Total** | **3.851E+06** | **7.812E+05** | **7.580E+05** | **6.875E+05** | **6.379E+05** |
| **C1 (medium Pu)** | Act | 5.163E+05 | 3.648E+05 | 3.606E+05 | 3.446E+05 | 3.294E+05 |
| | FP | 3.669E+06 | 4.971E+05 | 4.761E+05 | 4.153E+05 | 3.764E+05 |
| | **Total** | **4.186E+06** | **8.619E+05** | **8.367E+05** | **7.599E+05** | **7.057E+05** |
| **B14 (high Pu)** | Act | 6.331E+05 | 4.511E+05 | 4.458E+05 | 4.260E+05 | 4.072E+05 |
| | FP | 4.227E+06 | 5.624E+05 | 5.383E+05 | 4.688E+05 | 4.244E+05 |
| | **Total** | **4.860E+06** | **1.013E+06** | **9.842E+05** | **8.949E+05** | **8.316E+05** |
| **K5 (high Pu)** | Act | 5.892E+05 | 4.264E+05 | 4.215E+05 | 4.027E+05 | 3.848E+05 |
| | FP | 3.789E+06 | 4.883E+05 | 4.671E+05 | 4.061E+05 | 3.673E+05 |
| | **Total** | **4.378E+06** | **9.147E+05** | **8.886E+05** | **8.088E+05** | **7.521E+05** |

Figure 6 presents the curves of the time-dependence of activity for the five MOX fuel rods from early 2009 until 2016. The large spikes in activity at discharge and in the early cooling stages are not shown in the table above nor shown in the curves, but are discussed in the next section.

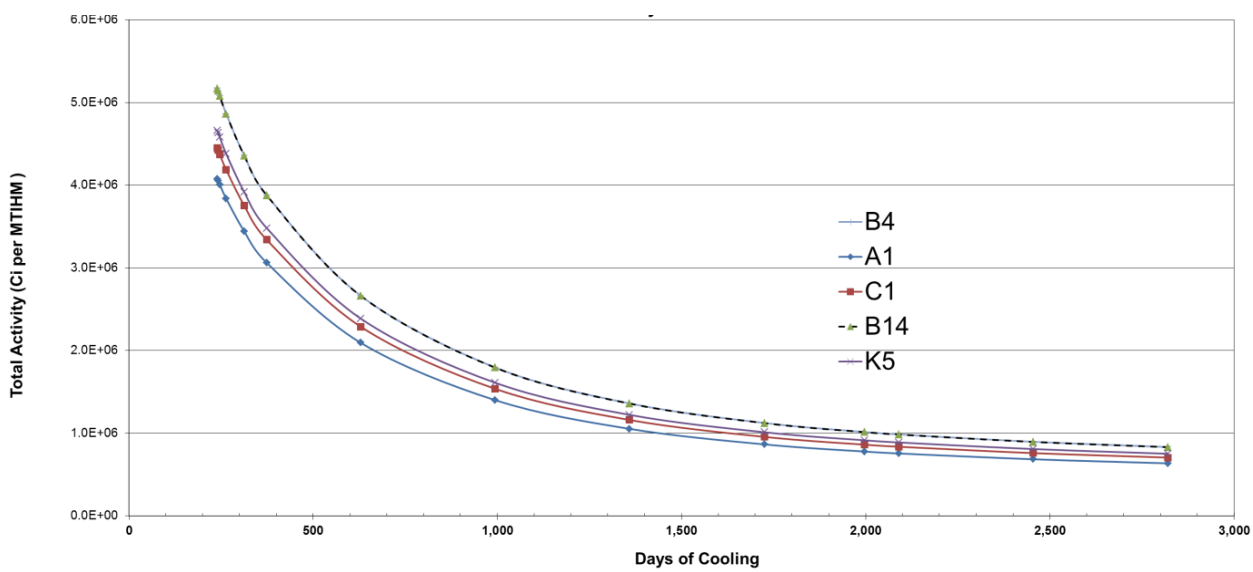


**Fig. 6. Activity of the MOX fuel rods as function of cooling time.**

Figure 7 shows the total activity curves for the five MOX fuel rods for the last few years from early 2012 until January 2016.

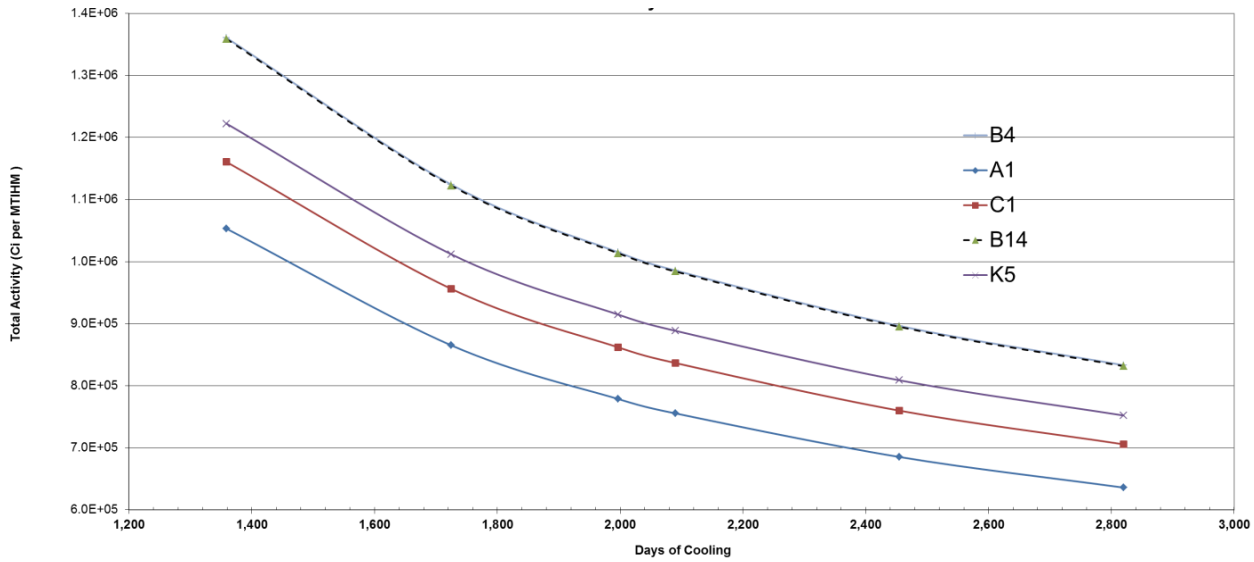


**Fig. 7. Activity of the MOX fuel rods.**

Table 3 and Figures 6 and 7 present the data and curves for the activity (in Ci per MTIHM) for the five MOX fuel rods. The time behavior and dependencies of the radioactivities is similar to that of the decay heat. The fission product activity comes very close to equaling the actinide activity by 2016. Figure 7, like Figure 5 for decay heat, shows the time behavior of the activity from 2012 until early 2016. As with the decay heat curves, the activity curves are similar in shape for the various fuel rods, with the relative magnitude of the curves ranging from the highest (high-Pu content B4 and B14) to the lowest (low-Pu A1).

Figure 8 compares the fission product and actinide activities for the high activity fuel rod B4 (very similar to B14), with the total activity also shown

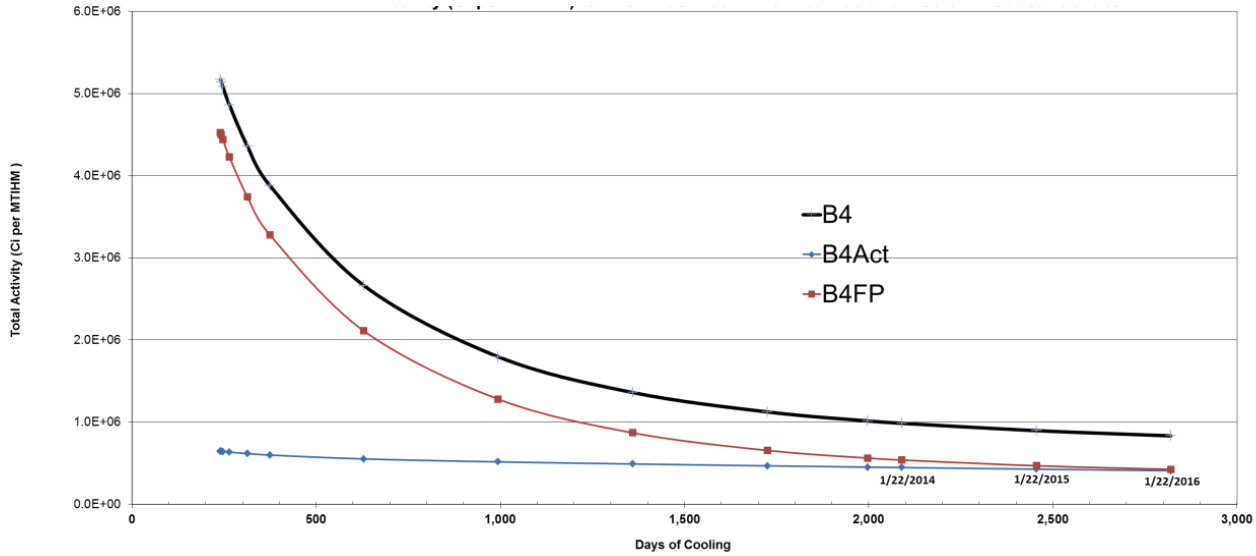


**Fig. 8. Activity (total, actinide, fission product) for the higher burnup MOX fuel rod B4.**

As evident in this figure, the fission product and actinide activities are very similar in magnitude by 2016. The activities due to the fission product radionuclides and due to the actinide nuclides are shown, as well as the total activity. Some of the current and latter important milestone dates are shown on the curves.

Table 4 presents the dose equivalent rates (rem/hr) for the five MOX fuel rods, which span a range in initial Pu loading and in discharge burnup levels. The dose equivalent values were determined using the SCALE/MAVRIC code with the gamma source information from the appropriate ORIGEN case output results. For convenience, the specific dose equivalent rates in rem/hr per gram of discharged fuel material are tabulated.

**Table 4. Dose Equivalent Rates (rem/hr) at one-foot from a one-gram sample of the oxide fuel**

| Cooling Days: | 2090 | 2455 | 2820 |
|---|---|---|---|
| Date: | 1/22/2014 | 1/22/2015 | 1/22/2016 |
| MOX Fuel Rod B4 (high Pu loading) | **1.242** | **1.042** | **0.909** |
| MOX Fuel Rod A1 (low Pu loading) | **1.050** | **0.880** | **0.770** |
| MOX Fuel Rod C1 (medium Pu loading) | **1.108** | **0.930** | **0.811** |
| MOX Fuel Rod B14 (high Pu loading) | **1.237** | **1.038** | **0.906** |
| MOX Fuel Rod K5 (high Pu loading) | **1.030** | **0.865** | **0.755** |

The discharge burnup levels for MOX fuel rods B14 and B4, both high Pu-loaded rods, are greater than for A1, a low Pu-loaded fuel rod, but they are also higher than the other high Pu-loaded fuel rod K5. The specific dose equivalent rates are shown for convenient milestone dates for the MOX fuel rod compositions. The MOX fuel rods were removed from irradiation in the Catawba-1 core in May 2008 and have been cooling since then; the fuel rods arrived at ORNL on January 22, 2009. Of interest in regards to comparison to the dose equivalent rates presented in Table 4, at the time of discharge from Catawba-1 in May 2008, after a simulated 1-second of cooling, the dose equivalent rate at a distance of 1 foot from a sample was calculated to have been 1322.3 rem/hr per gram of fuel material from MOX fuel rod B4. This high specific 1-foot dose equivalent rate has thus dropped by a factor of nearly 1200 from the time of discharge until mid-2014. As of mid-2014, the dose equivalent rate at 1-foot distance for the five irradiated and cooled MOX fuel rods range from about 1.10 to 0.90 rem/hr per gram of the discharged MOX fuel material.

## 4. RECOMMENDATIONS FOR FUTURE MODELING OF THE MOX FUEL RODS

As discussed above, the five MOX fuel rods analyzed in this work were modeled as components of a TRITON t-depl model representing the MX03 LTA fuel assembly. The fuel rods were individually modeled, in the environment of the full MOX LTA assembly normalized to the MOX pin power and burnup history based on given AREVA/Duke Energy exit rod burnup values.

An independent assessment and calculation of the burnup compositions for the five MOX fuel rods would require details and specifics of the neighboring LEU fuel assemblies in the Catawba-1 reactor core, and added details for any burnable posons and other aspects of the MOX LTAs. It is likely that the surrounding LEU assemblies were specialized in terms of WABA or IFBA burnable poisons, especially in the LEU assembly peripheries, such that the neutron flux in the MOX to LEU assembly interface regions is controlled so that the MOX fuel rods in the outer row of the LTA are not over-powered.

The selected MOX fuel rods, especially A1 (low Pu) and C1(medium Pu), may have attained higher burnup levels than estimated in the given data. Preliminary assay measurements of the MOX fuel rod compositions at ORNL suggest that there are trends and biases in the measured results not reflected in the calculations discussed in this report, that was based on the available modeling, material, and power history data.

# 5. SUMMARY AND CONCLUSIONS

This report presents the results calculated for the nuclide compositions of the MOX fuel rods (B4, A1, C1, B14, and K5) from MX03 LTA irradiated in Catawba-1 PWR core, discharged in May 2008 and shipped to ORNL on January 22, 2009. The calculations were performed with the SCALE 6.1.3 scientific code package with models based on as much information about the MX03 LTA design and the Catawba-1 core details that were available, and the simulated power histories used in the calculations were contingent on considering the discharge burnup levels provided by AREVA/Duke Energy.

This report presents details on the nuclide weight fraction and activity (by radionuclide) for a range of useful time steps (dates) for the five selected MOX fuel rods. In addition, results are provided for the decay heat and dose equivalent rates for the discharged MOX fuel rod material.

MOX fuel rods B4, B14, and K5 were all high initial Pu content, and were located in the interior of the MX03 LTA. MOX fuel rods C1 (medium Pu) and A1 (low Pu) were irradiated on the outer periphery of the LTA, and with fuel rod A1 located at a vertex location. These two fuel rods are most susceptible to the thermal neutron flux and influence of the neighboring LEU fuel assemblies in the Catawba-1 core, for cycles C-16 and C-17. To determine accurately the compositions of these pins, in particular, details and information about the nearby LEU assemblies, the inter-assembly gaps, burnable poisons in the LEU assemblies and in the MX03 LTA are required. These would allow for fuel rod burnup levels to be determined based on a detailed core model. Preliminary assay measurements conducted at ORNL for the MOX fuel rods suggest that there are differences in isotopics and estimated burnup levels.

The MOX fuel rods were removed from irradiation in the Catawba-1 core in May 2008 and have been cooling since then; the fuel rods arrived at ORNL on January 22, 2009. The ultimate fuel burnup and sample dose equivalent rates for the various MOX fuel rods are dependent on the initial Pu loading of the initial rod fuel material and on the location of the fuel rod within the MOX LTA (MX03).

# 6. REFERENCES


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2. Duke-Energy website for Catawba Nuclear Station, available online. URL: http://www.duke-energy.com/power-plants/nuclear/catawba.asp

3. United States Nuclear Regulatory Commission webpage for Catawba Nuclear Station, Unit 1, available online. URL: http://www.nrc.gov/info-finder/reactor/cat1.html

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5. *MOX Fuel Design Report*, BAW-10238(NP), Revision 1, 43-10238NP-01, NRC ADAMS Accession No. ML031550349, Framatome ANP, Inc., Lynchburg, VA, May 2003.

6. Kevin McCoy, Patrick Blanpain, Robert Morris, Bruce Bevard, "Hot Cell Examination of Weapons-Grade MOX Fuel", Proceedings of the 2010 LWR Fuel Performance/TopFuel/WRFPM Conference, Orlando, Florida, September 26-29, 2010.

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# APPENDIX A.

## SAMPLE TRITON IRRADIATION/DEPLETION CASE MOXB4X.INP FOR MOX FUEL ROD B4

## APPENDIX A. SAMPLE TRITON IRRADIATION/DEPLETION CASE MOXB4X.INP FOR MOX FUEL ROD B4

The following is a sample SCALE 6.1.3/TRITON input case used in t-depl mode to model the irradiation of the B4 fuel rod in the MX03 LTA, during cycles C-16 and C-17 in the Catawba-1 PWR core. In the following input file listing, proprietary and non-published details and material specifications are redacted for protection. The simulation calculates the depletion and generation of the fuel composition nuclides during the two cycles of operation, with appropriate down times, and some post-discharge decay time. The materials (for this fuel rod, and the other four) are further decayed with ORIGEN in cases discussed in Appendix B.

```
=t-depl   parm=(centrm, addnux=4)
MOX, Westinghouse 17x17 PWR, Catawba c16, c17  for AREVA nom b4 pin
V7-238
read alias
$clad 410-417 end
$cool 430-437 end
$gas  450-457 end
end alias
read comp
'
'
' high pu (generic)
uo2    301 den=10.4545 .95014  924 92235 0.25 92238 99.7471 92234 .00172101 92236 .00115  end
puo2   301 den=10.4545 .04985 924 94239 94.02451308 94240 5.83741696 94241 .0984597 94242 .027161 94238 .01244893 end
'am-241 301 den=10.4545 .000004514 924 end
atomam241  301  10.4545  2 95241 1 8016 2 0.000004514 924   end
'
' medium pu (generic)
uo2    302 den=10.3845 .966773  924 92235 0.25 92238 99.7471 92234 .00172101 92236 .00115  end
puo2   302 den=10.3845 .033225 924 94239 94.31204 94240 5.56486 94241 .08377 94242 .02735 94238 .01197 end
'am-241 302 den=10.3845 .000002272 924 end
atomam241  302  10.3845  2 95241 1 8016 2 0.000002272 924   end
'
' low pu (generic)
uo2    303 den=10.4635 .975817  924 92235 0.25 92238 99.7471 92234 .00172101 92236 .00115  end
puo2   303 den=10.4635 .02418 924 94239 94.26247 94240 5.61164 94241 .09092 94242 .02098 94238 .01399 end
'am-241 303 den=10.4635 .000002819 924 end
atomam241  303  10.4635  2 95241 1 8016 2 0.000002819 924   end
`
`
`
`Note: below, the actual initial isotopic compositions of the b4, a1, c1, b14, and k5 MOX fuel rods are redacted to
`  protect proprietary information.
`
' b4
uo2    311 [redacted]
puo2   311 [redacted]
[redacted]  end
'
'
' a1
uo2    312 [redacted]
puo2   312 [redacted]
[redacted]  end
'
'
' c1
uo2    313 [redacted]
puo2   313 [redacted]
[redacted]  end
'
'
' b14
uo2    314 [redacted]
puo2   314 [redacted]
[redacted]  end
'
'
' k5
uo2    315 [redacted]
puo2   315 [redacted]
[redacted]  end
'
'
' below is an approximate recipe for M5 advanced cladding material
'
arbmzirc 6.553 2 0 0 1 40000 98.80 41000 1.20
     $clad 1 628 end
'
```

```
'
h2o    $cool den=0.72    1  581.32 end
arbm-bormod 0.72   1 1 0 0 5000 100 $cool 600.0-6 581.32 end
'
n      $gas den=0.00125 1  650 end
end comp
'
'
'
'
' ---------------------------------------------------------------
'       fuel-pin-cell geometry
'
read celldata
'
' high pu
latticecell squarepitch  pitch=1.26 430  fuelr=0.409575  301  cladr=0.47498  410  gapr=0.4178  450  end
'
latticecell squarepitch  pitch=1.26 431  fuelr=0.409575  302 cladr=0.47498  411  gapr=0.4178  451  end
'
latticecell squarepitch  pitch=1.26 432   fuelr=0.409575  303  cladr=0.47498  412  gapr=0.4178  452  end
'
latticecell squarepitch  pitch=1.26 433 fuelr=0.409575  311  cladr=0.47498  413  gapr=0.4178  453  end
'
latticecell squarepitch  pitch=1.26 434 fuelr=0.409575  312  cladr=0.47498  414  gapr=0.4178  454  end
'
latticecell squarepitch  pitch=1.26 435 fuelr=0.409575  313  cladr=0.47498  415  gapr=0.4178  455  end
'
latticecell squarepitch  pitch=1.26 436 fuelr=0.409575  314  cladr=0.47498  416  gapr=0.4178  456  end
'
latticecell squarepitch  pitch=1.26 437 fuelr=0.409575  315  cladr=0.47498  417  gapr=0.4178  457  end
'
end celldata
'
read depletion -311 301 302 303  end depletion
'
read burndata
'
power= 52.302878 burn=499 down=48 nlib=4  end
power= 43.709860 burn=485 down=240 nlib=4 end
'
end burndata
'
'
read keep
couple newt opus origen
end keep
'
read model
mox, Westinghouse 17x17 PWR catawba c16, c17
read parm
drawit=yes run=yes fillmix=3 epsilon=5e-3
cmfd=yes xycmfd=2 echo=yes outers=400
timed=yes epsilon=.005
end parm
read materials
 301 1  ! mox 1 high !  end
 302 1  ! mox 2 medium ! end
 303 1  ! mox 3 low ! end
 311  1  ! mox 1 !  end
 410  1  ! clad !  end
 411  1  ! clad !  end
 412  1  ! clad !  end
 413  1  ! clad !  end
 414  1  ! clad !  end
 415  1  ! clad !  end
 416  1  ! clad !  end
 417  1  ! clad !  end
 430  2  ! water !  end
 431  2  ! water !  end
 432  2  ! water !  end
 433  2  ! water !  end
 434  2  ! water !  end
 435  2  ! water !  end
 436  2  ! water !  end
 437  2  ! water !  end
 450  0  ! gap   !  end
 451  0  ! gap   !  end
 452  0  ! gap   !  end
 453  0  ! gap   !  end
 454  0  ! gap   !  end
 455  0  ! gap   !  end
 456  0  ! gap   !  end
 457  0  ! gap   !  end
end materials
read geom
'
unit 1
com='regular fuel rod'
cylinder 10 .409575
cylinder 20 .4178
cylinder 30 .47498
cuboid   40  4p0.63
media 301 1 10
media 450 1 20 -10
```

```
media 410 1 30 -20
media 430 1 40 -30
boundary 40 4 4
'
unit 2
com='regular fuel rod'
cylinder 10 .409575
cylinder 20 .4178
cylinder 30 .47498
cuboid   40  4p0.63
media 302 1 10
media 451 1 20 -10
media 411 1 30 -20
media 431 1 40 -30
boundary 40 4 4
'
unit 3
com='regular fuel rod'
cylinder 10 .409575
cylinder 20 .4178
cylinder 30 .47498
cuboid   40  4p0.63
media 303 1 10
media 452 1 20 -10
media 412 1 30 -20
media 432 1 40 -30
boundary 40 4 4
'
unit 311
com='regular fuel rod'
cylinder 10 .409575
cylinder 20 .4178
cylinder 30 .47498
cuboid   40  4p0.63
media 311 1 10
media 454 1 20 -10
media 414 1 30 -20
media 434 1 40 -30
boundary 40 4 4
'
'
unit 5
com='guide tube'
cylinder 10 .56135
cylinder 20 .6050
cuboid   40  4p0.63
media 430 1 10
media 410 1 20 -10
media 430 1 40 -20
boundary 40 4 4
'
unit 11
com='right half of high fuel rod'
cylinder 10 .409575 chord +x=0
cylinder 20 .4178 chord +x=0
cylinder 30 .47498 chord +x=0
cuboid   40  0.63 0.0 2p0.63
media 301 1 10
media 450 1 20 -10
media 410 1 30 -20
media 430 1 40 -30
boundary 40 2 4
'
unit 21
com='right half of medium fuel rod'
cylinder 10 .409575 chord +x=0
cylinder 20 .4178 chord +x=0
cylinder 30 .47498 chord +x=0
cuboid   40  0.63 0.0 2p0.63
media 302 1 10
media 451 1 20 -10
media 411 1 30 -20
media 431 1 40 -30
boundary 40 2 4
'
unit 12
com='top half of high fuel rod'
cylinder 10 .409575 chord +y=0
cylinder 20 .4178 chord +y=0
cylinder 30 .47498 chord +y=0
cuboid   40  2p0.63 0.63 0.0
media 301 1 10
media 450 1 20 -10
media 410 1 30 -20
media 430 1 40 -30
boundary 40 4 2
'
unit 22
com='top half of medium fuel rod'
cylinder 10 .409575 chord +y=0
cylinder 20 .4178 chord +y=0
cylinder 30 .47498 chord +y=0
cuboid   40  2p0.63 0.63 0.0
media 302 1 10
media 451 1 20 -10
```

```
media 411 1 30 -20
media 431 1 40 -30
boundary 40 4 2
'
unit 51
com='right half of guide tube'
cylinder 10 .56135 chord +x=0
cylinder 20 .6050 chord +x=0
cuboid   40  0.63 0.0 2p0.63
media 430 1 10
media 410 1 20 -10
media 430 1 40 -20
boundary 40 2 4
'
unit 52
com='top half of guide tube'
cylinder 10 .56135 chord +y=0
cylinder 20 .6050 chord +y=0
cuboid   40  2p0.63 0.63 0.0
media 430 1 10
media 410 1 20 -10
media 430 1 40 -20
boundary 40 4 2
'
unit 53
com='1/4 instrument tube'
cylinder 10 .56135 chord +x=0 chord +y=0
cylinder 20 .6050 chord +x=0 chord +y=0
cuboid   40  0.63 0.0 0.63 0.0
media 430 1 10
media 410 1 20 -10
media 430 1 40 -20
boundary 40 2 2
'
global unit 10
cuboid 10 10.71 0.0 10.71 0.0
array 1 10 place 1 1 0 0
media 430 1 10
boundary 10 36 36
'
end geom
read array
ara=1 nux=9 nuy=9 typ=cuboidal fill
53  12 12 52 12 12 52  22   22
11  1  1  1  1  1  1   1    2
11  1  1  1  1  1  1   1    2
51  1  1  5  1  1  5   2    2
11  1  1  1  1  1  1   1    2
11  1  1  1  1  5  1   311  2
51  1  1  5  1  1  1   2    2
21  1  1  2  1  1  2   2    3
21  2  2  2  2  2  2   3    3 end fill
end array
read bounds all=refl end bounds
end model
end
=shell
cp ft71f001 $RTNDIR/ft71_mox_b4x
end
```

# APPENDIX B.

# ORIGEN DECAY CASES FOR THE FIVE SELECTED MOX FUEL RODS

# APPENDIX B. ORIGEN RESULTS FOR COOLING MOX FUEL RODS

## B.1 ORIGEN RESULTS FOR COOLING MOX FUEL ROD B4

```
 ******************************************************************************
 *                                                                            *
 *                              SCALE 6.1.3                                   *
 *                             ------------                                   *
 *                             October  2013                                  *
 *                                                                            *
 *          SCALE:  A Comprehensive Modeling and Simulation Suite             *
 *                  for Nuclear Safety Analysis and Design                    *
 *                                                                            *
 *                     Reactor and Nuclear Systems Division                   *
 *                       Oak Ridge National Laboratory                        *
 *                                                                            *
 *                          http://scale.ornl.gov                             *
 *                           scalehelp@ornl.gov                               *
 *                                                                            *
 ******************************************************************************

 ******************************************************************************

                  Job Information
                  ---------------
      Job started on jupiter on Mon 21/10/2013 11:39:14
      Working directory: /tmp/scale.8re.2289
      Input file name  : /home/8re/MOX/b4xmox.inp
      Output file name : /home/8re/MOX/b4xmox.out

 ******************************************************************************
          primary module access and input record ( Scale 6.1 driver )


    module shell will be called at 11:39:14.794 on 10/21/2013.
    sequence specification record:#shell

    Input Data:

      cp $RTNDIR/ft71_mox_b4x ft71f001

    module shell  is finished. completion code     0. total cpu time used .04 seconds.


    module origens will be called at 11:39:14.827 on 10/21/2013.
    sequence specification record:#origens

    Input Data:

      0$$ a11 71 e t
      Decay Case
      3$$ 21 1 1 0 a16 2 a33 0 e t
      35$$ 0 t
      54$$ a1 1 a8 1 a11 0  e
      56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
      57** 0 a3 0.0 e
      95$$ 0 t
      5 more years for cooling used fuel material
      ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
      '
      '
      '                  14      365      365       366       272       93
      '
      '      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      ' 60** 2         6.5  24      73      134     389     754     1119    1485    1757     1850    2215    2580
      '
      60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
      '61** 1e-8 1e-20 5r1e-8
      61** 1e-20 1e-20 5r1e-20
      65$$
      'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
      t
      56$$ f0 t

    module origens  is finished. completion code     0. total cpu time used .14 seconds.

    Scale is finished at 11:39:14.969 on 10/21/2013
1



        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                    program verification information                                       *****
        *****                                                                                                          *****
        *****                                 code system:  SCALE    version:  6.1                                     *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****              program:  origen                                                                            *****
        *****                                                                                                          *****
        *****        creation date:  21_feb_2013                                                                       *****
        *****                                                                                                          *****
        *****              library:  /scale/scale6.1/Linux_x86_64/bin                                                  *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****      production code:  origen                                                                            *****
        *****                                                                                                          *****
        *****             revision:  6.1.2                                                                             *****
        *****                                                                                                          *****
        *****              jobname:  8re                                                                               *****
        *****                                                                                                          *****
        *****         machine name:  jupiter.ornl.gov                                                                  *****
        *****                                                                                                          *****
        *****    date of execution:  21_oct_2013                                                                       *****
        *****                                                                                                          *****
        *****    time of execution:  11:39:14.83                                                                       *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
1
1            * input echo * (with break between col. 1-72 and 73-80)
0        note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0...............................columns 1-72...............................                ..73-80.

 0$$ a11 71 e t
 Decay Case
 3$$ 21 1 1 0 a16 2 a33 0 e t
 35$$ 0 t
 54$$ a1 1 a8 1 a11 0  e
```

```
 56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
 57** 0 a3 0.0 e
 95$$ 0 t
 5 more years for cooling used fuel material
 ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
 '
 '
 '                  14      365      365       366       272       93
 '
 '      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/                22/13 10
 ' 60** 2          6.5  24      73      134     389     754     1119   14                85   17
 '
 60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
 '61** 1e-8 1e-20 5r1e-8
 61** 1e-20 1e-20 5r1e-20
 65$$
 'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
 t
 56$$ f0 t
0when job "fails", make sure no fido input............................................. is out here!


     0$ array     12 entries read

     0t

     3$ array     33 entries read

     0t
1library information...

          cross-section data taken from position number    1 of library on unit 21.

          ******************************************************************************
          *                          ENDF/B-VII.1 decay data                           *
          *                         compiled August 30, 2012                           *
          *                      i.c. gauld, g. ilas, m. pigni                         *
          *                  reactor and nuclear systems division                      *
          *                     oak ridge national laboratory                          *
          ******************************************************************************
0         ******************************************************************************
0                   .other identification and sizes of library.
0                    data set name:  /scale/scale6.1/data/origen.rev03.end7dec
0                 8/31/2012    date library was produced
0                       2237    total number of nuclides in library
                         910    number of light-element nuclides
                         176    number of actinide nuclides
                        1151    number of fission product nuclides
0                       2636    number of nonzero off-diagonal matrix elements
0         ******************************************************************************

    35$ array      1 entries read

     0t

    54$ array     12 entries read

    56$ array     20 entries read

    57* array      5 entries read

    95$ array      1 entries read

     0t


                  14      365      365       366       272       93

      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10
  60** 2          6.5  24      73      134     389     754     1119   1485   17

 61** 1e-8 1e-20 5r1e-8

    60* array     13 entries read

    61* array      7 entries read
 gram-atoms   grams   curies   watts-all   watts-gamma

    65$ array     63 entries read

     0t
0  obtaining data from position no.   43 on unit no.   71
1
     5 more years for cooling used fuel material                                                    light elements         page    1
0                                                 nuclide concentrations, grams
                                                  basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
      h  1   9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05 9.708E-05
      h  2   2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05 2.075E-05
      h  3   8.405E-07 8.403E-07 8.397E-07 8.374E-07 8.311E-07 8.234E-07 7.917E-07 7.484E-07 7.075E-07 6.687E-07 6.412E-07 6.321E-07 5.976E-07 5.649E-07
     he  3   1.957E-07 1.960E-07 1.965E-07 1.988E-07 2.051E-07 2.129E-07 2.446E-07 2.879E-07 3.288E-07 3.676E-07 3.950E-07 4.041E-07 4.387E-07 4.714E-07
     he  4   5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02 5.673E-02
     li  6   3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12 3.856E-12
     li  7   3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13 3.665E-13
     be  9   3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08 3.589E-08
     be 10   1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06 1.856E-06
      b 10   8.711E-13 8.758E-13 8.863E-13 9.271E-13 1.041E-12 1.184E-12 1.779E-12 2.630E-12 3.482E-12 4.336E-12 4.971E-12 5.187E-12 6.039E-12 6.891E-12
      b 11   1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09
      c 12   1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03 1.159E-03
      c 13   1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01 1.831E-01
      c 14   5.612E-06 5.612E-06 5.612E-06 5.612E-06 5.612E-06 5.612E-06 5.612E-06 5.611E-06 5.610E-06 5.610E-06 5.609E-06 5.609E-06 5.608E-06 5.608E-06
      n 14   7.111E-08 7.112E-08 7.112E-08 7.116E-08 7.125E-08 7.136E-08 7.184E-08 7.252E-08 7.320E-08 7.389E-08 7.439E-08 7.457E-08 7.525E-08 7.593E-08
      n 15   1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04 1.710E-04
      o 16   2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03 2.035E+03
      o 17   4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04 4.797E-04
      o 18   1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09 1.859E-09
      f 19   1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15 1.388E-15
     na 23   6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16 6.286E-16
     mg 24   6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16
     mg 25   6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16
     mg 26   7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16
     al 27   7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16
     si 28   7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16
     si 29   7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16
     si 30   8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16
      p 31   8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16
      s 32   8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16
      s 33   8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16
      s 34   9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16
      s 36   9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16
     cl 35   9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16 9.114E-16
     cl 36   4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17 4.942E-17
     cl 37   1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15
     ar 38   9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16
     ar 38   1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15
     ar 39   1.820E-18 1.820E-18 1.820E-18 1.820E-18 1.819E-18 1.819E-18 1.815E-18 1.811E-18 1.806E-18 1.801E-18 1.798E-18 1.797E-18 1.792E-18 1.787E-18
     ar 40   1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15
      k 39   1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15
      k 40   1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15
      k 41   1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15
     ca 40   1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15
     ca 41   6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19 6.069E-19
     ca 42   1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15
     ca 43   1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15
     ca 44   1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15
     ca 46   1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15
     ca 48   1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15
     sc 45   1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15 1.194E-15
     sc 46   7.434E-19 7.312E-19 7.045E-19 6.095E-19 4.064E-19 2.453E-19 2.976E-20 1.453E-21 7.095E-23 3.436E-24 3.621E-25 1.678E-25 8.192E-27 4.000E-28
1
```

5 more years for cooling used fuel material light elements page 2

0 nuclide concentrations, grams

basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ti 46 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 | 1.296E-15 |
| ti 47 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 | 1.284E-15 |
| ti 48 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 | 1.305E-15 |
| ti 49 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 | 1.351E-15 |
| ti 50 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 |
| v 50 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 | 8.734E-19 |
| v 51 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 | 2.677E-17 |
| cr 50 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 |
| cr 52 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 |
| cr 53 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 |
| cr 54 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 |
| mn 54 | 3.580E-19 | 3.564E-19 | 3.528E-19 | 3.394E-19 | 3.044E-19 | 2.658E-19 | 1.509E-19 | 6.706E-20 | 2.981E-20 | 1.322E-20 | 7.226E-21 | 5.877E-21 | 2.612E-21 | 1.161E-21 |
| mn 55 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.474E-15 | 1.474E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 |
| fe 54 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 |
| fe 55 | 2.854E-18 | 2.850E-18 | 2.841E-18 | 2.807E-18 | 2.714E-18 | 2.602E-18 | 2.181E-18 | 1.694E-18 | 1.316E-18 | 1.022E-18 | 8.467E-19 | 7.940E-19 | 6.169E-19 | 4.792E-19 |
| fe 56 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 |
| fe 57 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 |
| fe 58 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 |
| co 59 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 |
| co 60 | 1.502E-16 | 1.501E-16 | 1.499E-16 | 1.489E-16 | 1.463E-16 | 1.431E-16 | 1.306E-16 | 1.145E-16 | 1.004E-16 | 8.801E-17 | 7.980E-17 | 7.717E-17 | 6.767E-17 | 5.934E-17 |
| ni 58 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 |
| ni 59 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 | 1.280E-15 |
| ni 60 | 1.972E-15 | 1.972E-15 | 1.972E-15 | 1.973E-15 | 1.976E-15 | 1.979E-15 | 1.992E-15 | 2.008E-15 | 2.022E-15 | 2.034E-15 | 2.042E-15 | 2.045E-15 | 2.055E-15 | 2.063E-15 |
| ni 61 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 |
| ni 62 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 |
| ni 63 | 2.792E-17 | 2.792E-17 | 2.792E-17 | 2.791E-17 | 2.788E-17 | 2.785E-17 | 2.772E-17 | 2.753E-17 | 2.734E-17 | 2.716E-17 | 2.702E-17 | 2.697E-17 | 2.679E-17 | 2.660E-17 |
| ni 64 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 |
| cu 63 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 |
| cu 65 | 3.551E-18 | 3.551E-18 | 3.551E-18 | 3.551E-18 | 3.552E-18 | 3.552E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 | 3.553E-18 |
| zn 64 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 | 6.273E-18 |
| te123 | 1.467E-17 | 1.467E-17 | 1.467E-17 | 1.467E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 | 1.468E-17 |
| te124 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 |
| te125 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 | 3.259E-17 |
| te126 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 | 4.021E-19 |
| xe131 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 | 4.896E-16 |
| xe132 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 | 2.003E-16 |
| cs133 | 5.190E-19 | 5.190E-19 | 5.191E-19 | 5.192E-19 | 5.196E-19 | 5.201E-19 | 5.221E-19 | 5.248E-19 | 5.273E-19 | 5.297E-19 | 5.313E-19 | 5.319E-19 | 5.340E-19 | 5.359E-19 |
| ba130 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 | 2.871E-15 |
| ba132 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 | 1.392E-18 |
| la137 | 2.556E-16 | 2.556E-16 | 2.556E-16 | 2.556E-16 | 2.556E-16 | 2.556E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 | 2.555E-16 |
| la138 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 | 2.435E-17 |
| la139 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 | 3.195E-18 |
| ce136 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 | 3.439E-15 |
| yb176 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 | 1.722E-18 |
| lu175 | 4.488E-15 | 4.488E-15 | 4.489E-15 | 4.492E-15 | 4.498E-15 | 4.502E-15 | 4.506E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 |
| lu176 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 |
| hf174 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 | 2.215E-15 |
| hf175 | 1.852E-17 | 1.816E-17 | 1.737E-17 | 1.461E-17 | 8.991E-18 | 4.915E-18 | 3.934E-19 | 1.060E-20 | 2.854E-22 | 7.613E-24 | 5.150E-25 | 2.051E-25 | 5.523E-27 | 1.488E-28 |
| hf176 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 | 4.971E-15 |
| hf177 | 8.044E-16 | 8.044E-16 | 8.044E-16 | 8.045E-16 | 8.045E-16 | 8.045E-16 | 8.045E-16 | 8.046E-16 | 8.046E-16 | 8.046E-16 | 8.046E-16 | 8.046E-16 | 8.046E-16 | 8.046E-16 |
| hf178 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 | 5.132E-15 |
| hf179 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 | 1.146E-14 |

1

5 more years for cooling used fuel material light elements page 3

0 nuclide concentrations, grams

basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hf180 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 | 8.873E-15 |
| hf181 | 5.234E-19 | 5.066E-19 | 4.706E-19 | 3.535E-19 | 1.586E-19 | 5.851E-20 | 9.044E-22 | 2.314E-24 | 5.919E-27 | 1.490E-29 | 1.744E-31 | 3.811E-32 | 9.750E-35 | 0.000E+00 |
| hf182 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 | 1.496E-17 |
| ta180m | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 | 3.039E-19 |
| ta181 | 2.742E-15 | 2.742E-15 | 2.742E-15 | 2.742E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 |
| ta182 | 1.229E-17 | 1.214E-17 | 1.181E-17 | 1.063E-17 | 7.906E-18 | 5.469E-18 | 1.172E-18 | 1.292E-19 | 1.424E-20 | 1.562E-21 | 3.024E-22 | 1.726E-22 | 1.950E-23 | 2.620E-24 |
| w 182 | 4.253E-15 | 4.253E-15 | 4.254E-15 | 4.255E-15 | 4.258E-15 | 4.260E-15 | 4.264E-15 | 4.265E-15 | 4.265E-15 | 4.265E-15 | 4.265E-15 | 4.265E-15 | 4.265E-15 | 4.265E-15 |
| w 183 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 | 9.762E-15 |
| w 184 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 | 8.391E-15 |
| w 185 | 2.190E-18 | 2.150E-18 | 2.063E-18 | 1.755E-18 | 1.117E-18 | 6.359E-19 | 6.043E-20 | 2.080E-21 | 7.163E-23 | 2.443E-24 | 1.985E-25 | 8.413E-26 | 2.896E-27 | 9.972E-29 |
| w 186 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 | 3.227E-15 |
| re185 | 1.019E-15 | 1.019E-15 | 1.019E-15 | 1.020E-15 | 1.020E-15 | 1.021E-15 | 1.021E-15 | 1.022E-15 | 1.022E-15 | 1.022E-15 | 1.022E-15 | 1.022E-15 | 1.022E-15 | 1.022E-15 |
| re186m | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 | 3.017E-18 |
| re187 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 | 5.357E-15 |
| os186 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 | 3.200E-15 |
| os187 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 | 5.032E-16 |
| os188 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 | 1.988E-15 |
| os189 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 | 1.291E-16 |
| os190 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 | 3.337E-17 |
| os192 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.382E-16 | 1.382E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 | 1.383E-16 |
| ir191 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 | 1.647E-16 |
| ir192 | 4.411E-18 | 4.329E-18 | 4.150E-18 | 3.521E-18 | 2.223E-18 | 1.254E-18 | 1.144E-19 | 3.716E-21 | 1.207E-22 | 3.885E-24 | 3.022E-25 | 1.262E-25 | 4.100E-27 | 1.332E-28 |
| ir193 | 2.666E-15 | 2.666E-15 | 2.666E-15 | 2.666E-15 | 2.667E-15 | 2.667E-15 | 2.670E-15 | 2.674E-15 | 2.678E-15 | 2.682E-15 | 2.685E-15 | 2.686E-15 | 2.690E-15 | 2.694E-15 |
| pt192 | 2.374E-15 | 2.374E-15 | 2.374E-15 | 2.375E-15 | 2.376E-15 | 2.377E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 | 2.378E-15 |
| pt193 | 3.008E-16 | 3.008E-16 | 3.007E-16 | 3.005E-16 | 2.999E-16 | 2.993E-16 | 2.964E-16 | 2.923E-16 | 2.883E-16 | 2.843E-16 | 2.814E-16 | 2.804E-16 | 2.765E-16 | 2.727E-16 |
| pt194 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 | 4.861E-15 |
| pt195 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 | 3.859E-17 |
| pt196 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 | 5.770E-18 |
| au197 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 |
| hg196 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 | 3.965E-16 |
| hg198 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 |
| hg199 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 | 1.720E-15 |
| hg200 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.158E-14 |
| hg201 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 | 5.308E-15 |
| hg202 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 | 5.716E-15 |
| hg204 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 |
| tl203 | 4.163E-17 | 4.163E-17 | 4.164E-17 | 4.166E-17 | 4.169E-17 | 4.171E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 | 4.173E-17 |
| tl204 | 8.076E-19 | 8.068E-19 | 8.050E-19 | 7.979E-19 | 7.785E-19 | 7.551E-19 | 6.644E-19 | 5.532E-19 | 4.607E-19 | 3.834E-19 | 3.345E-19 | 3.193E-19 | 2.658E-19 | 2.214E-19 |
| tl205 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 | 1.991E-17 |
| pb204 | 2.433E-19 | 2.440E-19 | 2.458E-19 | 2.526E-19 | 2.714E-19 | 2.942E-19 | 3.822E-19 | 4.902E-19 | 5.800E-19 | 6.551E-19 | 7.025E-19 | 7.173E-19 | 7.692E-19 | 8.124E-19 |
| total | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 |

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5 more years for cooling used fuel material light elements page 4

0 element concentrations, grams

basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.187E-04 | 1.187E-04 | 1.187E-04 | 1.187E-04 | 1.187E-04 | 1.187E-04 | 1.186E-04 | 1.186E-04 | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.184E-04 | 1.184E-04 |
| he | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 | 5.673E-02 |
| li | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 | 4.222E-12 |
| be | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 | 1.892E-06 |
| b | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.056E-09 | 1.057E-09 | 1.058E-09 | 1.058E-09 | 1.059E-09 | 1.059E-09 | 1.060E-09 | 1.061E-09 |
| c | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 | 1.843E-01 |
| n | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 | 1.710E-04 |
| o | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 | 2.035E+03 |
| f | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 | 1.388E-15 |
| ne | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 | 2.140E-19 |
| na | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 | 6.286E-16 |
| mg | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 |
| al | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 |
| si | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 |
| p | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 |
| s | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 |
| cl | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 |
| ar | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 |
| k | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 |
| ca | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.193E-15 | 7.194E-15 | 7.198E-15 | 7.203E-15 | 7.207E-15 | 7.211E-15 | 7.214E-15 | 7.215E-15 | 7.218E-15 | 7.221E-15 |
| sc | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 |
| ti | 6.606E-15 | 6.606E-15 | 6.606E-15 | 6.606E-15 | 6.606E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 |
| v | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764E-17 | 2.764

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb | 1.931E-18 | 1.931E-18 | 1.932E-18 | 1.935E-18 | 1.943E-18 | 1.953E-18 | 1.990E-18 | 2.031E-18 | 2.062E-18 | 2.085E-18 | 2.099E-18 | 2.103E-18 | 2.117E-18 | 2.128E-18 |
| lu | 4.598E-15 | 4.599E-15 | 4.600E-15 | 4.602E-15 | 4.608E-15 | 4.612E-15 | 4.616E-15 | 4.617E-15 | 4.617E-15 | 4.617E-15 | 4.617E-15 | 4.617E-15 | 4.617E-15 | 4.617E-15 |
| hf | 3.349E-14 | 3.349E-14 | 3.349E-14 | 3.348E-14 | 3.348E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 | 3.347E-14 |
| ta | 2.755E-15 | 2.755E-15 | 2.754E-15 | 2.753E-15 | 2.751E-15 | 2.749E-15 | 2.744E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 | 2.743E-15 |
| w | 2.564E-14 | 2.564E-14 | 2.564E-14 | 2.564E-14 | 2.564E-14 | 2.564E-14 | 2.564E-14 | 2.565E-14 | 2.565E-14 | 2.565E-14 | 2.565E-14 | 2.565E-14 | 2.565E-14 | 2.565E-14 |
| re | 6.379E-15 | 6.379E-15 | 6.379E-15 | 6.380E-15 | 6.380E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 | 6.381E-15 |
| os | 5.992E-15 | 5.992E-15 | 5.992E-15 | 5.992E-15 | 5.992E-15 | 5.992E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 | 5.993E-15 |
| ir | 2.835E-15 | 2.835E-15 | 2.835E-15 | 2.834E-15 | 2.833E-15 | 2.833E-15 | 2.835E-15 | 2.839E-15 | 2.843E-15 | 2.847E-15 | 2.850E-15 | 2.851E-15 | 2.855E-15 | 2.858E-15 |
| pt | 7.579E-15 | 7.579E-15 | 7.580E-15 | 7.580E-15 | 7.581E-15 | 7.581E-15 | 7.579E-15 | 7.575E-15 | 7.571E-15 | 7.567E-15 | 7.564E-15 | 7.563E-15 | 7.559E-15 | 7.556E-15 |
| au | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 | 3.466E-15 |
| hg | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 | 4.027E-14 |
| tl | 6.235E-17 | 6.235E-17 | 6.236E-17 | 6.237E-17 | 6.239E-17 | 6.238E-17 | 6.230E-17 | 6.219E-17 | 6.210E-17 | 6.202E-17 | 6.197E-17 | 6.196E-17 | 6.191E-17 | 6.186E-17 |
| pb | 2.545E-19 | 2.553E-19 | 2.571E-19 | 2.639E-19 | 2.827E-19 | 3.055E-19 | 3.935E-19 | 5.014E-19 | 5.913E-19 | 6.663E-19 | 7.138E-19 | 7.286E-19 | 7.805E-19 | 8.236E-19 |
| totals | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 | 2.036E+03 |

1

5 more years for cooling used fuel material light elements page 5

0

nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 8.134E-03 | 8.131E-03 | 8.126E-03 | 8.104E-03 | 8.043E-03 | 7.968E-03 | 7.661E-03 | 7.242E-03 | 6.846E-03 | 6.471E-03 | 6.205E-03 | 6.117E-03 | 5.782E-03 | 5.466E-03 |
| be 10 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 | 4.397E-08 |
| c 14 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.515E-05 | 2.514E-05 | 2.514E-05 | 2.514E-05 | 2.514E-05 | 2.514E-05 | 2.513E-05 |
| na 22 | 8.260E-21 | 8.248E-21 | 8.221E-21 | 8.116E-21 | 7.832E-21 | 7.491E-21 | 6.220E-21 | 4.767E-21 | 3.653E-21 | 2.797E-21 | 2.294E-21 | 2.144E-21 | 1.643E-21 | 1.259E-21 |
| si 32 | 5.523E-21 | 5.523E-21 | 5.522E-21 | 5.521E-21 | 5.518E-21 | 5.514E-21 | 5.496E-21 | 5.471E-21 | 5.447E-21 | 5.422E-21 | 5.404E-21 | 5.398E-21 | 5.373E-21 | 5.349E-21 |
| p 32 | 7.703E-20 | 7.040E-20 | 5.766E-20 | 2.780E-20 | 5.578E-21 | 5.621E-21 | 5.498E-21 | 5.471E-21 | 5.447E-21 | 5.405E-21 | 5.399E-21 | 5.375E-21 | 5.350E-21 | 5.350E-21 |
| p 33 | 6.259E-18 | 5.926E-18 | 5.239E-18 | 3.246E-18 | 8.497E-19 | 1.602E-19 | 1.497E-22 | 6.905E-27 | 3.185E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 2.275E-15 | 2.240E-15 | 2.161E-15 | 1.882E-15 | 1.276E-15 | 7.872E-16 | 1.045E-16 | 5.799E-18 | 3.219E-19 | 1.773E-20 | 2.056E-21 | 9.843E-22 | 5.464E-23 | 3.033E-24 |
| cl 36 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 | 1.631E-18 |
| ar 37 | 2.979E-16 | 2.864E-16 | 2.620E-16 | 1.853E-16 | 7.030E-17 | 2.103E-17 | 1.356E-19 | 9.917E-23 | 7.255E-26 | 5.203E-29 | 2.396E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 6.206E-17 | 6.206E-17 | 6.205E-17 | 6.205E-17 | 6.202E-17 | 6.200E-17 | 6.189E-17 | 6.173E-17 | 6.157E-17 | 6.141E-17 | 6.129E-17 | 6.125E-17 | 6.109E-17 | 6.094E-17 |
| ar 42 | 1.020E-22 | 1.020E-22 | 1.020E-22 | 1.019E-22 | 1.016E-22 | 1.012E-22 | 9.975E-23 | 9.768E-23 | 9.564E-23 | 9.364E-23 | 9.218E-23 | 9.169E-23 | 8.978E-23 | 8.791E-23 |
| k 40 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 | 7.543E-21 |
| k 42 | 1.020E-22 | 1.020E-22 | 1.020E-22 | 1.019E-22 | 1.016E-22 | 1.012E-22 | 9.976E-23 | 9.768E-23 | 9.564E-23 | 9.365E-23 | 9.219E-23 | 9.170E-23 | 8.979E-23 | 8.791E-23 |
| ca 41 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 | 5.190E-20 |
| ca 45 | 2.759E-15 | 2.736E-15 | 2.684E-15 | 2.491E-15 | 2.021E-15 | 1.559E-15 | 5.256E-16 | 1.109E-16 | 2.340E-17 | 4.917E-18 | 1.542E-18 | 1.037E-18 | 2.189E-19 | 4.619E-20 |
| sc 45m | 5.243E-20 | 5.198E-20 | 5.099E-20 | 4.733E-20 | 3.841E-20 | 2.961E-20 | 9.986E-21 | 2.107E-21 | 4.446E-22 | 9.342E-23 | 2.930E-23 | 1.971E-23 | 4.159E-24 | 8.776E-25 |
| sc 46 | 2.519E-14 | 2.478E-14 | 2.388E-14 | 2.066E-14 | 1.377E-14 | 8.315E-15 | 1.009E-15 | 4.925E-17 | 2.405E-18 | 1.165E-19 | 1.227E-20 | 5.686E-21 | 2.776E-22 | 1.356E-23 |
| v 49 | 6.721E-18 | 6.693E-18 | 6.630E-18 | 6.391E-18 | 5.766E-18 | 5.072E-18 | 2.969E-18 | 1.379E-18 | 6.407E-19 | 2.970E-19 | 1.678E-19 | 1.380E-19 | 6.410E-20 | 2.978E-20 |
| cr 51 | 2.855E-16 | 2.716E-16 | 2.427E-16 | 1.566E-16 | 4.596E-17 | 9.988E-18 | 1.992E-20 | 1.827E-24 | 1.974E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 | 9.946E-24 |
| mn 54 | 2.775E-15 | 2.763E-15 | 2.735E-15 | 2.631E-15 | 2.360E-15 | 2.061E-15 | 1.170E-15 | 5.199E-16 | 2.311E-16 | 1.025E-16 | 5.602E-17 | 4.556E-17 | 2.025E-17 | 9.003E-18 |
| fe 55 | 6.764E-15 | 6.755E-15 | 6.734E-15 | 6.653E-15 | 6.431E-15 | 6.165E-15 | 5.169E-15 | 4.015E-15 | 3.120E-15 | 2.422E-15 | 2.007E-15 | 1.882E-15 | 1.462E-15 | 1.136E-15 |
| fe 59 | 1.045E-15 | 1.013E-15 | 9.443E-16 | 7.189E-16 | 3.351E-16 | 1.296E-16 | 2.439E-18 | 8.277E-21 | 2.808E-23 | 9.381E-26 | 1.355E-27 | 3.183E-28 | 1.080E-30 | 0.000E+00 |
| fe 60 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 |
| co 56 | 7.521E-23 | 7.387E-23 | 7.094E-23 | 6.063E-23 | 3.906E-23 | 2.259E-23 | 2.291E-24 | 8.657E-26 | 3.271E-27 | 1.225E-28 | 1.066E-29 | 4.629E-30 | 1.749E-31 | 0.000E+00 |
| co 57 | 1.489E-17 | 1.481E-17 | 1.464E-17 | 1.400E-17 | 1.236E-17 | 1.058E-17 | 5.519E-18 | 2.175E-18 | 8.573E-19 | 3.371E-19 | 1.684E-19 | 1.328E-19 | 5.236E-20 | 2.064E-20 |
| co 58 | 3.700E-16 | 3.629E-16 | 3.472E-16 | 2.926E-16 | 1.812E-16 | 9.977E-17 | 8.235E-18 | 2.318E-19 | 6.523E-21 | 1.818E-22 | 1.275E-23 | 5.117E-24 | 1.440E-25 | 4.053E-27 |
| co 60 | 1.699E-13 | 1.698E-13 | 1.695E-13 | 1.684E-13 | 1.655E-13 | 1.619E-13 | 1.477E-13 | 1.295E-13 | 1.135E-13 | 9.953E-14 | 9.024E-14 | 8.727E-14 | 7.653E-14 | 6.710E-14 |
| co 60m | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 | 4.675E-23 |
| ni 59 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 | 1.021E-16 |
| ni 63 | 1.566E-15 | 1.566E-15 | 1.566E-15 | 1.566E-15 | 1.564E-15 | 1.562E-15 | 1.555E-15 | 1.544E-15 | 1.534E-15 | 1.523E-15 | 1.516E-15 | 1.513E-15 | 1.503E-15 | 1.492E-15 |
| zn 65 | 1.547E-17 | 1.539E-17 | 1.519E-17 | 1.445E-17 | 1.258E-17 | 1.057E-17 | 5.123E-18 | 1.816E-18 | 6.437E-19 | 2.275E-19 | 1.050E-19 | 8.064E-20 | 2.858E-20 | 1.013E-20 |
| sn119m | 2.667E-22 | 2.654E-22 | 2.626E-22 | 2.519E-22 | 2.244E-22 | 1.942E-22 | 1.062E-22 | 4.480E-23 | 1.889E-23 | 7.947E-24 | 4.176E-24 | 3.351E-24 | 1.413E-24 | 5.960E-25 |
| sn121 | 5.121E-21 | 5.121E-21 | 5.120E-21 | 5.116E-21 | 5.105E-21 | 5.092E-21 | 5.036E-21 | 4.957E-21 | 4.880E-21 | 4.803E-21 | 4.747E-21 | 4.728E-21 | 4.654E-21 | 4.581E-21 |
| sn121m | 6.599E-21 | 6.599E-21 | 6.597E-21 | 6.592E-21 | 6.578E-21 | 6.561E-21 | 6.489E-21 | 6.388E-21 | 6.288E-21 | 6.189E-21 | 6.117E-21 | 6.092E-21 | 5.997E-21 | 5.903E-21 |
| sn123 | 1.962E-24 | 1.941E-24 | 1.895E-24 | 1.725E-24 | 1.326E-24 | 9.560E-25 | 2.434E-25 | 3.435E-26 | 4.847E-27 | 6.803E-28 | 1.581E-28 | 9.599E-29 | 1.355E-29 | 1.911E-30 |
| sb124 | 2.774E-20 | 2.711E-20 | 2.574E-20 | 2.105E-20 | 1.197E-20 | 5.931E-21 | 3.148E-22 | 4.707E-24 | 7.040E-26 | 1.041E-27 | 4.542E-29 | 1.557E-29 | 2.328E-31 | 0.000E+00 |
| sb125 | 2.635E-21 | 2.631E-21 | 2.623E-21 | 2.592E-21 | 2.506E-21 | 2.403E-21 | 2.016E-21 | 1.569E-21 | 1.220E-21 | 9.487E-22 | 7.868E-22 | 7.380E-22 | 5.741E-22 | 4.466E-22 |
| te121 | 4.026E-22 | 3.992E-22 | 3.916E-22 | 3.636E-22 | 2.956E-22 | 2.285E-22 | 7.789E-23 | 1.668E-23 | 3.573E-24 | 7.621E-25 | 2.418E-25 | 1.633E-25 | 3.028E-31 | 0.000E+00 |
| te121m | 4.010E-22 | 3.977E-22 | 3.902E-22 | 3.624E-22 | 2.947E-22 | 2.278E-22 | 7.763E-23 | 1.663E-23 | 3.562E-24 | 7.598E-25 | 2.410E-25 | 1.627E-25 | 3.486E-26 | 7.468E-27 |
| te123m | 3.052E-17 | 3.017E-17 | 2.939E-17 | 2.655E-17 | 1.996E-17 | 1.400E-17 | 3.178E-18 | 3.806E-19 | 4.557E-20 | 5.424E-21 | 1.115E-21 | 6.494E-22 | 7.776E-23 | 9.310E-24 |
| te125m | 4.735E-17 | 4.622E-17 | 4.378E-17 | 3.544E-17 | 1.961E-17 | 9.389E-18 | 4.323E-19 | 5.645E-21 | 3.629E-22 | 2.331E-22 | 1.927E-22 | 1.807E-22 | 1.406E-22 | 1.094E-22 |
| te127 | 8.397E-20 | 8.291E-20 | 8.060E-20 | 7.209E-20 | 5.279E-20 | 3.581E-20 | 7.076E-21 | 6.946E-22 | 6.819E-23 | 6.651E-24 | 1.180E-24 | 6.529E-25 | 0.000E+00 | 0.000E+00 |
| te127m | 8.573E-20 | 8.465E-20 | 8.226E-20 | 7.359E-20 | 5.389E-20 | 3.656E-20 | 7.224E-21 | 7.092E-22 | 6.962E-23 | 6.791E-24 | 1.204E-24 | 6.666E-25 | 6.544E-26 | 6.424E-27 |
| te129 | 4.137E-24 | 3.970E-24 | 3.618E-24 | 2.522E-24 | 9.177E-25 | 2.607E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 6.558E-24 | 6.293E-24 | 5.735E-24 | 3.997E-24 | 1.455E-24 | 4.132E-25 | 2.146E-27 | 1.152E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 1.468E-19 | 1.434E-19 | 1.361E-19 | 1.109E-19 | 6.262E-20 | 3.073E-20 | 1.568E-21 | 2.216E-23 | 3.131E-25 | 4.374E-27 | 1.830E-28 | 6.181E-29 | 8.736E-31 | 0.000E+00 |
| i126 | 4.638E-24 | 4.166E-24 | 3.273E-24 | 1.281E-24 | 9.263E-26 | 3.520E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 8.374E-20 | 8.061E-20 | 7.399E-20 | 5.302E-20 | 2.086E-20 | 6.527E-21 | 5.080E-23 | 4.867E-26 | 4.663E-29 | 4.383E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 1.313E-21 | 1.168E-21 | 8.976E-22 | 3.222E-22 | 1.829E-23 | 5.145E-25 | 1.690E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.993E-18 | 2.656E-18 | 2.031E-18 | 7.144E-19 | 3.798E-20 | 9.732E-22 | 1.163E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material light elements page 6

0

nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cs134 | 3.804E-17 | 3.797E-17 | 3.781E-17 | 3.721E-17 | 3.557E-17 | 3.363E-17 | 2.661E-17 | 1.903E-17 | 1.360E-17 | 9.719E-18 | 7.569E-18 | 6.949E-18 | 4.969E-18 | 3.553E-18 |
| cs135 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 | 2.210E-24 |
| cs137 | 2.031E-24 | 2.031E-24 | 2.030E-24 | 2.028E-24 | 2.022E-24 | 2.014E-24 | 1.982E-24 | 1.937E-24 | 1.893E-24 | 1.850E-24 | 1.818E-24 | 1.808E-24 | 1.766E-24 | 1.726E-24 |
| ba131 | 4.995E-19 | 4.428E-19 | 3.376E-19 | 1.176E-19 | 6.133E-21 | 1.552E-22 | 3.280E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 1.160E-17 | 1.159E-17 | 1.158E-17 | 1.155E-17 | 1.144E-17 | 1.132E-17 | 1.081E-17 | 1.012E-17 | 9.475E-18 | 8.869E-18 | 8.445E-18 | 8.304E-18 | 7.775E-18 | 7.279E-18 |
| ba137m | 1.924E-24 | 1.923E-24 | 1.923E-24 | 1.921E-24 | 1.915E-24 | 1.907E-24 | 1.877E-24 | 1.834E-24 | 1.792E-24 | 1.752E-24 | 1.722E-24 | 1.712E-24 | 1.673E-24 | 1.635E-24 |
| la137 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 |
| ce139 | 8.258E-20 | 8.176E-20 | 7.992E-20 | 7.318E-20 | 5.718E-20 | 4.206E-20 | 1.164E-20 | 1.853E-21 | 2.948E-22 | 4.667E-23 | 1.186E-23 | 7.426E-24 | 1.182E-24 | 1.880E-25 |
| ce141 | 1.973E-22 | 1.891E-22 | 1.718E-22 | 1.183E-22 | 4.161E-23 | 1.133E-23 | 4.932E-26 | 2.056E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 9.776E-25 | 9.671E-25 | 9.439E-25 | 8.590E-25 | 6.596E-25 | 4.748E-25 | 1.201E-25 | 1.679E-26 | 2.348E-27 | 3.266E-28 | 7.539E-29 | 4.567E-29 | 6.386E-30 | 8.929E-31 |
| tm171 | 2.944E-21 | 2.938E-21 | 2.925E-21 | 2.875E-21 | 2.739E-21 | 2.579E-21 | 2.004E-21 | 1.397E-21 | 9.741E-22 | 6.784E-22 | 5.185E-22 | 4.729E-22 | 3.297E-22 | 2.298E-22 |
| lu172 | 2.547E-21 | 2.547E-21 | 2.543E-21 | 2.508E-21 | 2.389E-21 | 2.245E-21 | 1.717E-21 | 1.185E-21 | 8.183E-22 | 5.644E-22 | 4.283E-22 | 3.897E-22 | 2.691E-22 | 1.858E-22 |
| lu172m | 2.547E-21 | 2.542E-21 | 2.531E-21 | 2.486E-21 | 2.366E-21 | 2.224E-21 | 1.717E-21 | 1.185E-21 | 8.183E-22 | 5.644E-22 | 4.283E-22 | 3.897E-22 | 2.691E-22 | 1.858E-22 |
| lu173 | 8.068E-17 | 8.046E-17 | 7.996E-17 | 7.804E-17 | 7.292E-17 | 6.701E-17 | 4.707E-17 | 2.839E-17 | 1.712E-17 | 1.031E-17 | 7.075E-18 | 6.220E-18 | 3.752E-18 | 2.263E-18 |
| lu174 | 1.130E-16 | 1.129E-16 | 1.127E-16 | 1.119E-16 | 1.095E-16 | 1.064E-16 | 9.328E-17 | 7.609E-17 | 6.179E-17 | 5.011E-17 | 4.288E-17 | 4.065E-17 | 3.297E-17 | 2.675E-17 |
| lu174m | 3.356E-17 | 3.323E-17 | 3.251E-17 | 2.985E-17 | 2.350E-17 | 1.745E-17 | 5.025E-18 | 8.459E-19 | 1.424E-19 | 2.386E-20 | 6.325E-21 | 4.017E-21 | 6.762E-22 | 1.138E-22 |
| lu176 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 | 5.948E-24 |
| lu177 | 1.346E-16 | 1.334E-16 | 1.309E-16 | 1.213E-16 | 9.818E-17 | 7.544E-17 | 2.507E-17 | 5.180E-18 | 1.070E-18 | 2.201E-19 | 6.798E-20 | 4.549E-20 | 9.398E-21 | 1.942E-21 |
| lu177m | 6.029E-16 | 5.977E-16 | 5.862E-16 | 5.435E-16 | 4.398E-16 | 3.379E-16 | 1.123E-16 | 2.320E-17 | 4.793E-18 | 9.861E-19 | 3.045E-19 | 2.037E-19 | 4.209E-20 | 8.697E-21 |
| hf172 | 2.547E-21 | 2.542E-21 | 2.531E-21 | 2.486E-21 | 2.366E-21 | 2.224E-21 | 1.717E-21 | 1.185E-21 | 8.183E-22 | 5.644E-22 | 4.283E-22 | 3.897E-22 | 2.691E-22 | 1.858E-22 |
| hf175 | 1.975E-13 | 1.937E-13 | 1.852E-13 | 1.558E-13 | 9.588E-14 | 5.241E-14 | 4.195E-15 | 1.130E-16 | 3.044E-18 | 8.118E-20 | 5.492E-21 | 2.187E-21 | 5.890E-23 | 1.587E-24 |
| hf177m | 4.739E-16 | 4.698E-16 | 4.607E-16 | 4.272E-16 | 3.457E-16 | 2.656E-16 | 8.826E-17 | 1.824E-17 | 3.768E-18 | 7.751E-19 | 2.393E-19 | 1.601E-19 | 3.309E-20 | 6.836E-21 |
| hf181 | 8.912E-15 | 8.625E-15 | 8.013E-15 | 6.019E-15 | 2.701E-15 | 9.962E-16 | 1.540E-17 | 3.939E-20 | 1.008E-22 | 2.536E-25 | 2.969E-27 | 6.489E-28 | 1.660E-30 | 0.000E+00 |
| hf182 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 | 3.302E-21 |
| ta179 | 4.398E-19 | 4.389E-19 | 4.368E-19 | 4.289E-19 | 4.075E-19 | 3.824E-19 | 2.931E-19 | 2.003E-19 | 1.369E-19 | 9.348E-20 | 7.040E-20 | 6.389E-20 | 4.367E-20 | 2.984E-20 |
| ta182 | 7.686E-14 | 7.594E-14 | 7.390E-14 | 6.649E-14 | 4.945E-14 | 3.421E-14 | 7.331E-15 | 8.082E-16 | 8.911E-17 | 9.768E-18 | 1.891E-18 | 1.080E-18 | 1.220E-19 | 1.639E-20 |
| w181 | 7.206E-17 | 7.124E-17 | 6.943E-17 | 6.282E-17 | 4.747E-17 | 3.349E-17 | 7.790E-18 | 9.659E-19 | 1.198E-19 | 1.477E-20 | 3.117E-21 | 1.831E-21 | 2.271E-22 | 2.816E-23 |
| w185 | 2.059E-14 | 2.022E-14 | 1.939E-14 | 1.650E-14 | 1.050E-14 | 5.979E-15 | 5.682E-16 | 1.956E-17 | 6.735E-19 | 2.297E-20 | 1.866E-21 | 7.910E-22 | 2.723E-23 | 9.376E-25 |
| w188 | 3.644E-16 | 3.572E-16 | 3.416E-16 | 2.871E-16 | 1.764E-16 | 9.626E-17 | 7.645E-18 | 2.036E-19 | 5.422E-21 | 1.430E-22 | 9.590E-24 | 3.847E-24 | 1.014E-25 | 2.700E-27 |
| re183 | 1.426E-20 | 1.399E-20 | 1.338E-20 | 1.125E-20 | 6.924E-21 | 3.784E-21 | 3.030E-22 | 8.160E-24 | 2.198E-25 | 5.862E-27 | 3.966E-28 | 1.579E-28 | 4.253E-30 | 1.146E-31 |
| re184 | 2.227E-18 | 2.202E-18 | 2.148E-18 | 1.956E-18 | 1.540E-18 | 1.174E-18 | 4.068E-19 | 9.133E-20 | 2.044E-20 | 4.555E-21 | 1.488E-21 | 1.016E-21 | 2.282E-22 | 5.106E-23 |
| re184m | 2.128E-18 | 2.110E-18 | 2.072E-18 | 1.928E-18 | 1.577E-18 | 1.228E-18 | 4.315E-19 | 9.658E-20 | 2.161E-20 | 4.817E-21 | 1.579E-21 | 1.078E-21 | 2.412E-22 | 5.399E-23 |
| re186 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.901E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 |
| re186m | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 | 2.900E-20 |
| re187 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 |
| re188 | 3.681E-16 | 3.609E-16 | 3.451E-16 | 2.900E-16 | 1.783E-16 | 9.725E-17 | 7.724E-18 | 2.057E-19 | 5.478E-21 | 1.444E-22 | 9.688E-24 | 3.846E-24 | 0.000E+00 | 0.000E+00 |
| os185 | 2.830E-17 | 2.788E-17 | 2.697E-17 | 2.369E-17 | 1.648E-17 | 1.049E-17 | 1.587E-18 | 1.064E-19 | 7.127E-21 | 4.740E-22 | 6.324E-23 | 3.176E-23 | 2.128E-24 | 1.420E-25 |
| os191 | 2.920E-20 | 2.669E-20 | 2.180E-20 | 9.915E-21 | 1.093E-21 | 7.015E-23 | 7.268E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| os194 | 2.289E-20 | 2.287E-20 | 2.284E-20 | 2.271E-20 | 2.236E-20 | 2.194E-20 | 2.024E-20 | 1.803E-20 | 1.606E-20 | 1.431E-20 | 1.313E-20 | 1.275E-20 | 1.136E-20 | 1.012E-20 |
| ir190 | 8.153E-24 | 7.248E-24 | 5.562E-24 | 1.986E-24 | 1.111E-25 | 3.069E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir191m | 2.920E-20 | 2.669E-20 | 2.180E-20 | 9.915E-21 | 1.093E-21 | 7.016E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir192 | 4.065E-14 | 3.989E-14 | 3.824E-14 | 3.245E-14 | 2.048E-14 | 1.155E-14 | 1.054E-15 | 3.425E-17 | 1.113E-18 | 3.580E-20 | 2.785E-21 | 1.163E-21 | 3.779E-23 | 1.228E-24 |
| ir193m | 7.913E-21 | 6.937E-21 | 5.159E-21 | 1.630E-21 | 6.478E-23 | 1.168E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir194 | 2.289E-20 | 2.288E-20 | 2.285E-20 | 2.272E-20 | 2.237E-20 | 2.194E-20 | 2.024E-20 | 1.804E-20 | 1.607E-20 | 1.431E-20 | 1.313E-20 | 1.275E-20 | 1.136E-20 | 1.012E-20 |
| pt193 | 1.115E-14 | 1.115E-14 | 1.114E-14 | 1.114E-14 | 1.112E-14 | 1.109E-14 | 1.098E-14 | 1.083E-14 | 1.068E-14 | 1.054E-14 | 1.043E-14 | 1.039E-14 | 1.025E-14 | 1.011E-14 |
| au194 | 1.270E-22 | 1.270E-22 | 1.270E-22 | 1.271E-22 | 1.270E-22 | 1.270E-22 | 1.268E-22 | 1.266E-22 | 1.264E-22 | 1.262E-22 | 1.261E-22 | 1.260E-22 | 1.258E-22 | 1.256E-22 |
| au195 | 1.404E-17 | 1.394E-17 | 1.370E-17 | 1.284E-17 | 1.070E-17 | 8.524E-18 | 3.297E-18 | 8.467E-19 | 2.174E-19 | 5.563E-20 | 2.020E-20 | 1.428E-20 | 3.668E-21 | 9.419E-22 |
| hg194 | 1.270E-22 | 1.270E-22 | 1.270E-22 | 1.270E-22 | 1.270E-22 | 1.270E-22 | 1.268E-22 | 1.266E-22 | 1.264E-22 | 1.262E-22 | 1.261E-22 | 1.260E-22 | 1.258E-22 | 1.256E-22 |
| hg203 | 1.303E-15 | 1.265E-15 | 1.183E-15 | 9.117E-16 | 4.398E-16 | 1.775E-16 | 3.997E-18 | 1.752E-20 | 7.679E-23 | 3.317E-25 | 5.799E-27 | 1.454E-27 | 6.373E-30 | 0.000E+00 |
| tl202 | 3.088E-24 | 2.759E-24 | 2.142E-24 | 7.995E-25 | 5.066E-26 | 1.651E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.804E-29 | 0.000E+00 | 0.000E+00 |
| tl204 | 3.743E-16 | 3.739E-16 | 3.731E-16 | 3.698E-16 | 3.608E-16 | 3.499E-16 | 3.079E-16 | 2.564E-16 | 2.135E-16 | 1.777E-16 | 1.550E-16 | 1.480E-16 | 1.232E-16 | 1.026E-16 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ca | 2.759E-15 | 2.736E-15 | 2.684E-15 | 2.491E-15 | 2.021E-15 | 1.559E-15 | 5.256E-16 | 1.110E-16 | 2.345E-17 | 4.969E-18 | 1.594E-18 | 1.089E-18 | 2.708E-19 | 9.809E-20 |
| sc | 2.519E-14 | 2.478E-14 | 2.388E-14 | 2.066E-14 | 1.377E-14 | 8.315E-15 | 1.009E-15 | 4.925E-17 | 2.405E-18 | 1.165E-19 | 1.230E-20 | 5.706E-21 | 2.818E-22 | 1.443E-23 |
| v | 6.721E-18 | 6.693E-18 | 6.630E-18 | 6.391E-18 | 5.766E-18 | 5.072E-18 | 1.969E-18 | 1.379E-18 | 6.407E-19 | 2.970E-19 | 1.678E-19 | 1.380E-19 | 6.410E-20 | 2.978E-20 |
| cr | 2.855E-16 | 2.716E-16 | 2.427E-16 | 1.566E-16 | 4.596E-17 | 9.988E-18 | 1.692E-20 | 1.827E-24 | 1.974E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 2.775E-15 | 2.763E-15 | 2.735E-15 | 2.631E-15 | 2.360E-15 | 2.061E-15 | 1.170E-15 | 5.199E-16 | 2.311E-16 | 1.025E-16 | 5.602E-17 | 4.556E-17 | 2.025E-17 | 9.003E-18 |
| fe | 7.809E-15 | 7.768E-15 | 7.678E-15 | 7.372E-15 | 6.766E-15 | 6.295E-15 | 5.171E-15 | 4.015E-15 | 3.120E-15 | 2.422E-15 | 2.007E-15 | 1.882E-15 | 1.462E-15 | 1.136E-15 |
| co | 1.703E-13 | 1.701E-13 | 1.698E-13 | 1.687E-13 | 1.657E-13 | 1.620E-13 | 1.477E-13 | 1.295E-13 | 1.135E-13 | 9.953E-14 | 9.024E-14 | 8.727E-14 | 7.653E-14 | 6.710E-14 |
| ni | 1.668E-15 | 1.668E-15 | 1.668E-15 | 1.668E-15 | 1.666E-15 | 1.665E-15 | 1.657E-15 | 1.646E-15 | 1.636E-15 | 1.625E-15 | 1.618E-15 | 1.615E-15 | 1.605E-15 | 1.594E-15 |
| zn | 1.547E-17 | 1.539E-17 | 1.519E-17 | 1.445E-17 | 1.258E-17 | 1.057E-17 | 5.123E-18 | 1.816E-18 | 6.437E-19 | 2.275E-19 | 1.050E-19 | 8.064E-20 | 2.858E-20 | 1.013E-20 |
| sn | 1.199E-20 | 1.199E-20 | 1.198E-20 | 1.196E-20 | 1.191E-20 | 1.185E-20 | 1.163E-20 | 1.139E-20 | 1.119E-20 | 1.100E-20 | 1.087E-20 | 1.082E-20 | 1.065E-20 | 1.048E-20 |
| sb | 3.038E-20 | 2.974E-20 | 2.837E-20 | 2.364E-20 | 1.448E-20 | 8.334E-21 | 2.331E-21 | 1.573E-21 | 1.220E-21 | 9.487E-22 | 7.868E-22 | 7.380E-22 | 5.741E-22 | 4.466E-22 |
| te | 7.805E-17 | 7.656E-17 | 7.333E-17 | 6.213E-17 | 3.968E-17 | 2.346E-17 | 3.625E-18 | 3.876E-19 | 4.607E-20 | 5.672E-21 | 1.311E-21 | 8.318E-22 | 2.184E-22 | 1.187E-22 |
| i | 1.468E-19 | 1.434E-19 | 1.361E-19 | 1.109E-19 | 6.262E-20 | 3.073E-20 | 1.568E-21 | 2.216E-23 | 3.143E-25 | 5.560E-27 | 1.369E-27 | 1.248E-27 | 1.187E-27 | 1.186E-27 |
| xe | 8.505E-20 | 8.178E-20 | 7.489E-20 | 5.334E-20 | 2.087E-20 | 6.528E-21 | 5.080E-23 | 4.867E-26 | 4.663E-29 | 4.383E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 4.103E-17 | 4.063E-17 | 3.985E-17 | 3.793E-17 | 3.561E-17 | 3.363E-17 | 2.661E-17 | 1.903E-17 | 1.360E-17 | 9.719E-18 | 7.569E-18 | 6.949E-18 | 4.969E-18 | 3.553E-18 |
| ba | 1.209E-17 | 1.203E-17 | 1.192E-17 | 1.166E-17 | 1.145E-17 | 1.132E-17 | 1.081E-17 | 1.012E-17 | 9.475E-18 | 8.869E-18 | 8.445E-18 | 8.304E-18 | 7.775E-18 | 7.279E-18 |
| la | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 | 1.112E-17 |
| ce | 8.278E-20 | 8.194E-20 | 8.010E-20 | 7.330E-20 | 5.722E-20 | 4.207E-20 | 1.164E-20 | 1.853E-21 | 2.948E-22 | 4.667E-23 | 1.186E-23 | 7.426E-24 | 1.182E-24 | 2.880E-25 |
| tm | 2.945E-21 | 2.939E-21 | 2.926E-21 | 2.876E-21 | 2.740E-21 | 2.579E-21 | 2.004E-21 | 1.397E-21 | 9.741E-22 | 6.784E-22 | 5.185E-22 | 4.729E-22 | 3.297E-22 | 2.298E-22 |
| lu | 9.647E-16 | 9.577E-16 | 9.422E-16 | 8.846E-16 | 7.439E-16 | 6.042E-16 | 2.827E-16 | 1.337E-16 | 8.492E-17 | 6.165E-17 | 5.033E-17 | 4.712E-17 | 3.678E-17 | 2.902E-17 |
| hf | 2.069E-13 | 2.028E-13 | 1.937E-13 | 1.622E-13 | 9.893E-14 | 5.367E-14 | 4.299E-15 | 1.313E-16 | 6.816E-18 | 8.601E-19 | 2.486E-19 | 1.660E-19 | 3.672E-20 | 1.033E-20 |
| ta | 7.686E-14 | 7.594E-14 | 7.390E-14 | 6.649E-14 | 4.945E-14 | 3.421E-14 | 7.331E-15 | 8.084E-16 | 8.925E-17 | 9.862E-18 | 1.962E-18 | 1.144E-18 | 1.657E-19 | 4.623E-20 |
| w | 2.103E-14 | 2.065E-14 | 1.981E-14 | 1.685E-14 | 1.072E-14 | 6.109E-15 | 5.836E-16 | 2.073E-17 | 7.987E-19 | 3.788E-20 | 4.993E-21 | 2.626E-21 | 2.544E-22 | 2.910E-23 |
| re | 3.725E-16 | 3.653E-16 | 3.494E-16 | 2.940E-16 | 1.814E-16 | 9.972E-17 | 8.621E-18 | 4.518E-19 | 1.058E-19 | 6.776E-20 | 6.132E-20 | 6.034E-20 | 5.871E-20 | 5.835E-20 |
| os | 2.835E-17 | 2.793E-17 | 2.701E-17 | 2.378E-17 | 1.650E-17 | 1.051E-17 | 1.608E-18 | 1.244E-19 | 2.319E-20 | 1.319E-20 | 1.279E-20 | 1.136E-20 | 1.136E-20 | 1.012E-20 |
| ir | 4.065E-14 | 3.989E-14 | 3.824E-14 | 3.245E-14 | 2.048E-14 | 1.155E-14 | 1.054E-15 | 3.426E-17 | 1.129E-18 | 5.012E-20 | 1.592E-20 | 1.392E-20 | 1.140E-20 | 1.012E-20 |
| pt | 1.115E-14 | 1.115E-14 | 1.114E-14 | 1.114E-14 | 1.112E-14 | 1.109E-14 | 1.098E-14 | 1.083E-14 | 1.068E-14 | 1.054E-14 | 1.043E-14 | 1.039E-14 | 1.025E-14 | 1.011E-14 |
| au | 1.404E-17 | 1.394E-17 | 1.370E-17 | 1.284E-17 | 1.070E-17 | 8.524E-18 | 3.297E-18 | 8.468E-19 | 2.176E-19 | 5.575E-20 | 2.032E-20 | 1.441E-20 | 3.794E-21 | 1.068E-21 |
| hg | 1.303E-15 | 1.265E-15 | 1.183E-15 | 9.117E-16 | 4.398E-16 | 1.775E-16 | 3.997E-18 | 1.765E-20 | 2.032E-22 | 1.266E-22 | 1.261E-22 | 1.260E-22 | 1.258E-22 | 1.256E-22 |
| tl | 3.743E-16 | 3.739E-16 | 3.731E-16 | 3.698E-16 | 3.608E-16 | 3.499E-16 | 3.079E-16 | 2.564E-16 | 2.135E-16 | 1.777E-16 | 1.550E-16 | 1.480E-16 | 1.232E-16 | 1.026E-16 |
| totals | 8.159E-03 | 8.157E-03 | 8.151E-03 | 8.129E-03 | 8.068E-03 | 7.993E-03 | 7.686E-03 | 7.267E-03 | 6.871E-03 | 6.496E-03 | 6.230E-03 | 6.142E-03 | 5.808E-03 | 5.492E-03 |



nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 2.743E-07 | 2.743E-07 | 2.741E-07 | 2.733E-07 | 2.713E-07 | 2.687E-07 | 2.584E-07 | 2.443E-07 | 2.309E-07 | 2.182E-07 | 2.093E-07 | 2.063E-07 | 1.950E-07 | 1.844E-07 |
| be 10 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 |
| c 14 | 7.376E-09 | 7.376E-09 | 7.373E-09 | 7.376E-09 | 7.376E-09 | 7.375E-09 | 7.375E-09 | 7.374E-09 | 7.373E-09 | 7.373E-09 | 7.372E-09 | 7.372E-09 | 7.371E-09 | 7.370E-09 |
| na 22 | 1.169E-22 | 1.167E-22 | 1.164E-22 | 1.149E-22 | 1.108E-22 | 1.060E-22 | 8.803E-23 | 6.746E-23 | 5.170E-23 | 3.959E-23 | 3.247E-23 | 3.034E-23 | 2.325E-23 | 1.782E-23 |
| al 26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 |
| si 32 | 2.240E-24 | 2.240E-24 | 2.240E-24 | 2.240E-24 | 2.238E-24 | 2.237E-24 | 2.229E-24 | 2.219E-24 | 2.209E-24 | 2.199E-24 | 2.192E-24 | 2.189E-24 | 2.180E-24 | 2.170E-24 |
| p 32 | 3.173E-22 | 2.900E-22 | 2.375E-22 | 1.145E-22 | 3.121E-23 | 2.316E-23 | 2.265E-23 | 2.254E-23 | 2.244E-23 | 2.234E-23 | 2.226E-23 | 2.224E-23 | 2.214E-23 | 2.204E-23 |
| p 33 | 2.836E-21 | 2.685E-21 | 2.374E-21 | 1.471E-21 | 3.850E-22 | 7.257E-23 | 6.783E-26 | 3.128E-30 | 1.443E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 6.576E-19 | 6.473E-19 | 6.247E-19 | 5.438E-19 | 3.689E-19 | 2.275E-19 | 3.019E-20 | 1.676E-21 | 9.304E-23 | 5.124E-24 | 5.942E-25 | 2.845E-25 | 1.579E-26 | 8.767E-28 |
| cl 36 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 |
| ar 37 | 3.823E-21 | 3.675E-21 | 3.362E-21 | 2.378E-21 | 9.021E-22 | 2.699E-22 | 1.740E-24 | 1.273E-27 | 9.310E-31 | 6.677E-34 | 3.075E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 8.049E-20 | 8.048E-20 | 8.048E-20 | 8.047E-20 | 8.044E-20 | 8.041E-20 | 8.026E-20 | 8.006E-20 | 7.985E-20 | 7.965E-20 | 7.949E-20 | 7.944E-20 | 7.924E-20 | 7.903E-20 |
| ar 42 | 1.407E-25 | 1.406E-25 | 1.406E-25 | 1.405E-25 | 1.401E-25 | 1.396E-25 | 1.375E-25 | 1.347E-25 | 1.319E-25 | 1.291E-25 | 1.271E-25 | 1.264E-25 | 1.238E-25 | 1.212E-25 |
| k 40 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 |
| k 42 | 1.034E-24 | 1.034E-24 | 1.033E-24 | 1.032E-24 | 1.029E-24 | 1.026E-24 | 1.011E-24 | 9.896E-25 | 9.690E-25 | 9.488E-25 | 9.340E-25 | 9.290E-25 | 9.097E-25 | 8.907E-25 |
| ca 41 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 | 9.574E-25 |
| ca 45 | 1.257E-18 | 1.246E-18 | 1.223E-18 | 1.135E-18 | 9.209E-19 | 7.101E-19 | 2.395E-19 | 5.053E-20 | 1.066E-20 | 2.240E-21 | 7.026E-22 | 4.727E-22 | 9.973E-23 | 2.104E-23 |
| sc 45m | 3.829E-24 | 3.796E-24 | 3.724E-24 | 3.456E-24 | 2.805E-24 | 2.163E-24 | 7.293E-25 | 1.539E-25 | 3.247E-26 | 6.822E-27 | 2.140E-27 | 1.440E-27 | 3.037E-28 | 6.409E-29 |
| sc 46 | 3.168E-16 | 3.116E-16 | 3.002E-16 | 2.598E-16 | 1.732E-16 | 1.046E-16 | 1.268E-17 | 6.193E-19 | 3.024E-20 | 1.464E-21 | 1.543E-22 | 7.150E-23 | 3.491E-24 | 1.705E-25 |
| v 48 | 2.918E-27 | 2.675E-27 | 2.201E-27 | 1.030E-27 | 1.228E-28 | 8.702E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| v 49 | 1.773E-22 | 1.766E-22 | 1.749E-22 | 1.686E-22 | 1.521E-22 | 1.338E-22 | 7.834E-23 | 3.639E-23 | 1.691E-23 | 7.837E-24 | 4.426E-24 | 3.641E-24 | 1.691E-24 | 7.858E-25 |
| cr 51 | 6.209E-20 | 5.906E-20 | 5.277E-20 | 3.405E-20 | 9.993E-21 | 2.172E-21 | 3.678E-24 | 3.973E-28 | 4.291E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 | 3.176E-28 |
| mn 54 | 1.382E-17 | 1.376E-17 | 1.362E-17 | 1.310E-17 | 1.175E-17 | 1.026E-17 | 5.824E-18 | 2.589E-18 | 1.151E-18 | 5.104E-19 | 2.790E-19 | 2.269E-19 | 1.009E-19 | 4.483E-20 |
| fe 55 | 2.342E-19 | 2.339E-19 | 2.332E-19 | 2.304E-19 | 2.227E-19 | 2.135E-19 | 1.790E-19 | 1.391E-19 | 1.080E-19 | 8.387E-20 | 6.949E-20 | 6.516E-20 | 5.062E-20 | 3.933E-20 |
| fe 59 | 8.089E-18 | 7.841E-18 | 7.310E-18 | 5.566E-18 | 2.594E-18 | 1.003E-18 | 1.888E-20 | 6.407E-23 | 2.174E-25 | 7.263E-28 | 1.049E-29 | 2.464E-30 | 8.361E-33 | 0.000E+00 |
| fe 60 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 | 1.391E-26 |
| co 56 | 1.677E-24 | 1.647E-24 | 1.582E-24 | 1.352E-24 | 8.708E-25 | 5.037E-25 | 5.108E-26 | 1.930E-27 | 7.293E-29 | 2.731E-30 | 2.378E-31 | 1.032E-31 | 3.899E-33 | 0.000E+00 |
| co 57 | 1.269E-20 | 1.262E-20 | 1.248E-20 | 1.193E-20 | 1.053E-20 | 9.015E-21 | 4.704E-21 | 1.854E-21 | 7.308E-22 | 2.873E-22 | 1.436E-22 | 1.132E-22 | 4.463E-23 | 1.759E-23 |
| co 58 | 2.213E-18 | 2.170E-18 | 2.076E-18 | 1.750E-18 | 1.083E-18 | 5.966E-19 | 4.925E-20 | 1.386E-21 | 3.901E-23 | 1.087E-24 | 7.599E-26 | 3.060E-26 | 8.611E-28 | 2.423E-29 |
| co 60 | 2.619E-15 | 2.617E-15 | 2.613E-15 | 2.596E-15 | 2.551E-15 | 2.495E-15 | 2.277E-15 | 1.996E-15 | 1.750E-15 | 1.534E-15 | 1.391E-15 | 1.345E-15 | 1.180E-15 | 1.034E-15 |
| co 60m | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 | 1.747E-26 |
| ni 59 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 | 4.184E-21 |
| ni 63 | 1.618E-19 | 1.618E-19 | 1.618E-19 | 1.617E-19 | 1.616E-19 | 1.614E-19 | 1.606E-19 | 1.595E-19 | 1.584E-19 | 1.573E-19 | 1.565E-19 | 1.563E-19 | 1.552E-19 | 1.542E-19 |
| zn 65 | 5.346E-20 | 5.316E-20 | 5.248E-20 | 4.994E-20 | 4.345E-20 | 3.653E-20 | 1.770E-20 | 6.274E-21 | 2.224E-21 | 7.860E-22 | 3.629E-22 | 2.786E-22 | 9.875E-23 | 3.500E-23 |
| sn119m | 1.384E-25 | 1.378E-25 | 1.363E-25 | 1.308E-25 | 1.165E-25 | 1.008E-25 | 5.516E-26 | 2.326E-26 | 9.808E-27 | 4.126E-27 | 2.168E-27 | 1.740E-27 | 7.338E-28 | 3.094E-28 |
| sn121 | 3.516E-24 | 3.516E-24 | 3.515E-24 | 3.512E-24 | 3.505E-24 | 3.496E-24 | 3.457E-24 | 3.403E-24 | 3.350E-24 | 3.297E-24 | 3.259E-24 | 3.246E-24 | 3.195E-24 | 3.145E-24 |
| sn121m | 1.486E-24 | 1.486E-24 | 1.486E-24 | 1.484E-24 | 1.481E-24 | 1.477E-24 | 1.461E-24 | 1.438E-24 | 1.416E-24 | 1.394E-24 | 1.377E-24 | 1.372E-24 | 1.350E-24 | 1.329E-24 |
| sn123 | 6.164E-27 | 6.098E-27 | 5.953E-27 | 5.420E-27 | 4.167E-27 | 3.004E-27 | 7.648E-28 | 1.079E-28 | 1.523E-29 | 2.137E-30 | 4.967E-31 | 3.016E-31 | 4.256E-32 | 6.006E-33 |
| sb124 | 3.676E-22 | 3.592E-22 | 3.411E-22 | 2.788E-22 | 1.586E-22 | 7.857E-23 | 4.170E-24 | 9.327E-28 | 1.379E-29 | 6.017E-31 | 2.062E-31 | 1.384E-31 | 3.084E-33 | 0.000E+00 |
| sb125 | 8.333E-24 | 8.322E-24 | 8.296E-24 | 8.197E-24 | 7.925E-24 | 7.600E-24 | 6.377E-24 | 4.961E-24 | 3.859E-24 | 3.000E-24 | 2.488E-24 | 2.334E-24 | 1.816E-24 | 1.413E-24 |
| te121 | 1.403E-24 | 1.391E-24 | 1.365E-24 | 1.268E-24 | 1.030E-24 | 7.965E-25 | 2.715E-25 | 5.815E-26 | 1.246E-26 | 2.657E-27 | 8.429E-28 | 5.691E-28 | 1.056E-33 | 0.000E+00 |
| te121m | 7.026E-25 | 6.967E-25 | 6.836E-25 | 6.349E-25 | 5.163E-25 | 3.991E-25 | 1.360E-25 | 2.913E-26 | 6.241E-27 | 1.331E-27 | 4.223E-28 | 2.851E-28 | 6.108E-29 | 1.308E-29 |
| te123m | 4.502E-20 | 4.450E-20 | 4.335E-20 | 3.915E-20 | 2.945E-20 | 2.065E-20 | 4.688E-21 | 5.613E-22 | 6.721E-23 | 8.000E-24 | 1.645E-24 | 9.579E-25 | 1.147E-25 | 1.373E-26 |
| te125m | 4.083E-20 | 3.986E-20 | 3.775E-20 | 3.056E-20 | 1.691E-20 | 8.096E-21 | 3.727E-22 | 4.867E-24 | 3.129E-25 | 2.010E-25 | 1.661E-25 | 1.558E-25 | 1.212E-25 | 9.430E-26 |
| te127 | 1.142E-22 | 1.128E-22 | 1.096E-22 | 9.805E-23 | 7.180E-23 | 4.871E-23 | 9.625E-24 | 9.448E-25 | 9.275E-26 | 9.047E-27 | 1.604E-27 | 8.881E-28 | 0.000E+00 | 0.000E+00 |
| te127m | 4.685E-23 | 4.625E-23 | 4.495E-23 | 4.021E-23 | 2.945E-23 | 1.998E-23 | 3.948E-24 | 3.875E-25 | 3.804E-26 | 3.711E-27 | 6.580E-28 | 3.642E-28 | 3.576E-29 | 3.510E-30 |
| te129 | 1.493E-26 | 1.432E-26 | 1.305E-26 | 9.098E-27 | 3.311E-27 | 9.406E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 1.201E-26 | 1.152E-26 | 1.050E-26 | 7.320E-27 | 2.664E-27 | 7.568E-28 | 3.930E-30 | 2.110E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 5.261E-23 | 5.140E-23 | 4.877E-23 | 3.976E-23 | 2.244E-23 | 1.101E-23 | 5.619E-25 | 7.941E-27 | 1.122E-28 | 1.568E-30 | 6.558E-32 | 2.216E-32 | 3.131E-34 | 0.000E+00 |
| i126 | 1.638E-26 | 1.472E-26 | 1.156E-26 | 4.525E-27 | 3.272E-28 | 1.244E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 1.552E-22 | 1.494E-22 | 1.371E-22 | 9.827E-23 | 3.865E-23 | 1.210E-23 | 9.415E-26 | 9.021E-29 | 8.643E-32 | 8.124E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |



nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 1.268E-24 | 1.128E-24 | 8.669E-25 | 3.112E-25 | 1.767E-26 | 4.969E-28 | 1.633E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 5.258E-22 | 4.667E-22 | 3.569E-22 | 1.255E-22 | 6.672E-24 | 1.710E-25 | 2.043E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.756E-28 | 1.418E-28 | 8.761E-29 | 1.348E-29 | 7.132E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs134 | 3.875E-19 | 3.868E-19 | 3.852E-19 | 3.791E-19 | 3.624E-19 | 3.426E-19 | 2.710E-19 | 1.938E-19 | 1.386E-19 | 9.900E-20 | 7.711E-20 | 7.079E-20 | 5.062E-20 | 3.619E-20 |
| cs135 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 | 9.919E-28 |
| cs136 | 6.268E-27 | 5.641E-27 | 4.451E-27 | 1.771E-27 | 1.340E-28 | 5.394E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.161E-27 | 2.160E-27 | 2.160E-27 | 2.157E-27 | 2.151E-27 | 2.143E-27 | 2.108E-27 | 2.060E-27 | 2.013E-27 | 1.967E-27 | 1.934E-27 | 1.923E-27 | 1.879E-27 | 1.836E-27 |
| ba131 | 1.585E-21 | 1.405E-21 | 1.071E-21 | 3.731E-22 | 1.946E-23 | 4.925E-25 | 1.041E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 3.142E-20 | 3.141E-20 | 3.139E-20 | 3.129E-20 | 3.101E-20 | 3.067E-20 | 2.929E-20 | 2.743E-20 | 2.568E-20 | 2.404E-20 | 2.289E-20 | 2.250E-20 | 2.107E-20 | 1.973E-20 |
| ba137m | 7.542E-27 | 7.541E-27 | 7.539E-27 | 7.530E-27 | 7.507E-27 | 7.478E-27 | 7.359E-27 | 7.191E-27 | 7.028E-27 | 6.867E-27 | 6.750E-27 | 6.711E-27 | 6.558E-27 | 6.409E-27 |
| la137 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 |
| la138 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 | 4.637E-27 |
| ce139 | 9.582E-23 | 9.486E-23 | 9.274E-23 | 8.492E-23 | 6.635E-23 | 4.880E-23 | 1.351E-23 | 2.150E-24 | 3.421E-25 | 5.416E-26 | 1.376E-26 | 8.617E-27 | 1.371E-27 | 2.182E-28 |
| ce141 | 2.887E-25 | 2.767E-25 | 2.514E-25 | 1.731E-25 | 6.088E-26 | 1.658E-26 | 7.215E-29 | 3.008E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 1.924E-27 | 1.903E-27 | 1.858E-27 | 1.691E-27 | 1.298E-27 | 9.344E-28 | 2.364E-28 | 3.305E-29 | 4.622E-30 | 6.428E-31 | 1.484E-31 | 8.988E-32 | 1.257E-32 | 1.757E-33 |
| tm171 | 4.546E-25 | 4.537E-25 | 4.517E-25 | 4.439E-25 | 4.229E-25 | 3.982E-25 | 3.095E-25 | 2.157E-25 | 1.504E-25 | 1.047E-25 | 8.005E-26 | 7.302E-26 | 5.091E-26 | 3.549E-26 |
| lu172 | 3.109E-23 | 3.108E-23 | 3.103E-23 | 3.061E-23 | 2.915E-23 | 2.740E-23 | 2.095E-23 | 1.446E-23 | 9.986E-24 | 6.887E-24 | 5.226E-24 | 4.756E-24 | 3.283E-24 | 2.267E-24 |
| lu172m | 5.352E-25 | 5.341E-25 | 5.317E-25 | 5.223E-25 | 4.970E-25 | 4.672E-25 | 3.606E-25 | 2.490E-25 | 1.719E-25 | 1.186E-25 | 8.998E-26 | 8.187E-26 | 5.653E-26 | 3.903E-26 |
| lu173 | 1.103E-19 | 1.100E-19 | 1.093E-19 | 1.066E-19 | 9.966E-20 | 9.159E-20 | 6.433E-20 | 3.880E-20 | 2.340E-20 | 1.412E-20 | 9.670E-21 | 8.501E-21 | 5.128E-21 | 3.093E-21 |
| lu174 | 1.058E-19 | 1.057E-19 | 1.056E-19 | 1.048E-19 | 1.026E-19 | 9.970E-20 | 8.738E-20 | 7.128E-20 | 5.789E-20 | 4.694E-20 | 4.017E-20 | 3.808E-20 | 3.089E-20 | 2.506E-20 |
| lu174m | 3.324E-20 | 3.292E-20 | 3.220E-20 | 2.957E-20 | 2.328E-20 | 1.728E-20 | 4.978E-21 | 8.380E-22 | 1.411E-22 | 2.364E-23 | 6.265E-24 | 3.979E-24 | 6.699E-25 | 1.128E-25 |
| lu176 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 | 2.723E-26 |
| lu177 | 1.447E-19 | 1.434E-19 | 1.407E-19 | 1.304E-19 | 1.055E-19 | 8.109E-20 | 2.695E-20 | 5.567E-21 | 1.150E-21 | 2.366E-22 | 7.307E-23 | 4.889E-23 | 1.010E-23 | 2.087E-24 |
| lu177m | 8.850E-19 | 8.774E-19 | 8.605E-19 | 7.978E-19 | 6.456E-19 | 4.960E-19 | 1.648E-19 | 3.406E-20 | 7.036E-21 | 1.448E-21 | 4.470E-22 | 2.991E-22 | 6.179E-23 | 1.277E-23 |
| hf172 | 2.784E-24 | 2.778E-24 | 2.765E-24 | 2.717E-24 | 2.585E-24 | 2.430E-24 | 1.876E-24 | 1.295E-24 | 8.942E-25 | 6.167E-25 | 4.680E-25 | 4.258E-25 | 2.940E-25 | 2.030E-25 |
| hf174 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 | 3.452E-29 |
| hf175 | 4.652E-16 | 4.561E-16 | 4.362E-16 | 3.668E-16 | 2.258E-16 | 1.234E-16 | 9.880E-18 | 2.661E-19 | 7.168E-21 | 1.912E-22 | 1.293E-23 | 5.150E-24 | 1.387E-25 | 3.736E-27 |
| hf177m | 4.267E-18 | 4.230E-18 | 4.149E-18 | 3.846E-18 | 3.113E-18 | 2.391E-18 | 7.947E-19 | 1.642E-19 | 3.392E-20 | 6.979E-21 | 2.155E-21 | 1.442E-21 | 2.979E-22 | 6.155E-23 |
| hf181 | 3.857E-17 | 3.733E-17 | 3.468E-17 | 2.605E-17 | 1.169E-17 | 4.311E-18 | 6.664E-20 | 1.705E-22 | 4.362E-25 | 1.098E-27 | 1.285E-29 | 2.808E-30 | 7.184E-33 | 0.000E+00 |
| hf182 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 | 5.935E-24 |
| ta179 | 8.855E-23 | 8.837E-23 | 8.795E-23 | 8.636E-23 | 8.206E-23 | 7.700E-23 | 5.902E-23 | 4.034E-23 | 2.757E-23 | 1.882E-23 | 1.417E-23 | 1.286E-23 | 8.792E-24 | 6.009E-24 |
| ta182 | 6.905E-16 | 6.822E-16 | 6.640E-16 | 5.973E-16 | 4.443E-16 | 3.073E-16 | 6.586E-17 | 7.261E-18 | 8.005E-19 | 8.776E-20 | 1.699E-20 | 9.702E-21 | 1.096E-21 | 1.472E-22 |
| ta183 | 4.446E-29 | 3.388E-29 | 1.838E-29 | 1.703E-30 | 2.183E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| w181 | 2.215E-20 | 2.190E-20 | 2.134E-20 | 1.932E-20 | 1.459E-20 | 1.029E-20 | 2.394E-21 | 2.969E-22 | 3.681E-23 | 4.539E-24 | 9.579E-25 | 5.628E-25 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ir192 | 2.490E-16 | 2.444E-16 | 2.343E-16 | 1.988E-16 | 1.255E-16 | 7.077E-17 | 6.458E-18 | 2.098E-19 | 6.815E-21 | 2.193E-22 | 1.706E-23 | 7.125E-24 | 2.315E-25 | 7.519E-27 |
| ir193m | 3.394E-24 | 2.976E-24 | 2.213E-24 | 6.992E-25 | 2.778E-26 | 5.011E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 10

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nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ir194 | 1.213E-22 | 1.212E-22 | 1.211E-22 | 1.204E-22 | 1.185E-22 | 1.163E-22 | 1.073E-22 | 9.557E-23 | 8.514E-23 | 7.584E-23 | 6.958E-23 | 6.757E-23 | 6.020E-23 | 5.364E-23 |
| pt193 | 5.856E-19 | 5.855E-19 | 5.854E-19 | 5.851E-19 | 5.840E-19 | 5.826E-19 | 5.770E-19 | 5.691E-19 | 5.612E-19 | 5.535E-19 | 5.478E-19 | 5.459E-19 | 5.384E-19 | 5.310E-19 |
| au194 | 8.255E-25 | 8.255E-25 | 8.255E-25 | 8.258E-25 | 8.258E-25 | 8.250E-25 | 8.241E-25 | 8.228E-25 | 8.215E-25 | 8.203E-25 | 8.193E-25 | 8.190E-25 | 8.177E-25 | 8.164E-25 |
| au195 | 1.114E-20 | 1.106E-20 | 1.087E-20 | 1.019E-20 | 8.487E-21 | 6.762E-21 | 2.616E-21 | 6.717E-22 | 1.725E-22 | 4.413E-23 | 1.602E-23 | 1.133E-23 | 2.910E-24 | 7.473E-25 |
| hg194 | 7.194E-27 | 7.194E-27 | 7.193E-27 | 7.193E-27 | 7.191E-27 | 7.190E-27 | 7.182E-27 | 7.170E-27 | 7.159E-27 | 7.148E-27 | 7.140E-27 | 7.137E-27 | 7.126E-27 | 7.115E-27 |
| hg203 | 2.692E-18 | 2.613E-18 | 2.444E-18 | 1.884E-18 | 9.088E-19 | 3.668E-19 | 8.258E-21 | 3.620E-23 | 1.587E-25 | 6.853E-28 | 1.198E-29 | 3.004E-30 | 1.317E-32 | 0.000E+00 |
| tl202 | 8.928E-27 | 7.977E-27 | 6.191E-27 | 2.311E-27 | 1.465E-28 | 4.771E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 5.214E-32 | 0.000E+00 | 0.000E+00 |
| tl204 | 5.290E-19 | 5.285E-19 | 5.273E-19 | 5.227E-19 | 5.100E-19 | 4.946E-19 | 4.352E-19 | 3.624E-19 | 3.018E-19 | 2.511E-19 | 2.191E-19 | 2.091E-19 | 1.741E-19 | 1.450E-19 |
| total | 2.818E-07 | 2.817E-07 | 2.815E-07 | 2.808E-07 | 2.787E-07 | 2.762E-07 | 2.658E-07 | 2.517E-07 | 2.383E-07 | 2.257E-07 | 2.167E-07 | 2.137E-07 | 2.025E-07 | 1.918E-07 |

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5 more years for cooling used fuel material light elements page 11

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element thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 2.743E-07 | 2.743E-07 | 2.741E-07 | 2.733E-07 | 2.713E-07 | 2.687E-07 | 2.584E-07 | 2.443E-07 | 2.309E-07 | 2.182E-07 | 2.093E-07 | 2.063E-07 | 1.950E-07 | 1.844E-07 |
| be | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 | 5.280E-11 |
| c | 7.376E-09 | 7.376E-09 | 7.376E-09 | 7.376E-09 | 7.376E-09 | 7.376E-09 | 7.375E-09 | 7.374E-09 | 7.373E-09 | 7.373E-09 | 7.372E-09 | 7.372E-09 | 7.371E-09 | 7.370E-09 |
| na | 1.169E-22 | 1.167E-22 | 1.164E-22 | 1.149E-22 | 1.108E-22 | 1.060E-22 | 8.803E-23 | 6.746E-23 | 5.370E-23 | 3.959E-23 | 3.247E-23 | 3.034E-23 | 2.325E-23 | 1.782E-23 |
| al | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 | 1.078E-26 |
| si | 2.240E-24 | 2.240E-24 | 2.240E-24 | 2.240E-24 | 2.238E-24 | 2.237E-24 | 2.229E-24 | 2.219E-24 | 2.209E-24 | 2.199E-24 | 2.192E-24 | 2.189E-24 | 2.180E-24 | 2.170E-24 |
| p | 3.153E-21 | 2.975E-21 | 2.611E-21 | 1.585E-21 | 4.162E-22 | 9.572E-23 | 2.271E-23 | 2.254E-23 | 2.244E-23 | 2.234E-23 | 2.226E-23 | 2.224E-23 | 2.214E-23 | 2.204E-23 |
| s | 6.576E-19 | 6.473E-19 | 6.247E-19 | 5.438E-19 | 3.689E-19 | 2.275E-19 | 3.019E-20 | 1.676E-21 | 9.304E-23 | 5.124E-24 | 5.942E-25 | 2.845E-25 | 1.579E-26 | 8.767E-28 |
| cl | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 | 2.878E-21 |
| ar | 8.431E-20 | 8.416E-20 | 8.384E-20 | 8.285E-20 | 8.135E-20 | 8.068E-20 | 8.027E-20 | 8.006E-20 | 7.985E-20 | 7.965E-20 | 7.949E-20 | 7.944E-20 | 7.924E-20 | 7.903E-20 |
| k | 3.034E-23 | 3.034E-23 | 3.034E-23 | 3.033E-23 | 3.033E-23 | 3.033E-23 | 3.033E-23 | 3.033E-23 | 3.032E-23 | 3.025E-23 | 3.024E-23 | 3.023E-23 | 3.021E-23 | 3.019E-23 |
| ca | 1.257E-18 | 1.246E-18 | 1.223E-18 | 1.135E-18 | 9.209E-19 | 7.101E-19 | 2.395E-19 | 5.053E-20 | 2.066E-20 | 6.241E-21 | 7.036E-22 | 4.736E-22 | 1.007E-22 | 2.200E-23 |
| sc | 3.168E-16 | 3.116E-16 | 3.002E-16 | 2.598E-16 | 1.732E-16 | 1.046E-16 | 1.268E-17 | 6.193E-19 | 3.024E-20 | 1.464E-21 | 1.543E-22 | 7.150E-23 | 3.492E-24 | 1.705E-25 |
| v | 1.774E-22 | 1.766E-22 | 1.749E-22 | 1.686E-22 | 1.521E-22 | 1.338E-22 | 7.834E-23 | 3.639E-23 | 1.691E-23 | 7.837E-24 | 4.426E-24 | 3.641E-24 | 1.691E-24 | 7.858E-25 |
| cr | 6.209E-20 | 5.906E-20 | 5.277E-20 | 3.405E-20 | 9.993E-21 | 2.172E-21 | 3.678E-24 | 3.973E-28 | 4.291E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 1.382E-17 | 1.376E-17 | 1.362E-17 | 1.310E-17 | 1.175E-17 | 1.026E-17 | 5.824E-18 | 2.589E-18 | 1.151E-18 | 5.104E-19 | 2.790E-19 | 2.269E-19 | 1.009E-19 | 4.483E-20 |
| fe | 8.323E-18 | 8.075E-18 | 7.543E-18 | 5.796E-18 | 2.817E-18 | 1.217E-18 | 1.979E-19 | 1.391E-19 | 1.080E-19 | 8.387E-20 | 6.949E-20 | 6.516E-20 | 5.062E-20 | 3.933E-20 |
| co | 2.621E-15 | 2.619E-15 | 2.615E-15 | 2.598E-15 | 2.552E-15 | 2.496E-15 | 2.277E-15 | 1.996E-15 | 1.750E-15 | 1.534E-15 | 1.391E-15 | 1.345E-15 | 1.180E-15 | 1.034E-15 |
| ni | 1.660E-19 | 1.660E-19 | 1.660E-19 | 1.659E-19 | 1.658E-19 | 1.656E-19 | 1.648E-19 | 1.637E-19 | 1.626E-19 | 1.615E-19 | 1.607E-19 | 1.605E-19 | 1.594E-19 | 1.583E-19 |
| zn | 5.346E-20 | 5.316E-20 | 5.248E-20 | 4.994E-20 | 4.345E-20 | 3.653E-20 | 1.770E-20 | 6.274E-21 | 2.224E-21 | 7.860E-22 | 3.629E-22 | 2.786E-22 | 9.875E-23 | 3.500E-23 |
| sn | 5.147E-24 | 5.145E-24 | 5.143E-24 | 5.133E-24 | 5.107E-24 | 5.077E-24 | 4.974E-24 | 4.865E-24 | 4.776E-24 | 4.695E-24 | 4.638E-24 | 4.619E-24 | 4.546E-24 | 4.474E-24 |
| sb | 3.759E-22 | 3.675E-22 | 3.494E-22 | 2.870E-22 | 1.665E-22 | 8.617E-23 | 1.055E-23 | 5.023E-24 | 3.860E-24 | 3.000E-24 | 2.488E-24 | 2.334E-24 | 1.816E-24 | 1.413E-24 |
| te | 8.601E-20 | 8.451E-20 | 8.125E-20 | 6.985E-20 | 4.646E-20 | 2.882E-20 | 5.075E-21 | 5.676E-22 | 6.767E-23 | 8.218E-24 | 1.815E-24 | 1.116E-24 | 2.360E-25 | 1.081E-25 |
| i | 5.263E-23 | 5.141E-23 | 4.878E-23 | 3.976E-23 | 2.244E-23 | 1.101E-23 | 5.619E-25 | 7.942E-27 | 1.128E-28 | 2.090E-30 | 5.884E-31 | 5.449E-31 | 5.231E-31 | 5.228E-31 |
| xe | 1.565E-22 | 1.505E-22 | 1.380E-22 | 9.858E-23 | 3.867E-23 | 1.210E-23 | 9.415E-26 | 9.021E-29 | 8.643E-32 | 8.124E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 3.880E-19 | 3.873E-19 | 3.856E-19 | 3.792E-19 | 3.624E-19 | 3.426E-19 | 2.713E-19 | 1.938E-19 | 1.388E-19 | 9.900E-20 | 7.711E-20 | 7.079E-20 | 5.062E-20 | 3.619E-20 |
| ba | 3.301E-20 | 3.282E-20 | 3.246E-20 | 3.166E-20 | 3.103E-20 | 3.067E-20 | 2.929E-20 | 2.743E-20 | 2.568E-20 | 2.404E-20 | 2.289E-20 | 2.250E-20 | 2.107E-20 | 1.973E-20 |
| la | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 | 2.121E-21 |
| ce | 9.611E-23 | 9.514E-23 | 9.299E-23 | 8.509E-23 | 6.641E-23 | 4.882E-23 | 1.351E-23 | 2.150E-24 | 3.421E-25 | 5.416E-26 | 1.376E-26 | 8.617E-27 | 1.371E-27 | 2.182E-28 |
| tm | 4.565E-25 | 4.556E-25 | 4.535E-25 | 4.456E-25 | 4.242E-25 | 3.991E-25 | 3.097E-25 | 2.158E-25 | 1.504E-25 | 1.047E-25 | 8.005E-26 | 7.302E-26 | 5.091E-26 | 3.549E-26 |
| lu | 1.279E-18 | 1.269E-18 | 1.248E-18 | 1.169E-18 | 9.767E-19 | 7.857E-19 | 3.485E-19 | 1.506E-19 | 8.963E-20 | 6.275E-20 | 5.037E-20 | 4.694E-20 | 3.609E-20 | 2.817E-20 |
| hf | 5.080E-16 | 4.976E-16 | 4.750E-16 | 3.967E-16 | 2.406E-16 | 1.301E-16 | 1.074E-17 | 4.305E-19 | 4.110E-20 | 7.177E-21 | 2.174E-21 | 1.453E-21 | 3.043E-22 | 6.769E-23 |
| ta | 6.905E-18 | 6.822E-18 | 6.640E-18 | 5.979E-18 | 4.443E-18 | 3.073E-18 | 1.581E-17 | 1.261E-18 | 8.006E-19 | 8.777E-20 | 1.701E-20 | 9.714E-21 | 1.105E-21 | 1.532E-22 |
| w | 1.573E-17 | 1.544E-17 | 1.482E-17 | 1.261E-17 | 8.018E-18 | 4.566E-18 | 4.344E-19 | 1.513E-20 | 5.467E-22 | 2.191E-23 | 2.368E-24 | 1.160E-24 | 9.033E-26 | 9.361E-27 |
| re | 1.849E-18 | 1.812E-18 | 1.734E-18 | 1.458E-18 | 8.995E-19 | 4.938E-19 | 4.209E-20 | 1.919E-21 | 2.946E-22 | 1.271E-22 | 9.920E-23 | 9.498E-23 | 8.795E-23 | 8.638E-23 |
| os | 1.188E-19 | 1.170E-19 | 1.132E-19 | 9.945E-20 | 6.919E-20 | 4.404E-20 | 6.669E-21 | 4.515E-22 | 3.444E-23 | 6.021E-24 | 3.964E-24 | 3.725E-24 | 3.209E-24 | 2.852E-24 |
| ir | 2.490E-16 | 2.444E-16 | 2.343E-16 | 1.988E-16 | 1.255E-16 | 7.077E-17 | 6.458E-18 | 2.099E-19 | 6.900E-21 | 2.952E-22 | 8.664E-23 | 7.469E-23 | 6.043E-23 | 5.364E-23 |
| pt | 5.856E-19 | 5.855E-19 | 5.854E-19 | 5.851E-19 | 5.840E-19 | 5.826E-19 | 5.770E-19 | 5.691E-19 | 5.612E-19 | 5.535E-19 | 5.478E-19 | 5.459E-19 | 5.384E-19 | 5.310E-19 |
| au | 1.114E-20 | 1.106E-20 | 1.087E-20 | 1.019E-20 | 8.488E-21 | 6.763E-21 | 2.617E-21 | 6.726E-22 | 1.733E-22 | 4.495E-23 | 1.684E-23 | 1.215E-23 | 3.728E-24 | 1.564E-24 |
| hg | 2.692E-18 | 2.613E-18 | 2.444E-18 | 1.884E-18 | 9.088E-19 | 3.668E-19 | 8.258E-21 | 3.621E-23 | 1.658E-25 | 7.833E-27 | 7.152E-27 | 7.140E-27 | 7.126E-27 | 7.115E-27 |
| tl | 5.290E-19 | 5.285E-19 | 5.273E-19 | 5.227E-19 | 5.100E-19 | 4.946E-19 | 4.352E-19 | 3.624E-19 | 3.018E-19 | 2.511E-19 | 2.191E-19 | 2.091E-19 | 1.741E-19 | 1.450E-19 |
| totals | 2.818E-07 | 2.817E-07 | 2.815E-07 | 2.808E-07 | 2.787E-07 | 2.762E-07 | 2.658E-07 | 2.517E-07 | 2.383E-07 | 2.257E-07 | 2.167E-07 | 2.137E-07 | 2.025E-07 | 1.918E-07 |

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5 more years for cooling used fuel material actinides page 12

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he 4 | 3.968E-02 | 3.975E-02 | 3.989E-02 | 4.043E-02 | 4.179E-02 | 4.321E-02 | 4.720E-02 | 5.061E-02 | 5.334E-02 | 5.596E-02 | 5.790E-02 | 5.857E-02 | 6.121E-02 | 6.387E-02 |
| li 6 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 | 5.394E-17 |
| li 7 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 |
| tl207 | 3.854E-18 | 3.853E-18 | 3.858E-18 | 3.931E-18 | 4.279E-18 | 4.751E-18 | 7.089E-18 | 9.958E-18 | 1.285E-17 | 1.577E-17 | 1.796E-17 | 1.834E-17 | 2.166E-17 | 2.463E-17 |
| tl208 | 4.661E-14 | 4.681E-14 | 4.692E-14 | 4.888E-14 | 5.628E-14 | 6.472E-14 | 1.030E-13 | 1.618E-13 | 2.195E-13 | 2.725E-13 | 3.079E-13 | 3.194E-13 | 3.584E-13 | 3.912E-13 |
| pb204 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 |
| pb205 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.799E-17 | 1.800E-17 | 1.800E-17 | 1.800E-17 | 1.800E-17 | 1.800E-17 |
| pb206 | 2.740E-14 | 2.751E-14 | 2.777E-14 | 2.878E-14 | 3.167E-14 | 3.543E-14 | 5.566E-14 | 8.938E-14 | 1.206E-13 | 1.497E-13 | 1.708E-13 | 1.774E-13 | 1.969E-13 | 2.148E-13 |
| pb207 | 9.517E-13 | 9.533E-13 | 9.570E-13 | 9.713E-13 | 1.013E-12 | 1.071E-12 | 1.386E-12 | 2.025E-12 | 2.886E-12 | 3.971E-12 | 4.924E-12 | 5.277E-12 | 6.806E-12 | 8.565E-12 |
| pb208 | 1.186E-08 | 1.194E-08 | 1.214E-08 | 1.293E-08 | 1.527E-08 | 1.859E-08 | 3.786E-08 | 8.164E-08 | 1.449E-07 | 2.268E-07 | 2.985E-07 | 3.250E-07 | 4.375E-07 | 5.619E-07 |
| pb209 | 2.231E-16 | 2.231E-16 | 2.230E-16 | 2.228E-16 | 2.228E-16 | 2.231E-16 | 2.243E-16 | 2.260E-16 | 2.279E-16 | 2.300E-16 | 2.317E-16 | 2.321E-16 | 2.348E-16 | 2.374E-16 |
| pb210 | 7.974E-13 | 7.974E-13 | 7.972E-13 | 7.964E-13 | 7.944E-13 | 7.919E-13 | 7.834E-13 | 7.774E-13 | 7.801E-13 | 7.937E-13 | 8.121E-13 | 8.202E-13 | 8.622E-13 | 9.221E-13 |
| pb211 | 2.981E-17 | 2.981E-17 | 2.985E-17 | 3.041E-17 | 3.310E-17 | 3.676E-17 | 5.484E-17 | 7.703E-17 | 9.942E-17 | 1.220E-16 | 1.389E-16 | 1.419E-16 | 1.676E-16 | 1.905E-16 |
| pb212 | 2.764E-11 | 2.763E-11 | 2.782E-11 | 2.899E-11 | 3.337E-11 | 3.838E-11 | 6.110E-11 | 9.596E-11 | 1.301E-10 | 1.616E-10 | 1.826E-10 | 1.894E-10 | 2.125E-10 | 2.320E-10 |
| bi208 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 | 1.698E-17 |
| bi209 | 1.526E-12 | 1.528E-12 | 1.534E-12 | 1.554E-12 | 1.610E-12 | 1.680E-12 | 1.973E-12 | 2.391E-12 | 2.815E-12 | 3.243E-12 | 3.564E-12 | 3.675E-12 | 4.110E-12 | 4.551E-12 |
| bi210m | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 | 2.261E-17 |
| bi210 | 4.932E-16 | 4.931E-16 | 4.930E-16 | 4.925E-16 | 4.912E-16 | 4.899E-16 | 4.846E-16 | 4.808E-16 | 4.825E-16 | 4.909E-16 | 5.023E-16 | 5.073E-16 | 5.332E-16 | 5.703E-16 |
| bi211 | 1.767E-18 | 1.767E-18 | 1.769E-18 | 1.803E-18 | 1.962E-18 | 2.179E-18 | 3.251E-18 | 4.567E-18 | 5.893E-18 | 7.233E-18 | 8.236E-18 | 8.412E-18 | 9.932E-18 | 1.129E-17 |
| bi212 | 2.622E-12 | 2.633E-12 | 2.639E-12 | 2.749E-12 | 3.165E-12 | 3.640E-12 | 5.795E-12 | 9.101E-12 | 1.234E-11 | 1.533E-11 | 1.732E-11 | 1.796E-11 | 2.016E-11 | 2.200E-11 |
| bi213 | 5.311E-17 | 5.311E-17 | 5.309E-17 | 5.305E-17 | 5.305E-17 | 5.310E-17 | 5.339E-17 | 5.380E-17 | 5.425E-17 | 5.475E-17 | 5.515E-17 | 5.524E-17 | 5.588E-17 | 5.652E-17 |
| po210 | 1.159E-14 | 1.161E-14 | 1.166E-14 | 1.182E-14 | 1.220E-14 | 1.251E-14 | 1.304E-14 | 1.312E-14 | 1.312E-14 | 1.326E-14 | 1.347E-14 | 1.357E-14 | 1.415E-14 | 1.500E-14 |
| po216 | 1.066E-16 | 1.066E-16 | 1.072E-16 | 1.118E-16 | 1.287E-16 | 1.480E-16 | 2.357E-16 | 3.701E-16 | 5.020E-16 | 6.232E-16 | 7.041E-16 | 7.304E-16 | 8.197E-16 | 8.947E-16 |
| rn220 | 4.164E-14 | 4.164E-14 | 4.187E-14 | 4.366E-14 | 5.027E-14 | 5.781E-14 | 9.203E-14 | 1.445E-13 | 1.960E-13 | 2.434E-13 | 2.750E-13 | 2.853E-13 | 3.201E-13 | 3.494E-13 |
| rn222 | 1.378E-16 | 1.378E-16 | 1.383E-16 | 1.416E-16 | 1.534E-16 | 1.673E-16 | 2.342E-16 | 3.567E-16 | 5.143E-16 | 7.117E-16 | 8.863E-16 | 9.518E-16 | 1.239E-15 | 1.578E-15 |
| fr221 | 5.923E-18 | 5.923E-18 | 5.921E-18 | 5.916E-18 | 5.916E-18 | 5.922E-18 | 5.954E-18 | 6.000E-18 | 6.050E-18 | 6.106E-18 | 6.151E-18 | 6.161E-18 | 6.232E-18 | 6.303E-18 |
| ra223 | 1.436E-14 | 1.436E-14 | 1.438E-14 | 1.465E-14 | 1.595E-14 | 1.771E-14 | 2.642E-14 | 3.712E-14 | 4.790E-14 | 5.879E-14 | 6.695E-14 | 6.838E-14 | 8.073E-14 | 9.181E-14 |
| ra224 | 2.411E-10 | 2.411E-10 | 2.424E-10 | 2.528E-10 | 2.911E-10 | 3.348E-10 | 5.330E-10 | 8.370E-10 | 1.135E-09 | 1.409E-09 | 1.592E-09 | 1.652E-09 | 1.854E-09 | 2.024E-09 |
| ra225 | 2.637E-14 | 2.637E-14 | 2.636E-14 | 2.636E-14 | 2.638E-14 | 2.640E-14 | 2.654E-14 | 2.675E-14 | 2.697E-14 | 2.722E-14 | 2.742E-14 | 2.747E-14 | 2.778E-14 | 2.810E-14 |
| ra226 | 2.143E-11 | 2.150E-11 | 2.164E-11 | 2.222E-11 | 2.387E-11 | 2.603E-11 | 3.645E-11 | 5.550E-11 | 8.002E-11 | 1.107E-10 | 1.379E-10 | 1.481E-10 | 1.928E-10 | 2.455E-10 |
| ra228 | 4.776E-16 | 4.781E-16 | 4.792E-16 | 4.835E-16 | 4.952E-16 | 5.098E-16 | 5.695E-16 | 6.517E-16 | 7.305E-16 | 8.065E-16 | 8.613E-16 | 8.797E-16 | 9.505E-16 | 1.019E-15 |
| ac225 | 1.772E-14 | 1.772E-14 | 1.771E-14 | 1.770E-14 | 1.770E-14 | 1.772E-14 | 1.781E-14 | 1.795E-14 | 1.810E-14 | 1.827E-14 | 1.840E-14 | 1.843E-14 | 1.865E-14 | 1.886E-14 |
| ac227 | 1.068E-11 | 1.072E-11 | 1.081E-11 | 1.117E-11 | 1.217E-11 | 1.343E-11 | 1.868E-11 | 2.625E-11 | 3.387E-11 | 4.156E-11 | 4.731E-11 | 4.929E-11 | 5.706E-11 | 6.489E-11 |
| th227 | 2.347E-14 | 2.356E-14 | 2.378E-14 | 2.460E-14 | 2.692E-14 | 2.982E-14 | 4.335E-14 | 6.090E-14 | 7.859E-14 | 9.646E-14 | 1.098E-13 | 1.129E-13 | 1.325E-13 | 1.506E-13 |
| th228 | 4.670E-08 | 4.695E-08 | 4.753E-08 | 4.978E-08 | 5.628E-08 | 6.474E-08 | 1.032E-07 | 1.622E-07 | 2.199E-07 | 2.729E-07 | 3.082E-07 | 3.194E-07 | 3.589E-07 | 3.917E-07 |
| th229 | 4.826E-09 | 4.826E-09 | 4.826E-09 | 4.828E-09 | 4.832E-09 | 4.837E-09 | 4.861E-09 | 4.898E-09 | 4.939E-09 | 4.985E-09 | 5.021E-09 | 5.034E-09 | 5.088E-09 | 5.146E-09 |
| th230 | 1.302E-06 | 1.305E-06 | 1.310E-06 | 1.333E-06 | 1.396E-06 | 1.476E-06 | 1.833E-06 | 2.404E-06 | 3.049E-06 | 3.759E-06 | 4.335E-06 | 4.541E-06 | 5.392E-06 | 6.312E-06 |
| th231 | 5.966E-11 | 5.966E-11 | 5.966E-11 | 5.967E-11 | 5.967E-11 | 5.967E-11 | 5.969E-11 | 5.972E-11 | 5.975E-11 | 5.978E-11 | 5.980E-11 | 5.981E-11 | 5.983E-11 | 5.986E-11 |
| th232 | 3.013E-06 | 3.014E-06 | 3.015E-06 | 3.021E-06 | 3.039E-06 | 3.060E-06 | 3.151E-06 | 3.280E-06 | 3.410E-06 | 3.541E-06 | 3.639E-06 | 3.672E-06 | 3.804E-06 | 3.936E-06 |
| th234 | 2.015E-07 | 2.015E-07 | 2.015E-07 | 2.015E-07 | 2.015E-07 | 2.015E-07 | 2.016E-07 | 2.015E-07 | 2.015E-07 | 2.015E-07 | 2.016E-07 | 2.015E-07 | 2.015E-07 | 2.015E-07 |
| pa230 | 4.368E-17 | 4.034E-17 | 3.372E-17 | 1.679E-17 | 2.384E-18 | 2.099E-19 | 8.135E-24 | 3.941E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 3.760E-07 | 3.761E-07 | 3.763E-07 | 3.770E-07 | 3.790E-07 | 3.814E-07 | 3.914E-07 | 4.056E-07 | 4.199E-07 | 4.342E-07 | 4.448E-07 | 4.485E-07 | 4.628E-07 | 4.771E-07 |
| pa232 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.494E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 | 2.493E-16 |
| pa233 | 9.277E-08 | 9.277E-08 | 9.277E-08 | 9.279E-08 | 9.283E-08 | 9.289E-08 | 9.321E-08 | 9.392E-08 | 9.475E-08 | 9.575E-08 | 9.648E-08 | 9.678E-08 | 9.825E-08 | 9.973E-08 |
| pa234m | 6.730E-12 | 6.730E-12 | 6.730E-12 | 6.730E-12 | 6.730E-12 | 6.730E-12 | 6.734E-12 | 6.730E-12 | 6.730E-12 | 6.730E-12 | 6.732E-12 | 6.730E-12 | 6.730E-12 | 6.730E-12 |
| pa234 | 3.735E-12 | 3.733E-12 | 3.735E-12 | 3.735E-12 | 3.735E-12 | 3.735E-12 | 3.737E-12 | 3.735E-12 | 3.735E-12 | 3.735E-12 | 3.736E-12 | 3.735E-12 | 3.735E-12 | 3.735E-12 |
| u230 | 9.721E-17 | 9.119E-17 | 7.897E-17 | 4.504E-17 | 9.227E-18 | 1.257E-18 | 2.729E-22 | 1.424E-27 | 7.430E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 6.395E-06 | 6.414E-06 | 6.457E-06 | 6.621E-06 | 7.070E-06 | 7.608E-06 | 9.621E-06 | 1.193E-05 | 1.370E-05 | 1.505E-05 | 1.583E-05 | 1.606E-05 | 1.681E-05 | 1.736E-05 |
| u233 | 7.336E-06 | 7.340E-06 | 7.351E-06 | 7.393E-06 | 7.510E-06 | 7.655E-06 | 8.265E-06 | 9.236E-06 | 1.021E-05 | 1.120E-05 | 1.188E-05 | 1.211E-05 | 1.312E-05 | 1.414E-05 |
| u234 | 1.669E-01 | 1.670E-01 | 1.673E-01 | 1.684E-01 | 1.716E-01 | 1.756E-01 | 1.930E-01 | 2.185E-01 | 2.440E-01 | 2.693E-01 | 2.881E-01 | 2.945E-01 | 3.194E-01 | 3.441E-01 |
| u235 | 1.467E+01 | 1.467E+01 | 1.467E+01 | 1.467E+01 | 1.468E+01 | 1.468E+01 | 1.468E+01 | 1.469E+01 | 1.469E+01 | 1.470E+01 | 1.471E+01 | 1.471E+01 | 1.472E+01 | 1.472E+01 |
| u236 | 4.435E+00 | 4.435E+00 | 4.435E+00 | 4.436E+00 | 4.438E+00 | 4.441E+00 | 4.452E+00 | 4.467E+00 | 4.483E+00 | 4.499E+00 | 4.510E+00 | 4.514E+00 | 4.530E+00 | 4.546E+00 |

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5 more years for cooling used fuel material actinides page 13

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nuclide concentrations, grams
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| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 2.470E-06 | 2.470E-06 | 2.468E-06 | 2.462E-06 | 2.446E-06 | 2.427E-06 | 2.346E-06 | 2.235E-06 | 2.129E-06 | 2.028E-06 | 1.956E-06 | 1.932E-06 | 1.841E-06 | 1.754E-06 |
| u238 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 |
| u240 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 | 3.274E-14 |
| np235 | 3.543E-08 | 3.531E-08 | 3.503E-08 | 3.397E-08 | 3.118E-08 | 2.803E-08 | 1.794E-08 | 9.473E-09 | 5.002E-09 | 2.637E-09 | 1.638E-09 | 1.392E-09 | 7.351E-10 | 3.882E-10 |
| np236 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 | 5.369E-06 |
| np237 | 2.740E+00 | 2.740E+00 | 2.740E+00 | 2.741E+00 | 2.742E+00 | 2.744E+00 | 2.754E+00 | 2.773E+00 | 2.798E+00 | 2.827E+00 | 2.853E+00 | 2.862E+00 | 2.901E+00 | 2.945E+00 |
| np238 | 1.228E-08 | 1.228E-08 | 1.227E-08 | 1.227E-08 | 1.226E-08 | 1.225E-08 | 1.221E-08 | 1.215E-08 | 1.209E-08 | 1.203E-08 | 1.199E-08 | 1.197E-08 | 1.191E-08 | 1.186E-08 |
| np239 | 5.017E-06 | 5.017E-06 | 5.017E-06 | 5.017E-06 | 5.017E-06 | 5.017E-06 | 5.017E-06 | 5.016E-06 | 5.016E-06 | 5.015E-06 | 5.015E-06 | 5.015E-06 | 5.014E-06 | 5.014E-06 |
| np240m | 2.794E-16 | 2.796E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 | 2.794E-16 |
| np240 | 2.875E-18 | 2.877E-18 | 2.875E-18 | 2.875E-18 | 2.875E-18 | 2.875E-18 | 2.875E-18 | 2.875E-18

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pu244 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 | 1.680E-03 |
| am241 | 6.270E+00 | 6.291E+00 | 6.338E+00 | 6.522E+00 | 7.032E+00 | 7.663E+00 | 1.024E+01 | 1.378E+01 | 1.715E+01 | 2.035E+01 | 2.263E+01 | 2.339E+01 | 2.628E+01 | 2.903E+01 | |
| am242m | 6.615E-02 | 6.615E-02 | 6.614E-02 | 6.613E-02 | 6.609E-02 | 6.603E-02 | 1.580E-02 | 5.548E-02 | 5.516E-02 | 5.484E-02 | 5.460E-02 | 6.452E-02 | 6.421E-02 | 6.389E-02 | |
| am242 | 8.535E-07 | 8.535E-07 | 8.534E-07 | 8.532E-07 | 8.526E-07 | 8.519E-07 | 8.490E-07 | 8.449E-07 | 8.407E-07 | 8.366E-07 | 8.335E-07 | 8.325E-07 | 8.284E-07 | 8.243E-07 | |
| am243 | 5.828E+00 | 5.828E+00 | 5.828E+00 | 5.828E+00 | 5.828E+00 | 5.828E+00 | 5.828E+00 | 5.827E+00 | 5.826E+00 | 5.826E+00 | 5.826E+00 | 5.825E+00 | 5.825E+00 | 5.824E+00 | |
| am244 | 4.441E-17 | 4.439E-17 | 4.438E-17 | 4.419E-17 | 4.373E-17 | 4.317E-17 | 4.091E-17 | 3.788E-17 | 3.507E-17 | 3.247E-17 | 3.065E-17 | 3.006E-17 | 2.783E-17 | 2.577E-17 | |
| am245 | 5.029E-16 | 5.008E-16 | 4.959E-16 | 4.775E-16 | 4.294E-16 | 3.762E-16 | 2.166E-16 | 9.822E-17 | 4.455E-17 | 2.016E-17 | 1.119E-17 | 9.145E-18 | 4.148E-18 | 1.881E-18 | |
| cm240 | 5.495E-13 | 5.220E-13 | 4.650E-13 | 2.967E-13 | 8.434E-14 | 1.762E-14 | 2.528E-17 | 2.155E-21 | 1.836E-25 | 1.525E-29 | 1.414E-32 | 1.299E-33 | 0.000E+00 | 0.000E+00 | |
| cm241 | 7.026E-10 | 6.735E-10 | 6.124E-10 | 4.231E-10 | 1.502E-10 | 4.139E-11 | 1.890E-13 | 8.446E-17 | 3.773E-20 | 1.651E-23 | 5.264E-26 | 7.375E-27 | 3.295E-30 | 1.472E-33 | |
| cm242 | 3.687E-01 | 3.656E-01 | 3.586E-01 | 3.329E-01 | 2.703E-01 | 2.086E-01 | 7.061E-02 | 1.508E-02 | 3.326E-03 | 8.343E-04 | 3.777E-04 | 3.091E-04 | 1.973E-04 | 1.730E-04 | |
| cm243 | 2.819E-02 | 2.818E-02 | 2.817E-02 | 2.814E-02 | 2.805E-02 | 2.794E-02 | 2.748E-02 | 2.683E-02 | 2.620E-02 | 2.559E-02 | 2.514E-02 | 2.498E-02 | 2.440E-02 | 2.382E-02 | |
| cm244 | 2.251E+00 | 2.250E+00 | 2.249E+00 | 2.245E+00 | 2.234E+00 | 2.219E+00 | 2.161E+00 | 2.080E+00 | 2.002E+00 | 1.926E+00 | 1.872E+00 | 1.854E+00 | 1.785E+00 | 1.718E+00 | |
| cm245 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.136E-01 | 2.135E-01 | 2.135E-01 |
| cm246 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.423E-02 | 1.422E-02 | 1.422E-02 | 1.422E-02 | 1.422E-02 | 1.422E-02 | 1.422E-02 | 1.421E-02 |
| cm247 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 | 2.163E-04 |
| cm248 | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 | 1.385E-05 |
| cm250 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.698E-12 | 1.697E-12 | 1.697E-12 | 1.697E-12 | 1.697E-12 |
| bk247 | 8.466E-15 | 8.466E-15 | 8.466E-15 | 8.466E-15 | 8.465E-15 | 8.465E-15 | 8.462E-15 | 8.457E-15 | 8.453E-15 | 8.449E-15 | 8.446E-15 | 8.445E-15 | 8.441E-15 | 8.436E-15 | |
| bk248 | 3.523E-13 | 3.521E-13 | 3.518E-13 | 3.505E-13 | 3.469E-13 | 3.425E-13 | 3.245E-13 | 3.005E-13 | 2.782E-13 | 2.575E-13 | 2.432E-13 | 2.384E-13 | 2.208E-13 | 2.044E-13 | |
| bk249 | 1.320E-07 | 1.315E-07 | 1.302E-07 | 1.253E-07 | 1.127E-07 | 9.877E-08 | 5.685E-08 | 2.579E-08 | 1.170E-08 | 5.293E-09 | 2.936E-09 | 2.401E-09 | 1.089E-09 | 4.939E-10 | |
| bk250 | 4.362E-17 | 4.340E-17 | 4.291E-17 | 4.107E-17 | 3.631E-17 | 3.115E-17 | 1.641E-17 | 6.558E-18 | 2.623E-18 | 1.049E-18 | 5.322E-19 | 4.225E-19 | 1.724E-19 | 7.245E-20 | |
| cf248 | 2.373E-13 | 2.363E-13 | 2.341E-13 | 2.258E-13 | 2.039E-13 | 1.796E-13 | 1.057E-13 | 4.951E-14 | 2.319E-14 | 1.084E-14 | 6.157E-15 | 5.075E-15 | 2.377E-15 | 1.113E-15 | |
| cf249 | 1.272E-07 | 1.278E-07 | 1.291E-07 | 1.339E-07 | 1.465E-07 | 1.604E-07 | 2.020E-07 | 2.327E-07 | 2.463E-07 | 2.522E-07 | 2.542E-07 | 2.546E-07 | 2.554E-07 | 2.555E-07 | |
| cf250 | 6.392E-08 | 6.390E-08 | 6.386E-08 | 6.370E-08 | 6.325E-08 | 6.269E-08 | 6.042E-08 | 5.730E-08 | 5.434E-08 | 5.153E-08 | 4.954E-08 | 4.888E-08 | 4.635E-08 | 4.396E-08 | |
| cf251 | 3.155E-08 | 3.154E-08 | 3.154E-08 | 3.154E-08 | 3.154E-08 | 3.154E-08 | 3.154E-08 | 3.149E-08 | 3.143E-08 | 3.142E-08 | 3.143E-08 | 3.140E-08 | 3.140E-08 | 3.137E-08 | |
| cf252 | 9.789E-09 | 9.775E-09 | 9.744E-09 | 9.622E-09 | 9.290E-09 | 8.892E-09 | 7.405E-09 | 5.699E-09 | 4.386E-09 | 3.373E-09 | 2.775E-09 | 2.596E-09 | 1.998E-09 | 1.537E-09 | |
| cf253 | 1.423E-15 | 1.316E-15 | 1.105E-15 | 5.590E-16 | 8.302E-17 | 7.730E-18 | 3.785E-22 | 2.562E-28 | 1.735E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cf254 | 3.700E-14 | 3.617E-14 | 3.435E-14 | 2.811E-14 | 1.603E-14 | 7.971E-15 | 4.292E-16 | 6.555E-18 | 1.001E-19 | 1.511E-21 | 6.697E-23 | 2.307E-23 | 3.524E-25 | 5.381E-27 | |
| es252 | 2.500E-17 | 2.493E-17 | 2.476E-17 | 2.413E-17 | 2.246E-17 | 2.053E-17 | 1.411E-17 | 8.255E-18 | 4.828E-18 | 2.820E-18 | 1.890E-18 | 1.649E-18 | 9.644E-19 | 5.641E-19 | |
| es253 | 2.907E-14 | 2.727E-14 | 2.361E-14 | 1.345E-14 | 2.738E-15 | 3.685E-16 | 7.317E-20 | 3.243E-25 | 1.391E-30 | 5.765E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| es254 | 9.124E-14 | 9.078E-14 | 8.976E-14 | 8.590E-14 | 7.594E-14 | 6.514E-14 | 3.431E-14 | 1.371E-14 | 5.475E-15 | 2.181E-15 | 1.101E-15 | 8.713E-16 | 3.481E-16 | 1.390E-16 | |
| es255 | 2.131E-16 | 2.058E-16 | 1.903E-16 | 1.403E-16 | 5.977E-17 | 2.066E-17 | 2.434E-19 | 4.224E-22 | 7.327E-25 | 1.249E-27 | 1.095E-29 | 2.167E-30 | 3.760E-33 | 6.524E-36 | |
| total | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | |

1

5 more years for cooling used fuel material actinides page 14

0 element concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 3.968E-02 | 3.975E-02 | 3.989E-02 | 4.043E-02 | 4.179E-02 | 4.321E-02 | 4.720E-02 | 5.061E-02 | 5.334E-02 | 5.596E-02 | 5.790E-02 | 5.857E-02 | 6.121E-02 | 6.387E-02 |
| li | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 | 4.367E-16 |
| tl | 4.662E-14 | 4.681E-14 | 4.693E-14 | 4.889E-14 | 5.628E-14 | 6.473E-14 | 1.030E-13 | 1.618E-13 | 2.195E-13 | 2.725E-13 | 3.079E-13 | 3.194E-13 | 3.584E-13 | 3.912E-13 |
| pb | 1.189E-08 | 1.197E-08 | 1.217E-08 | 1.296E-08 | 1.530E-08 | 1.863E-08 | 3.792E-08 | 8.174E-08 | 1.450E-07 | 2.270E-07 | 2.987E-07 | 3.252E-07 | 4.377E-07 | 5.622E-07 |
| bi | 4.148E-12 | 4.162E-12 | 4.173E-12 | 4.304E-12 | 4.776E-12 | 5.321E-12 | 7.767E-12 | 1.149E-11 | 1.516E-11 | 1.857E-11 | 2.088E-11 | 2.164E-11 | 2.427E-11 | 2.655E-11 |
| po | 1.170E-14 | 1.172E-14 | 1.177E-14 | 1.193E-14 | 1.233E-14 | 1.266E-14 | 1.328E-14 | 1.349E-14 | 1.363E-14 | 1.388E-14 | 1.418E-14 | 1.430E-14 | 1.497E-14 | 1.590E-14 |
| rn | 4.177E-14 | 4.178E-14 | 4.201E-14 | 4.380E-14 | 5.042E-14 | 5.798E-14 | 9.227E-14 | 1.449E-13 | 1.966E-13 | 2.441E-13 | 2.759E-13 | 2.862E-13 | 3.214E-13 | 3.510E-13 |
| fr | 6.201E-18 | 6.203E-18 | 6.203E-18 | 6.207E-18 | 6.233E-18 | 6.271E-18 | 6.441E-18 | 6.683E-18 | 6.932E-18 | 7.189E-18 | 7.383E-18 | 7.444E-18 | 7.719E-18 | 7.994E-18 |
| ra | 2.626E-10 | 2.627E-10 | 2.641E-10 | 2.751E-10 | 3.150E-10 | 3.609E-10 | 5.695E-10 | 8.926E-10 | 1.215E-09 | 1.520E-09 | 1.730E-09 | 1.800E-09 | 2.047E-09 | 2.269E-09 |
| ac | 1.070E-11 | 1.074E-11 | 1.083E-11 | 1.119E-11 | 1.219E-11 | 1.344E-11 | 1.870E-11 | 2.626E-11 | 3.388E-11 | 4.158E-11 | 4.733E-11 | 4.931E-11 | 5.708E-11 | 6.491E-11 |
| th | 4.568E-06 | 4.572E-06 | 4.580E-06 | 4.610E-06 | 4.697E-06 | 4.808E-06 | 5.294E-06 | 6.053E-06 | 6.882E-06 | 7.780E-06 | 8.489E-06 | 8.739E-06 | 9.761E-06 | 1.085E-05 |
| pa | 4.688E-07 | 4.689E-07 | 4.690E-07 | 4.698E-07 | 4.718E-07 | 4.743E-07 | 4.846E-07 | 4.996E-07 | 5.146E-07 | 5.300E-07 | 5.413E-07 | 5.453E-07 | 5.611E-07 | 5.768E-07 |
| u | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 |
| np | 2.740E+00 | 2.740E+00 | 2.740E+00 | 2.741E+00 | 2.742E+00 | 2.744E+00 | 2.754E+00 | 2.773E+00 | 2.798E+00 | 2.827E+00 | 2.853E+00 | 2.862E+00 | 2.901E+00 | 2.945E+00 |
| pu | 4.974E+02 | 4.974E+02 | 4.973E+02 | 4.972E+02 | 4.967E+02 | 4.962E+02 | 4.937E+02 | 4.903E+02 | 4.869E+02 | 4.837E+02 | 4.814E+02 | 4.807E+02 | 4.777E+02 | 4.750E+02 |
| am | 1.216E+01 | 1.219E+01 | 1.223E+01 | 1.242E+01 | 1.293E+01 | 1.356E+01 | 1.614E+01 | 1.967E+01 | 2.304E+01 | 2.624E+01 | 2.852E+01 | 2.928E+01 | 3.217E+01 | 3.492E+01 |
| cm | 2.876E+00 | 2.872E+00 | 2.864E+00 | 2.834E+00 | 2.760E+00 | 2.684E+00 | 2.487E+00 | 2.350E+00 | 2.259E+00 | 2.181E+00 | 2.126E+00 | 2.107E+00 | 2.037E+00 | 1.970E+00 |
| bk | 1.320E-07 | 1.315E-07 | 1.302E-07 | 1.253E-07 | 1.127E-07 | 9.877E-08 | 5.685E-08 | 2.579E-08 | 1.170E-08 | 5.293E-09 | 2.937E-09 | 2.401E-09 | 1.089E-09 | 4.941E-10 |
| cf | 2.325E-07 | 2.330E-07 | 2.342E-07 | 2.387E-07 | 2.505E-07 | 2.635E-07 | 3.014E-07 | 3.272E-07 | 3.365E-07 | 3.385E-07 | 3.379E-07 | 3.375E-07 | 3.351E-07 | 3.324E-07 |
| es | 1.205E-13 | 1.183E-13 | 1.136E-13 | 9.951E-14 | 7.876E-14 | 6.555E-14 | 3.433E-14 | 1.371E-14 | 5.479E-15 | 2.184E-15 | 1.103E-15 | 8.730E-16 | 3.490E-16 | 1.396E-16 |
| totals | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 | 1.441E+04 |

1

5 more years for cooling used fuel material actinides page 15

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg206 | 1.162E-18 | 1.162E-18 | 1.162E-18 | 1.161E-18 | 1.158E-18 | 1.154E-18 | 1.142E-18 | 1.133E-18 | 1.137E-18 | 1.157E-18 | 1.184E-18 | 1.196E-18 | 1.257E-18 | 1.344E-18 |
| tl206 | 8.198E-17 | 8.200E-17 | 8.197E-17 | 8.186E-17 | 8.165E-17 | 8.143E-17 | 8.054E-17 | 7.992E-17 | 8.019E-17 | 8.159E-17 | 8.348E-17 | 8.432E-17 | 8.863E-17 | 9.479E-17 |
| tl207 | 7.341E-10 | 7.340E-10 | 7.350E-10 | 7.489E-10 | 8.153E-10 | 9.052E-10 | 1.350E-09 | 1.897E-09 | 2.448E-09 | 3.005E-09 | 3.422E-09 | 3.495E-09 | 4.126E-09 | 4.692E-09 |
| tl208 | 1.381E-05 | 1.387E-05 | 1.390E-05 | 1.448E-05 | 1.667E-05 | 1.917E-05 | 3.052E-05 | 4.793E-05 | 6.501E-05 | 8.071E-05 | 9.119E-05 | 9.460E-05 | 1.062E-04 | 1.159E-04 |
| tl209 | 2.263E-11 | 2.263E-11 | 2.261E-11 | 2.261E-11 | 2.263E-11 | 2.275E-11 | 2.293E-11 | 2.312E-11 | 2.333E-11 | 2.350E-11 | 2.354E-11 | 2.381E-11 | 2.409E-11 | |
| tl210 | 4.452E-15 | 4.456E-15 | 4.471E-15 | 4.577E-15 | 4.958E-15 | 5.407E-15 | 7.570E-15 | 1.153E-14 | 1.662E-14 | 2.300E-14 | 2.864E-14 | 3.076E-14 | 4.005E-14 | 5.099E-14 |
| pb209 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| pb210 | 6.118E-11 | 6.117E-11 | 6.116E-11 | 6.110E-11 | 6.094E-11 | 6.075E-11 | 6.010E-11 | 5.964E-11 | 5.985E-11 | 6.089E-11 | 6.230E-11 | 6.293E-11 | 6.614E-11 | 7.074E-11 |
| pb211 | 7.362E-10 | 7.361E-10 | 7.370E-10 | 7.510E-10 | 8.175E-10 | 9.077E-10 | 1.354E-09 | 1.902E-09 | 2.455E-09 | 3.013E-09 | 3.431E-09 | 3.504E-09 | 4.138E-09 | 4.705E-09 |
| pb212 | 3.842E-05 | 3.840E-05 | 3.867E-05 | 4.029E-05 | 4.638E-05 | 5.334E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| pb214 | 2.120E-11 | 2.121E-11 | 2.129E-11 | 2.179E-11 | 2.361E-11 | 2.574E-11 | 3.604E-11 | 5.489E-11 | 7.914E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| bi210 | 6.121E-11 | 6.121E-11 | 6.119E-11 | 6.112E-11 | 6.097E-11 | 6.080E-11 | 6.014E-11 | 5.967E-11 | 5.988E-11 | 6.092E-11 | 6.234E-11 | 6.296E-11 | 6.618E-11 | 7.078E-11 |
| bi211 | 7.362E-10 | 7.361E-10 | 7.370E-10 | 7.510E-10 | 8.175E-10 | 9.077E-10 | 1.354E-09 | 1.902E-09 | 2.455E-09 | 3.013E-09 | 3.431E-09 | 3.504E-09 | 4.138E-09 | 4.705E-09 |
| bi212 | 3.842E-05 | 3.858E-05 | 3.867E-05 | 4.029E-05 | 4.638E-05 | 5.334E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| bi213 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.070E-09 | 1.082E-09 | 1.095E-09 |
| bi214 | 2.120E-11 | 2.122E-11 | 2.129E-11 | 2.180E-11 | 2.361E-11 | 2.575E-11 | 3.605E-11 | 5.490E-11 | 7.915E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| po209 | 3.912E-18 | 3.912E-18 | 3.912E-18 | 3.910E-18 | 3.907E-18 | 3.902E-18 | 3.884E-18 | 3.858E-18 | 3.831E-18 | 3.805E-18 | 3.786E-18 | 3.780E-18 | 3.754E-18 | 3.729E-18 |
| po210 | 5.211E-11 | 5.220E-11 | 5.240E-11 | 5.314E-11 | 5.486E-11 | 5.623E-11 | 5.861E-11 | 5.896E-11 | 5.898E-11 | 5.959E-11 | 6.056E-11 | 6.100E-11 | 6.361E-11 | 6.742E-11 |
| po211 | 2.032E-12 | 2.032E-12 | 2.034E-12 | 2.073E-12 | 2.256E-12 | 2.505E-12 | 3.737E-12 | 5.250E-12 | 6.776E-12 | 8.316E-12 | 9.470E-12 | 9.672E-12 | 1.142E-11 | 1.299E-11 |
| po212 | 2.461E-05 | 2.471E-05 | 2.477E-05 | 2.581E-05 | 2.971E-05 | 3.417E-05 | 5.440E-05 | 8.544E-05 | 1.159E-04 | 1.439E-04 | 1.625E-04 | 1.686E-04 | 1.892E-04 | 2.065E-04 |
| po213 | 1.006E-09 | 1.006E-09 | 1.006E-09 | 1.005E-09 | 1.005E-09 | 1.006E-09 | 1.012E-09 | 1.019E-09 | 1.028E-09 | 1.037E-09 | 1.045E-09 | 1.047E-09 | 1.059E-09 | 1.071E-09 |
| po214 | 2.385E-11 | 2.371E-11 | 2.345E-11 | 2.302E-11 | 2.386E-11 | 2.578E-11 | 3.604E-11 | 5.489E-11 | 7.913E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| po215 | 7.362E-10 | 7.361E-10 | 7.370E-10 | 7.510E-10 | 8.175E-10 | 9.077E-10 | 1.354E-09 | 1.902E-09 | 2.455E-09 | 3.013E-09 | 3.431E-09 | 3.504E-09 | 4.138E-09 | 4.705E-09 |
| po216 | 3.842E-05 | 3.842E-05 | 3.863E-05 | 4.029E-05 | 4.638E-05 | 5.334E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| po218 | 2.120E-11 | 2.122E-11 | 2.129E-11 | 2.180E-11 | 2.361E-11 | 2.575E-11 | 3.605E-11 | 5.490E-11 | 7.915E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| at217 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| at218 | 4.240E-15 | 4.244E-15 | 4.258E-15 | 4.360E-15 | 4.722E-15 | 5.150E-15 | 7.210E-15 | 1.098E-14 | 1.583E-14 | 2.191E-14 | 2.728E-14 | 2.930E-14 | 3.814E-14 | 4.857E-14 |
| rn217 | 7.201E-14 | 7.202E-14 | 7.200E-14 | 7.193E-14 | 7.193E-14 | 7.200E-14 | 7.240E-14 | 7.295E-14 | 7.357E-14 | 7.425E-14 | 7.479E-14 | 7.491E-14 | 7.578E-14 | 7.664E-14 |
| rn218 | 2.656E-12 | 2.493E-12 | 2.159E-12 | 1.231E-12 | 2.522E-13 | 3.437E-14 | 1.467E-17 | 1.098E-17 | 1.583E-17 | 2.191E-17 | 2.728E-17 | 2.930E-17 | 3.814E-17 | 4.857E-17 |
| rn219 | 7.362E-10 | 7.361E-10 | 7.370E-10 | 7.510E-10 | 8.175E-10 | 9.077E-10 | 1.354E-09 | 1.902E-09 | 2.455E-09 | 3.013E-09 | 3.431E-09 | 3.504E-09 | 4.138E-09 | 4.705E-09 |
| rn220 | 3.842E-05 | 3.842E-05 | 3.863E-05 | 4.029E-05 | 4.638E-05 | 5.334E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| rn222 | 2.120E-11 | 2.121E-11 | 2.129E-11 | 2.180E-11 | 2.361E-11 | 2.575E-11 | 3.605E-11 | 5.490E-11 | 7.915E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| fr221 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| fr223 | 1.066E-11 | 1.071E-11 | 1.080E-11 | 1.116E-11 | 1.216E-11 | 1.341E-11 | 1.867E-11 | 2.621E-11 | 3.382E-11 | 4.151E-11 | 4.722E-11 | 4.922E-11 | 5.699E-11 | 6.480E-11 |
| ra222 | 2.656E-12 | 2.493E-12 | 2.159E-12 | 1.231E-12 | 2.522E-13 | 3.437E-14 | 7.460E-18 | 3.943E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 7.362E-10 | 7.361E-10 | 7.370E-10 | 7.510E-10 | 8.175E-10 | 9.077E-10 | 1.354E-09 | 1.902E-09 | 2.455E-09 | 3.013E-09 | 3.431E-09 | 3.504E-09 | 4.138E-09 | 4.705E-09 |
| ra224 | 3.842E-05 | 3.842E-05 | 3.863E-05 | 4.029E-05 | 4.638E-05 | 5.334E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| ra225 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.071E-09 | 1.083E-09 | 1.095E-09 |
| ra226 | 2.120E-11 | 2.126E-11 | 2.141E-11 | 2.197E-11 | 2.361E-11 | 2.575E-11 | 3.605E-11 | 5.490E-11 | 7.915E-11 | 1.095E-10 | 1.364E-10 | 1.465E-10 | 1.907E-10 | 2.428E-10 |
| ra228 | 1.303E-13 | 1.304E-13 | 1.307E-13 | 1.319E-13 | 1.351E-13 | 1.391E-13 | 1.554E-13 | 1.778E-13 | 1.993E-13 | 2.200E-13 | 2.350E-13 | 2.400E-13 | 2.593E-13 | 2.781E-13 |
| ac225 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.071E-09 | 1.083E-09 | 1.095E-09 |
| ac226 | 4.908E-17 | 4.532E-17 | 3.789E-17 | 1.887E-17 | 2.679E-18 | 2.358E-19 | 9.140E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 7.728E-10 | 7.757E-10 | 7.824E-10 | 8.083E-10 | 8.810E-10 | 9.716E-10 | 1.352E-09 | 1.899E-09 | 2.451E-09 | 3.008E-09 | 3.424E-09 | 3.567E-09 | 4.130E-09 | 4.696E-09 |
| ac228 | 1.303E-13 | 1.304E-13 | 1.308E-13 | 1.319E-13 | 1.351E-13 | 1.391E-13 | 1.554E-13 | 1.778E-13 | 1.993E-13 | 2.201E-13 | 2.350E-13 | 2.400E-13 | 2.593E-13 | 2.781E-13 |
| th226 | 2.656E-12 | 2.493E-12 | 2.159E-12 | 1.231E-12 | 2.522E-13 | 3.437E-14 | 7.460E-18 | 3.942E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 7.230E-10 | 7.259E-10 | 7.324E-10 | 7.579E-10 | 8.295E-10 | 9.188E-10 | 1.335E-09 | 1.876E-09 | 2.421E-09 | 2.972E-09 | 3.384E-09 | 3.478E-09 | 4.081E-09 | 4.640E-09 |
| th228 | 3.831E-05 | 3.852E-05 | 3.899E-05 | 4.084E-05 | 4.617E-05 | 5.312E-05 | 8.470E-05 | 1.331E-04 | 1.804E-04 | 2.239E-04 | 2.528E-04 | 2.620E-04 | 2.944E-04 | 3.214E-04 |
| th229 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.071E-09 | 1.083E-09 | 1.095E-09 |
| th230 | 2.686E-08 | 2.691E-08 | 2.703E-08 | 2.749E-08 | 2.880E-08 | 3.046E-08 | 3.782E-08 | 4.959E-08 | 6.282E-08 | 7.754E-08 | 8.943E-08 | 9.367E-08 | 1.112E-07 | 1.302E-07 |
| th231 | 3.173E-05 | 3.173E-05 | 3.173E-05 | 3.173E-05 | 3.173E-05 | 3.174E-05 | 3.175E-05 | 3.176E-05 | 3.178E-05 | 3.179E-05 | 3.180E-05 | 3.181E-05 | 3.182E-05 | 3.184E-05 |
| th232 | 3.306E-13 | 3.307E-13 | 3.309E-13 | 3.315E-13 | 3.334E-13 | 3.358E-13 | 3.457E-13 | 3.599E-13 | 3.742E-13 | 3.886E-13 | 3.993E-13 | 4.030E-13 | 4.174E-13 | 4.319E-13 |
| th234 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.671E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.669E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 |

1

5 more years for cooling used fuel material actinides page 16

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 1.426E-12 | 1.317E-12 | 1.101E-12 | 5.481E-13 | 7.783E-14 | 6.852E-15 | 2.655E-19 | 1.286E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 1.777E-08 | 1.777E-08 | 1.778E-08 | 1.782E-08 | 1.791E-08 | 1.803E-08 | 1.850E-08 | 1.917E-08 | 1.984E-08 | 2.052E-08 | 2.102E-08 | 2.120E-08 | 2.187E-08 | 2.255E-08 |
| pa232 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 | 1.064E-10 |
| pa233 | 1.928E-03 | 1.928E-03 | 1.928E-03 | 1.928E-03 | 1.929E-03 | 1.931E-03 | 1.937E-03 | 1.952E-03 | 1.969E-03 | 1.990E-03 | 2.005E-03 | 2.012E-03 | 2.042E-03 | 2.073E-03 |
| pa234m | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.671E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 | 4.669E-03 | 4.668E-03 | 4.668E-03 | 4.668E-03 |
| pa234 | 7.468E-06 | 7.464E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 | 7.468E-06 |
| u230 | 2.654E-12 | 2.490E-12 | 2.156E-12 | 1.230E-12 | 2.520E-13 | 3.433E-14 | 7.452E-18 | 3.888E-23 | 2.029E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 1.431E-04 | 1.435E-04 | 1.445E-04 | 1.481E-04 | 1.582E-04 | 1.702E-04 | 2.153E-04 | 2.670E-04 | 3.066E-04 | 3.367E-04 | 3.542E-04 | 3.594E-04 | 3.762E-04 | 3.884E-04 |
| u233 | 7.073E-08 | 7.078E-08 | 7.088E-08 | 7.128E-08 | 7.241E-08 | 7.381E-08 | 7.969E-08 | 8.905E-08 | 9.848E-08 | 1.080E-07 | 1.145E-07 | 1.167E-07 | 1.265E-07 | 1.364E-07 |
| u234 | 1.039E-03 | 1.040E-03 | 1.041

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pu236 | 7.850E-03 | 7.839E-03 | 7.816E-03 | 7.726E-03 | 7.478E-03 | 7.181E-03 | 6.063E-03 | 4.758E-03 | 3.734E-03 | 2.928E-03 | 2.444E-03 | 2.298E-03 | 1.803E-03 | 1.415E-03 | |
| pu237 | 3.247E-03 | 3.150E-03 | 2.942E-03 | 2.255E-03 | 1.072E-03 | 4.243E-04 | 8.826E-06 | 3.454E-08 | 1.352E-10 | 5.209E-13 | 8.370E-15 | 2.039E-15 | 7.977E-18 | 3.122E-20 | |
| pu238 | 5.121E-01 | 5.126E-01 | 5.138E-01 | 5.179E-01 | 5.279E-01 | 5.376E-01 | 5.579E-01 | 5.628E-01 | 5.604E-01 | 5.565E-01 | 5.533E-01 | 5.522E-01 | 5.479E-01 | 5.437E-01 | |
| pu239 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | 1.499E+01 | |
| pu240 | 3.424E+01 | 3.424E+01 | 3.424E+01 | 3.424E+01 | 3.424E+01 | 3.425E+01 | 3.426E+01 | 3.427E+01 | 3.429E+01 | 3.430E+01 | 3.431E+01 | 3.431E+01 | 3.432E+01 | 3.434E+01 | |
| pu241 | 8.223E+03 | 8.220E+03 | 8.216E+03 | 8.196E+03 | 8.143E+03 | 8.078E+03 | 7.809E+03 | 7.439E+03 | 7.087E+03 | 6.751E+03 | 6.511E+03 | 6.431E+03 | 6.127E+03 | 5.837E+03 | |
| pu242 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | 9.086E-02 | |
| pu243 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | |
| pu244 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | 3.037E-08 | |
| pu246 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.267E-14 | 5.267E-14 | 5.266E-14 | 5.266E-14 | 5.266E-14 | 5.265E-14 | |
| am241 | 2.151E+01 | 2.158E+01 | 2.174E+01 | 2.237E+01 | 2.412E+01 | 2.629E+01 | 3.515E+01 | 4.728E+01 | 5.882E+01 | 6.982E+01 | 7.765E+01 | 8.025E+01 | 9.017E+01 | 9.959E+01 | |
| am242m | 6.934E-01 | 6.933E-01 | 6.933E-01 | 6.931E-01 | 6.927E-01 | 6.921E-01 | 6.897E-01 | 6.864E-01 | 6.830E-01 | 6.796E-01 | 6.772E-01 | 6.763E-01 | 6.730E-01 | 6.697E-01 | |
| am242 | 6.902E-01 | 6.902E-01 | 6.901E-01 | 6.900E-01 | 6.895E-01 | 6.889E-01 | 6.866E-01 | 6.832E-01 | 6.799E-01 | 6.765E-01 | 6.741E-01 | 6.732E-01 | 6.699E-01 | 6.666E-01 | |
| am243 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.164E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | |
| am244 | 5.650E-11 | 5.647E-11 | 5.645E-11 | 5.621E-11 | 5.563E-11 | 5.492E-11 | 5.205E-11 | 4.819E-11 | 4.462E-11 | 4.130E-11 | 3.900E-11 | 3.824E-11 | 3.541E-11 | 3.278E-11 | |
| am245 | 3.139E-09 | 3.126E-09 | 3.096E-09 | 2.980E-09 | 2.680E-09 | 2.349E-09 | 1.352E-09 | 6.131E-10 | 2.781E-10 | 1.259E-10 | 6.982E-11 | 5.708E-11 | 2.589E-11 | 1.174E-11 | |
| am246m | 5.268E-14 | 5.276E-14 | 5.275E-14 | 5.271E-14 | 5.269E-14 | 5.268E-14 | 5.268E-14 | 5.268E-14 | 5.267E-14 | 5.267E-14 | 5.266E-14 | 5.266E-14 | 5.266E-14 | 5.265E-14 | |
| cm240 | 1.108E-08 | 1.052E-08 | 9.375E-09 | 5.982E-09 | 1.700E-09 | 3.552E-10 | 2.097E-13 | 4.343E-17 | 3.701E-21 | 3.074E-25 | 2.851E-28 | 6.619E-29 | 0.000E+00 | 0.000E+00 | |
| cm241 | 1.161E-05 | 1.113E-05 | 1.012E-05 | 6.992E-06 | 2.482E-06 | 6.840E-07 | 3.124E-09 | 1.396E-12 | 6.236E-16 | 2.728E-19 | 8.698E-22 | 1.219E-22 | 5.445E-26 | 2.433E-29 | |
| cm242 | 1.221E+03 | 1.211E+03 | 1.188E+03 | 1.103E+03 | 8.955E+02 | 6.910E+02 | 2.339E+02 | 4.996E+01 | 1.102E+01 | 2.764E+00 | 1.251E+00 | 1.024E+00 | 6.536E-01 | 5.731E-01 | |
| cm243 | 1.426E+00 | 1.425E+00 | 1.425E+00 | 1.423E+00 | 1.419E+00 | 1.413E+00 | 1.390E+00 | 1.357E+00 | 1.325E+00 | 1.294E+00 | 1.271E+00 | 1.264E+00 | 1.234E+00 | 1.205E+00 | |
| cm244 | 1.822E+02 | 1.821E+02 | 1.821E+02 | 1.817E+02 | 1.808E+02 | 1.796E+02 | 1.749E+02 | 1.683E+02 | 1.620E+02 | 1.559E+02 | 1.515E+02 | 1.501E+02 | 1.444E+02 | 1.390E+02 | |
| cm245 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.669E-02 | 3.668E-02 | 3.668E-02 | 3.668E-02 | 3.668E-02 | 3.667E-02 | 3.667E-02 | |
| cm246 | 4.346E-03 | 4.346E-03 | 4.346E-03 | 4.346E-03 | 4.346E-03 | 4.346E-03 | 4.346E-03 | 4.345E-03 | 4.344E-03 | 4.344E-03 | 4.343E-03 | 4.343E-03 | 4.342E-03 | 4.342E-03 | |
| cm247 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | 2.008E-08 | |
| cm248 | 5.737E-08 | 5.737E-08 | 5.737E-08 | 5.737E-08 | 5.737E-08 | 5.737E-08 | 5.738E-08 | 5.739E-08 | 5.739E-08 | 5.739E-08 | 5.740E-08 | 5.740E-08 | 5.740E-08 | 5.740E-08 | |
| cm249 | 1.282E-13 | 1.186E-13 | 9.953E-14 | 5.037E-14 | 7.480E-15 | 6.964E-16 | 3.410E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cm250 | 2.927E-13 | 2.927E-13 | 2.927E-13 | 2.927E-13 | 2.927E-13 | 2.927E-13 | 2.927E-13 | 2.926E-13 | 2.926E-13 | 2.926E-13 | 2.926E-13 | 2.926E-13 | 2.925E-13 | 2.925E-13 | |
| bk247 | 8.883E-15 | 8.883E-15 | 8.883E-15 | 8.883E-15 | 8.883E-15 | 8.882E-15 | 8.879E-15 | 8.874E-15 | 8.870E-15 | 8.865E-15 | 8.862E-15 | 8.861E-15 | 8.856E-15 | 8.852E-15 | |
| bk248 | 5.649E-11 | 5.647E-11 | 5.641E-11 | 5.620E-11 | 5.563E-11 | 5.492E-11 | 5.204E-11 | 4.818E-11 | 4.461E-11 | 4.130E-11 | 3.899E-11 | 3.823E-11 | 3.540E-11 | 3.278E-11 | |

1

5 more years for cooling used fuel material actinides page 17

0 nuclide radioactivity, curies

basis =~15.1 kgHMM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 2.165E-04 | 2.155E-04 | 2.134E-04 | 2.055E-04 | 1.848E-04 | 1.619E-04 | 9.320E-05 | 4.227E-05 | 1.917E-05 | 8.678E-06 | 4.814E-06 | 3.936E-06 | 1.785E-06 | 8.097E-07 |
| bk250 | 1.703E-10 | 1.695E-10 | 1.675E-10 | 1.603E-10 | 1.418E-10 | 1.216E-10 | 6.406E-11 | 2.560E-11 | 1.024E-11 | 4.095E-12 | 2.078E-12 | 1.650E-12 | 6.730E-13 | 2.829E-13 |
| bk251 | 2.197E-13 | 2.122E-13 | 1.962E-13 | 1.446E-13 | 6.161E-14 | 2.129E-14 | 2.509E-16 | 4.353E-19 | 7.552E-22 | 1.288E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 3.748E-10 | 3.733E-10 | 3.698E-10 | 3.566E-10 | 3.221E-10 | 2.837E-10 | 1.670E-10 | 7.821E-11 | 3.662E-11 | 1.712E-11 | 9.725E-12 | 8.016E-12 | 3.754E-12 | 1.758E-12 |
| cf249 | 5.206E-07 | 5.229E-07 | 5.281E-07 | 5.479E-07 | 5.994E-07 | 6.563E-07 | 8.268E-07 | 9.521E-07 | 1.008E-06 | 1.032E-06 | 1.040E-06 | 1.042E-06 | 1.045E-06 | 1.045E-06 |
| cf250 | 6.992E-06 | 6.990E-06 | 6.985E-06 | 6.967E-06 | 6.918E-06 | 6.857E-06 | 6.608E-06 | 6.267E-06 | 5.944E-06 | 5.636E-06 | 5.418E-06 | 5.346E-06 | 5.070E-06 | 4.808E-06 |
| cf251 | 5.005E-08 | 5.005E-08 | 5.005E-08 | 5.005E-08 | 5.005E-08 | 5.004E-08 | 5.001E-08 | 4.998E-08 | 4.994E-08 | 4.990E-08 | 4.987E-08 | 4.986E-08 | 4.982E-08 | 4.978E-08 |
| cf252 | 5.253E-06 | 5.246E-06 | 5.229E-06 | 5.163E-06 | 4.985E-06 | 4.772E-06 | 3.974E-06 | 3.058E-06 | 2.354E-06 | 1.810E-06 | 1.489E-06 | 1.393E-06 | 1.072E-06 | 8.250E-07 |
| cf253 | 4.124E-11 | 3.815E-11 | 3.202E-11 | 1.621E-11 | 2.407E-12 | 2.241E-13 | 1.097E-17 | 7.429E-24 | 5.029E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 3.146E-10 | 3.074E-10 | 2.920E-10 | 2.389E-10 | 1.363E-10 | 6.776E-11 | 3.649E-12 | 5.572E-14 | 8.509E-16 | 1.284E-17 | 5.693E-19 | 1.961E-19 | 2.995E-21 | 4.574E-23 |
| es252 | 2.747E-14 | 2.739E-14 | 2.721E-14 | 2.652E-14 | 2.468E-14 | 2.256E-14 | 1.551E-14 | 9.072E-15 | 5.306E-15 | 3.099E-15 | 2.078E-15 | 1.812E-15 | 1.060E-15 | 6.199E-16 |
| es253 | 7.332E-10 | 6.878E-10 | 5.955E-10 | 3.393E-10 | 6.908E-11 | 9.295E-12 | 1.846E-15 | 8.179E-21 | 3.508E-26 | 1.454E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 1.702E-10 | 1.693E-10 | 1.674E-10 | 1.602E-10 | 1.417E-10 | 1.215E-10 | 6.400E-11 | 2.557E-11 | 1.021E-11 | 4.069E-12 | 2.054E-12 | 1.625E-12 | 6.493E-13 | 2.594E-13 |
| es255 | 2.743E-12 | 2.649E-12 | 2.450E-12 | 1.806E-12 | 7.694E-13 | 2.659E-13 | 3.134E-15 | 5.436E-18 | 9.431E-21 | 1.608E-23 | 1.409E-25 | 2.790E-26 | 4.840E-29 | 8.397E-32 |
| total | 9.754E+03 | 9.741E+03 | 9.714E+03 | 9.610E+03 | 9.351E+03 | 9.083E+03 | 8.363E+03 | 7.816E+03 | 7.430E+03 | 7.090E+03 | 6.852E+03 | 6.773E+03 | 6.472E+03 | 6.185E+03 |

1

5 more years for cooling used fuel material actinides page 18

0 element radioactivity, curies

basis =~15.1 kgHMM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg | 1.162E-18 | 1.162E-18 | 1.162E-18 | 1.161E-18 | 1.158E-18 | 1.154E-18 | 1.142E-18 | 1.133E-18 | 1.137E-18 | 1.157E-18 | 1.184E-18 | 1.196E-18 | 1.257E-18 | 1.344E-18 |
| tl | 1.381E-05 | 1.387E-05 | 1.390E-05 | 1.448E-05 | 1.667E-05 | 1.917E-05 | 3.052E-05 | 4.793E-05 | 6.501E-05 | 8.071E-05 | 9.120E-05 | 9.461E-05 | 1.062E-04 | 1.159E-04 |
| pb | 3.842E-05 | 3.840E-05 | 3.867E-05 | 4.029E-05 | 4.639E-05 | 5.335E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| bi | 3.842E-05 | 3.858E-05 | 3.867E-05 | 4.029E-05 | 4.639E-05 | 5.335E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| po | 6.303E-05 | 6.314E-05 | 6.341E-05 | 6.610E-05 | 7.610E-05 | 8.752E-05 | 1.393E-04 | 2.188E-04 | 2.968E-04 | 3.684E-04 | 4.163E-04 | 4.318E-04 | 4.846E-04 | 5.290E-04 |
| at | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.042E-09 | 1.051E-09 | 1.061E-09 | 1.068E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| rn | 3.842E-05 | 3.842E-05 | 3.864E-05 | 4.029E-05 | 4.638E-05 | 5.335E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| fr | 1.039E-09 | 1.040E-09 | 1.039E-09 | 1.039E-09 | 1.040E-09 | 1.042E-09 | 1.053E-09 | 1.068E-09 | 1.085E-09 | 1.102E-09 | 1.116E-09 | 1.119E-09 | 1.140E-09 | 1.160E-09 |
| ra | 3.842E-05 | 3.842E-05 | 3.863E-05 | 4.029E-05 | 4.639E-05 | 5.335E-05 | 8.492E-05 | 1.334E-04 | 1.809E-04 | 2.246E-04 | 2.537E-04 | 2.632E-04 | 2.954E-04 | 3.224E-04 |
| ac | 1.802E-09 | 1.804E-09 | 1.811E-09 | 1.836E-09 | 1.909E-09 | 2.000E-09 | 2.386E-09 | 2.942E-09 | 3.502E-09 | 4.069E-09 | 4.493E-09 | 4.637E-09 | 5.212E-09 | 5.791E-09 |
| th | 4.738E-03 | 4.738E-03 | 4.738E-03 | 4.740E-03 | 4.745E-03 | 4.752E-03 | 4.787E-03 | 4.833E-03 | 4.880E-03 | 4.923E-03 | 4.954E-03 | 4.962E-03 | 4.994E-03 | 5.021E-03 |
| pa | 6.603E-03 | 6.603E-03 | 6.603E-03 | 6.604E-03 | 6.604E-03 | 6.606E-03 | 6.615E-03 | 6.627E-03 | 6.644E-03 | 6.665E-03 | 6.682E-03 | 6.687E-03 | 6.717E-03 | 6.748E-03 |
| u | 2.079E-01 | 2.078E-01 | 2.077E-01 | 2.073E-01 | 2.060E-01 | 2.044E-01 | 1.980E-01 | 1.891E-01 | 1.807E-01 | 1.726E-01 | 1.669E-01 | 1.650E-01 | 1.577E-01 | 1.507E-01 |
| np | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.169E+00 | 1.168E+00 | 1.168E+00 |
| pu | 8.323E+03 | 8.321E+03 | 8.316E+03 | 8.298E+03 | 8.245E+03 | 8.181E+03 | 7.914E+03 | 7.545E+03 | 7.193E+03 | 6.856E+03 | 6.616E+03 | 6.536E+03 | 6.231E+03 | 5.941E+03 |
| am | 2.406E+01 | 2.413E+01 | 2.429E+01 | 2.492E+01 | 2.667E+01 | 2.883E+01 | 3.768E+01 | 4.981E+01 | 6.135E+01 | 7.234E+01 | 8.016E+01 | 8.277E+01 | 9.268E+01 | 1.021E+02 |
| cm | 1.405E+03 | 1.395E+03 | 1.372E+03 | 1.286E+03 | 1.078E+03 | 8.721E+02 | 4.102E+02 | 2.197E+02 | 1.744E+02 | 1.600E+02 | 1.541E+02 | 1.524E+02 | 1.464E+02 | 1.408E+02 |
| bk | 2.165E-04 | 2.155E-04 | 2.134E-04 | 2.055E-04 | 1.848E-04 | 1.619E-04 | 9.320E-05 | 4.227E-05 | 1.917E-05 | 8.678E-06 | 4.814E-06 | 3.936E-06 | 1.785E-06 | 8.097E-07 |
| cf | 1.282E-05 | 1.281E-05 | 1.279E-05 | 1.273E-05 | 1.255E-05 | 1.234E-05 | 1.146E-05 | 1.033E-05 | 9.355E-06 | 8.528E-06 | 7.997E-06 | 7.830E-06 | 7.237E-06 | 6.729E-06 |
| es | 9.062E-10 | 8.598E-10 | 7.654E-10 | 5.013E-10 | 2.115E-10 | 1.311E-10 | 6.402E-11 | 2.558E-11 | 1.022E-11 | 4.072E-12 | 2.056E-12 | 1.627E-12 | 6.503E-13 | 2.600E-13 |
| totals | 9.754E+03 | 9.741E+03 | 9.714E+03 | 9.610E+03 | 9.351E+03 | 9.083E+03 | 8.363E+03 | 7.816E+03 | 7.430E+03 | 7.090E+03 | 6.852E+03 | 6.773E+03 | 6.472E+03 | 6.185E+03 |

1

5 more years for cooling used fuel material actinides page 19

0 nuclide thermal power, watts

basis =~15.1 kgHMM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl206 | 2.623E-19 | 2.623E-19 | 2.622E-19 | 2.619E-19 | 2.612E-19 | 2.605E-19 | 2.577E-19 | 2.557E-19 | 2.566E-19 | 2.610E-19 | 2.671E-19 | 2.697E-19 | 2.835E-19 | 3.032E-19 |
| tl207 | 2.150E-12 | 2.150E-12 | 2.152E-12 | 2.193E-12 | 2.287E-12 | 2.651E-12 | 3.954E-12 | 5.555E-12 | 7.149E-12 | 8.799E-12 | 1.002E-11 | 1.038E-11 | 1.208E-11 | 1.374E-11 |
| tl208 | 3.255E-07 | 3.268E-07 | 3.276E-07 | 3.413E-07 | 3.930E-07 | 4.519E-07 | 7.194E-07 | 1.130E-06 | 1.532E-06 | 1.903E-06 | 2.150E-06 | 2.230E-06 | 2.503E-06 | 2.732E-06 |
| tl209 | 3.789E-13 | 3.790E-13 | 3.788E-13 | 3.785E-13 | 3.785E-13 | 3.789E-13 | 3.810E-13 | 3.839E-13 | 3.871E-13 | 3.907E-13 | 3.935E-13 | 3.942E-13 | 3.988E-13 | 4.033E-13 |
| tl210 | 1.001E-16 | 1.002E-16 | 1.006E-16 | 1.030E-16 | 1.115E-16 | 1.216E-16 | 1.703E-16 | 2.593E-16 | 3.739E-16 | 5.173E-16 | 6.443E-16 | 6.919E-16 | 9.008E-16 | 1.147E-15 |
| pb209 | 1.203E-12 | 1.204E-12 | 1.203E-12 | 1.202E-12 | 1.202E-12 | 1.203E-12 | 1.210E-12 | 1.219E-12 | 1.229E-12 | 1.241E-12 | 1.250E-12 | 1.252E-12 | 1.266E-12 | 1.281E-12 |
| pb210 | 1.610E-14 | 1.610E-14 | 1.610E-14 | 1.608E-14 | 1.604E-14 | 1.599E-14 | 1.582E-14 | 1.570E-14 | 1.575E-14 | 1.602E-14 | 1.640E-14 | 1.656E-14 | 1.741E-14 | 1.862E-14 |
| pb211 | 2.239E-12 | 2.239E-12 | 2.242E-12 | 2.284E-12 | 2.487E-12 | 2.761E-12 | 4.119E-12 | 5.787E-12 | 7.468E-12 | 9.166E-12 | 1.044E-11 | 1.066E-11 | 1.259E-11 | 1.431E-11 |
| pb212 | 7.161E-08 | 7.158E-08 | 7.207E-08 | 7.509E-08 | 8.645E-08 | 9.943E-08 | 1.583E-07 | 2.486E-07 | 3.372E-07 | 4.186E-07 | 4.729E-07 | 4.906E-07 | 5.506E-07 | 6.010E-07 |
| pb214 | 6.607E-14 | 6.613E-14 | 6.635E-14 | 6.793E-14 | 7.358E-14 | 8.025E-14 | 1.123E-13 | 1.711E-13 | 2.467E-13 | 3.413E-13 | 4.251E-13 | 4.565E-13 | 5.943E-13 | 7.568E-13 |
| bi207 | 7.770E-21 | 7.769E-21 | 7.767E-21 | 7.759E-21 | 7.736E-21 | 7.708E-21 | 7.590E-21 | 7.425E-21 | 7.264E-21 | 7.106E-21 | 6.991E-21 | 6.952E-21 | 6.801E-21 | 6.653E-21 |
| bi210 | 1.412E-13 | 1.412E-13 | 1.412E-13 | 1.410E-13 | 1.407E-13 | 1.403E-13 | 1.388E-13 | 1.377E-13 | 1.382E-13 | 1.406E-13 | 1.438E-13 | 1.453E-13 | 1.527E-13 | 1.633E-13 |
| bi211 | 2.937E-11 | 2.936E-11 | 2.940E-11 | 2.996E-11 | 3.261E-11 | 3.621E-11 | 5.402E-11 | 7.589E-11 | 9.794E-11 | 1.202E-10 | 1.369E-10 | 1.398E-10 | 1.651E-10 | 1.877E-10 |
| bi212 | 6.433E-07 | 6.460E-07 | 6.476E-07 | 6.747E-07 | 7.768E-07 | 8.933E-07 | 1.422E-06 | 2.233E-06 | 3.029E-06 | 3.761E-06 | 4.249E-06 | 4.408E-06 | 4.947E-06 | 5.399E-06 |
| bi213 | 4.223E-12 | 4.224E-12 | 4.222E-12 | 4.218E-12 | 4.218E-12 | 4.223E-12 | 4.246E-12 | 4.278E-12 | 4.314E-12 | 4.354E-12 | 4.386E-12 | 4.393E-12 | 4.444E-12 | 4.495E-12 |
| bi214 | 2.686E-13 | 2.688E-13 | 2.698E-13 | 2.762E-13 | 2.991E-13 | 3.262E-13 | 4.567E-13 | 6.956E-13 | 1.003E-12 | 1.388E-12 | 1.728E-12 | 1.856E-12 | 2.416E-12 | 3.077E-12 |
| po209 | 1.149E-19 | 1.149E-19 | 1.149E-19 | 1.148E-19 | 1.147E-19 | 1.147E-19 | 1.141E-19 | 1.133E-19 | 1.126E-19 | 1.118E-19 | 1.112E-19 | 1.111E-19 | 1.103E-19 | 1.096E-19 |
| po210 | 1.670E-12 | 1.673E-12 | 1.679E-12 | 1.703E-12 | 1.758E-12 | 1.802E-12 | 1.878E-12 | 1.889E-12 | 1.890E-12 | 1.909E-12 | 1.940E-12 | 1.955E-12 | 2.038E-12 | 2.160E-12 |
| po211 | 9.144E-14 | 9.142E-14 | 9.154E-14 | 9.328E-14 | 1.015E-13 | 1.127E-13 | 1.682E-13 | 2.363E-13 | 3.049E-13 | 3.742E-13 | 4.262E-13 | 4.353E-13 | 5.139E-13 | 5.844E-13 |
| po212 | 1.306E-06 | 1.311E-06 | 1.314E-06 | 1.369E-06 | 1.576E-06 | 1.813E-06 | 2.886E-06 | 4.533E-06 | 6.148E-06 | 7.633E-06 | 8.624E-06 | 8.946E-06 | 1.004E-05 | 1.096E-05 |
| po213 | 5.089E-11 | 5.090E-11 | 5.088E-11 | 5.084E-11 | 5.084E-11 | 5.089E-11 | 5.117E-11 | 5.156E-11 | 5.199E-11 | 5.247E-11 | 5.286E-11 | 5.294E-11 | 5.356E-11 | 5.417E-11 |
| po214 | 1.107E-12 | 1.100E-12 | 1.088E-12 | 1.069E-12 | 1.107E-12 | 1.197E-12 | 1.673E-12 | 2.548E-12 | 3.673E-12 | 5.083E-12 | 6.330E-12 | 6.798E-12 | 8.850E-12 | 1.127E-11 |
| po215 | 3.284E-11 | 3.283E-11 | 3.288E-11 | 3.350E-11 | 3.647E-11 | 4.049E-11 | 6.041E-11 | 8.486E-11 | 1.095E-10 | 1.344E-10 | 1.531E-10 | 1.563E-10 | 1.846E-10 | 2.099E-10 |
| po216 | 1.572E-06 | 1.572E-06 | 1.581E-06 | 1.649E-06 | 1.898E-06 | 2.183E-06 | 3.475E-06 | 5.458E-06 | 7.408E-06 | 9.190E-06 | 1.038E-05 | 1.077E-05 | 1.219E-05 | 1.319E-05 |
| po218 | 7.680E-13 | 7.687E-13 | 7.713E-13 | 7.896E-13 | 8.553E-13 | 9.328E-13 | 1.306E-12 | 1.989E-12 | 2.867E-12 | 3.968E-12 | 4.941E-12 | 5.306E-12 | 6.909E-12 | 8.797E-12 |
| at217 | 4.387E-11 | 4.388E-11 | 4.386E-11 | 4.382E-11 | 4.382E-11 | 4.386E-11 | 4.411E-11 | 4.444E-11 | 4.482E-11 | 4.523E-11 | 4.556E-11 | 4.563E-11 | 4.616E-11 | 4.669E-11 |
| at218 | 1.726E-16 | 1.727E-16 | 1.733E-16 | 1.774E-16 | 1.922E-16 | 2.096E-16 | 2.934E-16 | 4.469E-16 | 6.443E-16 | 8.915E-16 | 1.110E-15 | 1.192E-15 | 1.552E-15 | 1.977E-15 |
| rn217 | 3.365E-15 | 3.366E-15 | 3.365E-15 | 3.362E-15 | 3.361E-15 | 3.365E-15 | 3.383E-15 | 3.409E-15 | 3.438E-15 | 3.470E-15 | 3.495E-15 | 3.501E-15 | 3.541E-15 | 3.582E-15 |
| rn218 | 1.143E-13 | 1.073E-13 | 9.289E-14 | 5.298E-14 | 1.085E-14 | 1.479E-15 | 6.313E-19 | 4.725E-19 | 6.812E-19 | 9.427E-19 | 1.174E-18 | 1.261E-18 | 1.641E-18 | 2.090E-18 |
| rn219 | 3.030E-11 | 3.029E-11 | 3.033E-11 | 3.091E-11 | 3.364E-11 | 3.735E-11 | 5.573E-11 | 7.829E-11 | 1.010E-10 | 1.240E-10 | 1.412E-10 | 1.442E-10 | 1.703E-10 | 1.936E-10 |
| rn220 | 1.458E-06 | 1.458E-06 | 1.466E-06 | 1.529E-06 | 1.760E-06 | 2.025E-06 | 3.223E-06 | 5.061E-06 | 6.865E-06 | 8.523E-06 | 9.630E-06 | 9.990E-06 | 1.121E-05 | 1.224E-05 |
| rn222 | 7.023E-13 | 7.026E-13 | 7.051E-13 | 7.220E-13 | 7.821E-13 | 8.530E-13 | 1.194E-12 | 1.819E-12 | 2.622E-12 | 3.628E-12 | 4.518E-12 | 4.852E-12 | 6.317E-12 | 8.044E-12 |
| fr221 | 3.969E-11 | 3.969E-11 | 3.968E-11 | 3.964E-11 | 3.964E-11 | 3.968E-11 | 3.990E-11 | 4.021E-11 | 4.054E-11 | 4.092E-11 | 4.122E-11 | 4.128E-11 | 4.176E-11 | 4.224E-11 |
| fr223 | 2.655E-14 | 2.665E-14 | 2.688E-14 | 2.777E-14 | 3.027E-14 | 3.338E-14 | 4.644E-14 | 6.526E-14 | 8.421E-14 | 1.033E-13 | 1.176E-13 | 1.226E-13 | 1.419E-13 | 1.613E-13 |
| ra222 | 1.051E-13 | 9.862E-14 | 8.541E-14 | 4.871E-14 | 9.978E-15 | 1.360E-15 | 2.952E-19 | 1.560E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 2.604E-11 | 2.604E-11 | 2.607E-11 | 2.657E-11 | 2.892E-11 | 3.211E-11 | 4.791E-11 | 6.730E-11 | 8.686E-11 | 1.066E-10 | 1.214E-10 | 1.240E-10 | 1.464E-10 | 1.665E-10 |
| ra224 | 1.318E-06 | 1.318E-06 | 1.325E-06 | 1.382E-06 | 1.591E-06 | 1.830E-06 | 2.913E-06 | 4.575E-06 | 6.205E-06 | 7.704E-06 | 8.704E-06 | 9.030E-06 | 1.013E-05 | 1.106E-05 |
| ra225 | 7.211E-13 | 7.211E-13 | 7.210E-13 | 7.209E-13 | 7.213E-13 | 7.221E-13 | 7.259E-13 | 7.314E-13 | 7.376E-13 | 7.444E-13 | 7.498E-13 | 7.513E-13 | 7.598E-13 | 7.684E-13 |
| ra226 | 6.120E-13 | 6.138E-13 | 6.180E-13 | 6.343E-13 | 6.815E-13 | 7.433E-13 | 1.049E-12 | 1.585E-12 | 2.285E-12 | 3.162E-12 | 3.937E-12 | 4.229E-12 | 5.505E-12 | 7.010E-12 |
| ra228 | 8.273E-18 | 8.282E-18 | 8.301E-18 | 8.374E-18 | 8.578E-18 | 8.831E-18 | 9.865E-18 | 1.129E-17 | 1.265E-17 | 1.397E-17 | 1.492E-17 | 1.524E-17 | 1.646E-17 | 1.766E-17 |
| ac225 | 3.618E-11 | 3.617E-11 | 3.616E-11 | 3.613E-11 | 3.614E-11 | 3.617E-11 | 3.637E-11 | 3.665E-11 | 3.696E-11 | 3.730E-11 | 3.757E-11 | 3.763E-11 | 3.807E-11 | 3.850E-11 |
| ac226 | 1.227E-19 | 1.133E-19 | 9.468E-20 | 4.715E-20 | 6.695E-21 | 5.894E-22 | 2.284E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 3.930E-13 | 3.945E-13 | 3.979E-13 | 4.111E-13 | 4.480E-13 | 4.941E-13 | 6.874E-13 | 9.658E-13 | 1.246E-12 | 1.529E-12 | 1.741E-12 | 1.814E-12 | 2.100E-12 | 2.388E-12 |
| ac228 | 1.007E-15 | 1.007E-15 | 1.010E-15 | 1.019E-15 | 1.044E-15 | 1.074E-15 | 1.200E-15 | 1.373E-15 | 1.540E-15 | 1.700E-15 | 1.815E-15 | 1.854E-15 | 2.003E-15 | 2.148E-15 |
| th226 | 1.015E-13 | 9.526E-14 | 8.249E-14 | 4.705E-14 | 9.638E-15 | 1.313E-15 | 2.851E-19 | 1.507E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 2.668E-11 | 2.679E-11 | 2.703E-11 | 2.797E-11 | 3.061E-11 | 3.390E-11 | 4.928E-11 | 6.923E-11 | 8.935E-11 | 1.097E-10 | 1.249E-10 | 1.288E-10 | 1.506E-10 | 1.712E-10 |
| th228 | 1.254E-06 | 1.261E-06 | 1.276E-06 | 1.337E-06 | 1.511E-06 | 1.739E-06 | 2.773E-06 | 4.355E-06 | 5.905E-06 | 7.329E-06 | 8.276E-06 | 8.576E-06 | 9.638E-06 | 1.052E-05 |
| th229 | 3.198E-11 | 3.198E-11 | 3.198E-11 | 3.199E-11 | 3.202E-11 | 3.206E-11 | 3.221E-11 | 3.246E-11 | 3.273E-11 | 3.303E-11 | 3.328E-11 | 3.336E-11 | 3.372E-11 | 3.410E-11 |
| th230 | 7.578E-10 | 7.593E-10 | 7.626E-10 | 7.756E-10 | 8.124E-10 | 8.593E-10 | 1.067E-09 | 1.399E-09 | 1.772E-09 | 2.188E-09 | 2.523E-09 | 2.643E-09 | 3.138E-09 | 3.674E-09 |
| th231 | 3.109E-08 | 3.109E-08 | 3.109E-08 | 3.109E-08 | 3.110E-08 | 3.110E-08 | 3.111E

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa234 | 8.453E-08 | 8.448E-08 | 8.453E-08 | 8.453E-08 | 8.453E-08 | 8.453E-08 | 8.459E-08 | 8.453E-08 | 8.453E-08 | 8.453E-08 | 8.456E-08 | 8.453E-08 | 8.453E-08 | 8.453E-08 | |
| u230 | 9.429E-14 | 8.846E-14 | 7.660E-14 | 4.369E-14 | 8.950E-15 | 1.220E-15 | 2.647E-19 | 1.381E-24 | 7.207E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| u232 | 4.589E-06 | 4.603E-06 | 4.633E-06 | 4.751E-06 | 5.074E-06 | 5.460E-06 | 5.904E-06 | 5.562E-06 | 5.832E-06 | 5.080E-05 | 1.136E-05 | 1.153E-05 | 1.206E-05 | 1.246E-05 | |
| u233 | 2.052E-09 | 2.053E-09 | 2.056E-09 | 2.068E-09 | 2.101E-09 | 2.141E-09 | 2.312E-09 | 2.584E-09 | 2.857E-09 | 3.134E-09 | 3.322E-09 | 3.387E-09 | 3.670E-09 | 3.957E-09 | |
| u234 | 2.990E-05 | 2.992E-05 | 2.997E-05 | 3.018E-05 | 3.075E-05 | 3.147E-05 | 3.459E-05 | 3.915E-05 | 4.371E-05 | 4.826E-05 | 5.162E-05 | 5.276E-05 | 5.723E-05 | 6.166E-05 | |
| u235 | 8.688E-07 | 8.689E-07 | 8.689E-07 | 8.689E-07 | 8.689E-07 | 8.690E-07 | 8.693E-07 | 8.697E-07 | 8.701E-07 | 8.705E-07 | 8.708E-07 | 8.709E-07 | 8.713E-07 | 8.717E-07 | |
| u236 | 7.761E-06 | 7.761E-06 | 7.761E-06 | 7.763E-06 | 7.766E-06 | 7.771E-06 | 7.790E-06 | 7.817E-06 | 7.845E-06 | 7.872E-06 | 7.893E-06 | 7.900E-06 | 7.927E-06 | 7.955E-06 | |
| u237 | 3.687E-04 | 3.686E-04 | 3.684E-04 | 3.675E-04 | 3.651E-04 | 3.622E-04 | 3.501E-04 | 3.336E-04 | 3.178E-04 | 3.027E-04 | 2.920E-04 | 2.884E-04 | 2.747E-04 | 2.617E-04 | |
| u238 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | 1.181E-04 | |
| u240 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | 2.411E-11 | |
| np235 | 4.775E-09 | 4.758E-09 | 4.721E-09 | 4.579E-09 | 4.203E-09 | 3.777E-09 | 2.818E-09 | 1.277E-09 | 6.741E-10 | 3.553E-10 | 2.208E-10 | 1.876E-10 | 9.907E-11 | 5.231E-11 | |
| np236 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | 1.236E-10 | |
| np237 | 5.653E-05 | 5.653E-05 | 5.653E-05 | 5.654E-05 | 5.657E-05 | 5.661E-05 | 5.682E-05 | 5.721E-05 | 5.771E-05 | 5.833E-05 | 5.885E-05 | 5.904E-05 | 5.985E-05 | 6.075E-05 | |
| np238 | 1.576E-05 | 1.576E-05 | 1.576E-05 | 1.575E-05 | 1.574E-05 | 1.573E-05 | 1.568E-05 | 1.560E-05 | 1.552E-05 | 1.545E-05 | 1.539E-05 | 1.537E-05 | 1.530E-05 | 1.522E-05 | |
| np239 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.795E-03 | 2.794E-03 | 2.794E-03 | 2.794E-03 | 2.794E-03 | 2.793E-03 | |
| np240m | 1.754E-10 | 1.755E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | 1.754E-10 | |
| np240 | 3.561E-13 | 3.564E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | 3.561E-13 | |
| pu236 | 2.732E-04 | 2.728E-04 | 2.720E-04 | 2.689E-04 | 2.603E-04 | 2.500E-04 | 2.110E-04 | 1.656E-04 | 1.300E-04 | 1.019E-04 | 8.508E-05 | 7.998E-05 | 6.277E-05 | 4.926E-05 | |
| pu237 | 1.307E-06 | 1.268E-06 | 1.184E-06 | 9.080E-07 | 4.314E-07 | 1.708E-07 | 3.553E-09 | 1.391E-11 | 5.442E-14 | 2.097E-16 | 3.370E-18 | 8.207E-19 | 3.212E-21 | 1.257E-23 | |
| pu238 | 1.697E+00 | 1.699E+00 | 1.702E+00 | 1.716E+00 | 1.749E+00 | 1.781E+00 | 1.848E+00 | 1.865E+00 | 1.857E+00 | 1.844E+00 | 1.833E+00 | 1.830E+00 | 1.816E+00 | 1.801E+00 | |
| pu239 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.659E-01 | 4.658E-01 | 4.658E-01 | 4.658E-01 | 4.658E-01 | 4.658E-01 | 4.658E-01 | |
| pu240 | 1.066E+00 | 1.066E+00 | 1.066E+00 | 1.066E+00 | 1.066E+00 | 1.066E+00 | 1.067E+00 | 1.067E+00 | 1.067E+00 | 1.068E+00 | 1.068E+00 | 1.068E+00 | 1.069E+00 | 1.069E+00 | |
| pu241 | 2.610E-01 | 2.610E-01 | 2.608E-01 | 2.602E-01 | 2.585E-01 | 2.564E-01 | 2.479E-01 | 2.362E-01 | 2.250E-01 | 2.143E-01 | 2.067E-01 | 2.042E-01 | 1.945E-01 | 1.853E-01 | |
| pu242 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | 2.683E-03 | |
| pu243 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | 2.289E-11 | |
| pu244 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | 8.784E-10 | |
| pu246 | 7.595E-17 | 7.595E-17 | 7.595E-17 | 7.595E-17 | 7.595E-17 | 7.595E-17 | 7.595E-17 | 7.594E-17 | 7.594E-17 | 7.593E-17 | 7.593E-17 | 7.593E-17 | 7.592E-17 | 7.591E-17 | |
| am241 | 7.176E-01 | 7.200E-01 | 7.254E-01 | 7.464E-01 | 8.048E-01 | 8.770E-01 | 1.172E+00 | 1.577E+00 | 1.962E+00 | 2.329E+00 | 2.590E+00 | 2.677E+00 | 3.008E+00 | 3.323E+00 | |
| am242m | 2.872E-04 | 2.871E-04 | 2.871E-04 | 2.871E-04 | 2.869E-04 | 2.866E-04 | 2.857E-04 | 2.843E-04 | 2.829E-04 | 2.815E-04 | 2.804E-04 | 2.801E-04 | 2.787E-04 | 2.774E-04 | |
| am242 | 8.028E-04 | 8.028E-04 | 8.027E-04 | 8.025E-04 | 8.020E-04 | 8.013E-04 | 7.986E-04 | 7.947E-04 | 7.908E-04 | 7.869E-04 | 7.840E-04 | 7.830E-04 | 7.792E-04 | 7.754E-04 | |
| am243 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.749E-02 | 3.748E-02 | 3.748E-02 | 3.748E-02 | 3.748E-02 | 3.747E-02 | 3.747E-02 | |
| am244 | 3.765E-13 | 3.763E-13 | 3.762E-13 | 3.746E-13 | 3.707E-13 | 3.660E-13 | 3.468E-13 | 3.211E-13 | 2.973E-13 | 2.752E-13 | 2.599E-13 | 2.548E-13 | 2.359E-13 | 2.184E-13 | |
| am245 | 5.892E-12 | 5.867E-12 | 5.810E-12 | 5.594E-12 | 5.030E-12 | 4.408E-12 | 2.537E-12 | 1.151E-12 | 5.219E-13 | 2.362E-13 | 1.310E-13 | 1.071E-13 | 4.859E-14 | 2.204E-14 | |
| am246m | 4.603E-16 | 4.610E-16 | 4.609E-16 | 4.606E-16 | 4.604E-16 | 4.604E-16 | 4.603E-16 | 4.603E-16 | 4.602E-16 | 4.602E-16 | 4.602E-16 | 4.602E-16 | 4.601E-16 | 4.601E-16 | |
| cm240 | 4.202E-10 | 3.991E-10 | 3.556E-10 | 2.269E-10 | 6.449E-11 | 1.347E-11 | 1.933E-14 | 1.647E-18 | 1.404E-22 | 1.166E-26 | 1.081E-29 | 9.934E-31 | 0.000E+00 | 0.000E+00 | |
| cm241 | 4.671E-08 | 4.478E-08 | 4.072E-08 | 2.813E-08 | 9.988E-09 | 2.752E-09 | 1.257E-11 | 5.615E-15 | 2.509E-18 | 1.097E-21 | 3.500E-24 | 4.903E-25 | 2.191E-28 | 9.788E-32 | |
| cm242 | 4.500E+01 | 4.462E+01 | 4.377E+01 | 4.064E+01 | 3.299E+01 | 2.546E+01 | 8.618E+00 | 1.841E+00 | 4.059E-01 | 1.018E-01 | 4.609E-02 | 3.773E-02 | 2.408E-02 | 2.111E-02 | |
| cm243 | 5.221E-02 | 5.220E-02 | 5.219E-02 | 5.213E-02 | 5.196E-02 | 5.175E-02 | 5.090E-02 | 4.970E-02 | 4.853E-02 | 4.739E-02 | 4.656E-02 | 4.627E-02 | 4.519E-02 | 4.412E-02 | |
| cm244 | 6.373E+00 | 6.371E+00 | 6.368E+00 | 6.357E+00 | 6.324E+00 | 6.284E+00 | 6.118E+00 | 5.888E+00 | 5.667E+00 | 5.454E+00 | 5.305E+00 | 5.250E+00 | 5.053E+00 | 4.863E+00 | |
| cm245 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | 1.229E-03 | |
| cm246 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.422E-04 | 1.421E-04 | 1.421E-04 | 1.421E-04 | 1.421E-04 | 1.421E-04 | |
| cm247 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | 6.371E-10 | |
| cm248 | 1.607E-09 | 1.607E-09 | 1.607E-09 | 1.607E-09 | 1.607E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | 1.608E-09 | |
| cm249 | 2.269E-16 | 2.099E-16 | 1.762E-16 | 8.916E-17 | 1.324E-17 | 1.233E-18 | 6.037E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cm250 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.454E-13 | 2.453E-13 | 2.453E-13 | 2.453E-13 | 2.453E-13 | 2.453E-13 | |
| bk247 | 3.088E-16 | 3.088E-16 | 3.088E-16 | 3.088E-16 | 3.088E-16 | 3.087E-16 | 3.086E-16 | 3.085E-16 | 3.083E-16 | 3.082E-16 | 3.081E-16 | 3.080E-16 | 3.079E-16 | 3.077E-16 | |
| bk248 | 1.933E-12 | 1.933E-12 | 1.931E-12 | 1.924E-12 | 1.904E-12 | 1.880E-12 | 1.781E-12 | 1.649E-12 | 1.527E-12 | 1.413E-12 | 1.335E-12 | 1.309E-12 | 1.212E-12 | 1.122E-12 | |

1

5 more years for cooling used fuel material actinides page 21

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 4.166E-08 | 4.148E-08 | 4.108E-08 | 3.955E-08 | 3.557E-08 | 3.117E-08 | 1.794E-08 | 8.136E-09 | 3.690E-09 | 1.670E-09 | 9.266E-10 | 7.575E-10 | 3.436E-10 | 1.558E-10 |
| bk250 | 1.202E-12 | 1.196E-12 | 1.182E-12 | 1.131E-12 | 1.000E-12 | 8.581E-13 | 5.525E-13 | 3.907E-13 | 7.227E-14 | 2.884E-14 | 1.164E-14 | 4.749E-15 | 1.996E-15 | |
| bk251 | 5.589E-16 | 5.397E-16 | 4.990E-16 | 3.679E-16 | 1.567E-16 | 5.417E-17 | 6.383E-19 | 1.107E-21 | 1.921E-24 | 3.276E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 1.414E-11 | 1.408E-11 | 1.395E-11 | 1.345E-11 | 1.215E-11 | 1.070E-11 | 6.298E-12 | 2.950E-12 | 1.381E-12 | 6.456E-13 | 3.668E-13 | 3.023E-13 | 1.416E-13 | 6.630E-14 |
| cf249 | 1.935E-08 | 1.943E-08 | 1.963E-08 | 2.036E-08 | 2.228E-08 | 2.439E-08 | 3.073E-08 | 3.538E-08 | 3.746E-08 | 3.835E-08 | 3.866E-08 | 3.872E-08 | 3.884E-08 | 3.885E-08 |
| cf250 | 2.537E-07 | 2.537E-07 | 2.535E-07 | 2.528E-07 | 2.511E-07 | 2.488E-07 | 2.398E-07 | 2.274E-07 | 2.157E-07 | 2.045E-07 | 1.966E-07 | 1.940E-07 | 1.840E-07 | 1.745E-07 |
| cf251 | 1.828E-09 | 1.828E-09 | 1.828E-09 | 1.828E-09 | 1.827E-09 | 1.827E-09 | 1.826E-09 | 1.825E-09 | 1.823E-09 | 1.822E-09 | 1.821E-09 | 1.821E-09 | 1.819E-09 | 1.818E-09 |
| cf252 | 3.804E-07 | 3.798E-07 | 3.786E-07 | 3.739E-07 | 3.610E-07 | 3.455E-07 | 2.877E-07 | 2.214E-07 | 1.704E-07 | 1.311E-07 | 1.078E-07 | 1.009E-07 | 7.762E-08 | 5.974E-08 |
| cf253 | 2.784E-14 | 2.576E-14 | 2.162E-14 | 1.094E-14 | 1.625E-15 | 1.513E-16 | 7.407E-21 | 5.015E-27 | 3.395E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 3.718E-10 | 3.634E-10 | 3.451E-10 | 2.824E-10 | 1.611E-10 | 8.009E-11 | 4.313E-12 | 6.586E-14 | 1.006E-15 | 1.518E-17 | 6.729E-19 | 2.318E-19 | 3.540E-21 | 5.406E-23 |
| es252 | 8.902E-16 | 8.876E-16 | 8.818E-16 | 8.594E-16 | 7.997E-16 | 7.311E-16 | 5.026E-16 | 2.940E-16 | 1.719E-16 | 1.004E-16 | 6.732E-17 | 5.872E-17 | 3.434E-17 | 2.009E-17 |
| es253 | 2.930E-11 | 2.748E-11 | 2.380E-11 | 1.356E-11 | 2.760E-12 | 3.714E-13 | 7.375E-17 | 3.268E-22 | 1.402E-27 | 5.810E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 6.631E-12 | 6.598E-12 | 6.524E-12 | 6.243E-12 | 5.519E-12 | 4.735E-12 | 2.494E-12 | 9.961E-13 | 3.979E-13 | 1.585E-13 | 8.001E-14 | 6.333E-14 | 2.530E-14 | 1.011E-14 |
| es255 | 1.139E-14 | 1.100E-14 | 1.018E-14 | 7.502E-15 | 3.196E-15 | 1.105E-15 | 1.302E-17 | 2.258E-20 | 3.917E-23 | 6.679E-26 | 5.853E-28 | 1.159E-28 | 2.010E-31 | 3.488E-34 |
| total | 5.568E+01 | 5.530E+01 | 5.446E+01 | 5.135E+01 | 4.376E+01 | 3.629E+01 | 1.963E+01 | 1.304E+01 | 1.175E+01 | 1.157E+01 | 1.160E+01 | 1.162E+01 | 1.172E+01 | 1.182E+01 |

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5 more years for cooling used fuel material actinides page 22

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 3.255E-07 | 3.268E-07 | 3.276E-07 | 3.413E-07 | 3.930E-07 | 4.519E-07 | 7.194E-07 | 1.130E-06 | 1.532E-06 | 1.903E-06 | 2.150E-06 | 2.230E-06 | 2.503E-06 | 2.732E-06 |
| pb | 7.161E-08 | 7.158E-08 | 7.208E-08 | 7.509E-08 | 8.646E-08 | 9.943E-08 | 1.583E-07 | 2.486E-07 | 3.372E-07 | 4.186E-07 | 4.730E-07 | 4.906E-07 | 5.506E-07 | 6.010E-07 |
| bi | 6.434E-07 | 6.461E-07 | 6.476E-07 | 6.747E-07 | 7.768E-07 | 8.934E-07 | 1.422E-06 | 2.233E-06 | 3.029E-06 | 3.761E-06 | 4.249E-06 | 4.408E-06 | 4.947E-06 | 5.400E-06 |
| po | 2.878E-06 | 2.884E-06 | 2.895E-06 | 3.018E-06 | 3.475E-06 | 3.996E-06 | 6.362E-06 | 9.991E-06 | 1.355E-05 | 1.682E-05 | 1.901E-05 | 1.972E-05 | 2.213E-05 | 2.415E-05 |
| at | 4.387E-11 | 4.388E-11 | 4.386E-11 | 4.382E-11 | 4.382E-11 | 4.386E-11 | 4.411E-11 | 4.444E-11 | 4.482E-11 | 4.523E-11 | 4.556E-11 | 4.563E-11 | 4.617E-11 | 4.669E-11 |
| rn | 1.458E-06 | 1.458E-06 | 1.466E-06 | 1.529E-06 | 1.760E-06 | 2.025E-06 | 3.223E-06 | 5.062E-06 | 6.865E-06 | 8.523E-06 | 9.630E-06 | 9.990E-06 | 1.121E-05 | 1.224E-05 |
| fr | 3.971E-11 | 3.972E-11 | 3.971E-11 | 3.967E-11 | 3.967E-11 | 3.972E-11 | 3.995E-11 | 4.027E-11 | 4.063E-11 | 4.102E-11 | 4.134E-11 | 4.141E-11 | 4.191E-11 | 4.240E-11 |
| ra | 1.318E-06 | 1.318E-06 | 1.325E-06 | 1.382E-06 | 1.591E-06 | 1.830E-06 | 2.913E-06 | 4.575E-06 | 6.205E-06 | 7.704E-06 | 8.704E-06 | 9.030E-06 | 1.013E-05 | 1.106E-05 |
| ac | 3.657E-11 | 3.657E-11 | 3.656E-11 | 3.655E-11 | 3.658E-11 | 3.667E-11 | 3.706E-11 | 3.762E-11 | 3.820E-11 | 3.883E-11 | 3.931E-11 | 3.945E-11 | 4.017E-11 | 4.089E-11 |
| th | 3.126E-06 | 3.133E-06 | 3.149E-06 | 3.209E-06 | 3.384E-06 | 3.611E-06 | 4.646E-06 | 6.228E-06 | 7.779E-06 | 9.203E-06 | 1.015E-05 | 1.045E-05 | 1.151E-05 | 1.239E-05 |
| pa | 2.774E-05 | 2.774E-05 | 2.774E-05 | 2.774E-05 | 2.775E-05 | 2.776E-05 | 2.778E-05 | 2.782E-05 | 2.784E-05 | 2.790E-05 | 2.794E-05 | 2.795E-05 | 2.802E-05 | 2.810E-05 |
| u | 5.299E-04 | 5.298E-04 | 5.297E-04 | 5.292E-04 | 5.277E-04 | 5.258E-04 | 5.184E-04 | 5.080E-04 | 4.981E-04 | 4.886E-04 | 4.818E-04 | 4.795E-04 | 4.709E-04 | 4.620E-04 |
| np | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.868E-03 | 2.869E-03 | 2.869E-03 |
| pu | 3.493E+00 | 3.495E+00 | 3.498E+00 | 3.511E+00 | 3.543E+00 | 3.573E+00 | 3.632E+00 | 3.637E+00 | 3.618E+00 | 3.595E+00 | 3.577E+00 | 3.571E+00 | 3.547E+00 | 3.524E+00 |
| am | 7.562E-01 | 7.586E-01 | 7.640E-01 | 7.849E-01 | 8.434E-01 | 9.155E-01 | 1.211E+00 | 1.616E+00 | 2.001E+00 | 2.368E+00 | 2.629E+00 | 2.716E+00 | 3.047E+00 | 3.361E+00 |
| cm | 5.143E+01 | 5.104E+01 | 5.020E+01 | 4.705E+01 | 3.937E+01 | 3.179E+01 | 1.479E+01 | 7.780E+00 | 6.123E+00 | 5.605E+00 | 5.395E+00 | 5.335E+00 | 5.123E+00 | 4.930E+00 |
| bk | 4.166E-08 | 4.148E-08 | 4.108E-08 | 3.955E-08 | 3.557E-08 | 3.117E-08 | 1.794E-08 | 8.138E-09 | 3.692E-09 | 1.672E-09 | 9.279E-10 | 7.588E-10 | 3.448E-10 | 1.570E-10 |
| cf | 6.557E-07 | 6.551E-07 | 6.539E-07 | 6.492E-07 | 6.363E-07 | 6.207E-07 | 5.601E-07 | 4.861E-07 | 4.254E-07 | 3.758E-07 | 3.449E-07 | 3.354E-07 | 3.023E-07 | 2.749E-07 |
| es | 3.594E-11 | 3.409E-11 | 3.033E-11 | 1.981E-11 | 8.283E-12 | 5.108E-12 | 2.494E-12 | 9.964E-13 | 3.981E-13 | 1.586E-13 | 8.008E-14 | 6.339E-14 | 2.533E-14 | 1.013E-14 |
| totals | 5.568E+01 | 5.530E+01 | 5.446E+01 | 5.135E+01 | 4.376E+01 | 3.629E+01 | 1.963E+01 | 1.304E+01 | 1.175E+01 | 1.157E+01 | 1.160E+01 | 1.162E+01 | 1.172E+01 | 1.182E+01 |

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5 more years for cooling used fuel material fission products page 23

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.237E-03 | 1.237E-03 | 1.236E-03 | 1.223E-03 | 1.222E-03 | 1.212E-03 | 1.165E-03 | 1.102E-03 | 1.041E-03 | 9.843E-04 | 9.439E-04 | 9.304E-04 | 8.796E-04 | 8.315E-04 |
| he 3 | 7.091E-05 | 7.129E-05 | 7.215E-05 | 7.548E-05 | 8.475E-05 | 9.619E-05 | 1.429E-04 | 2.066E-04 | 2.668E-04 | 3.239E-04 | 3.643E-04 | 3.777E-04 | 4.286E-04 | 4.767E-04 |
| he 4 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 | 2.630E-02 |
| cu 65 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 |
| zn 66 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 | 2.252E-06 |
| zn 67 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 | 6.286E-06 |
| zn 68 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 | 1.259E-05 |
| ga 69 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 | 2.545E-05 |
| zn 70 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 | 6.218E-05 |
| ge 70 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 | 3.002E-07 |
| ga 71 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 | 1.160E-04 |
| ge 71 | 3.169E-17 | 2.807E-17 | 2.137E-17 | 7.394E-18 | 3.788E-19 | 9.372E-21 | 1.802E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 72 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 | 2.938E-04 |
| ge 73 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 | 6.033E-04 |
| ge 73m | 2.097E-19 | 2.061E-19 | 1.983E-19 | 1.705E-19 | 1.117E-19 | 6.597E-20 | 7.081E-21 | 3.126E-22 | 1.339E-23 | 5.684E-25 | 5.432E-26 | 2.142E-26 | 1.042E-27 | 4.963E-29 |
| as 73 | 2.916E-12 | 2.866E-12 | 2.757E-12 | 2.370E-12 | 1.553E-12 | 9.172E-13 | 1.015E-13 | 4.347E-15 | 1.861E-16 | 7.902E-18 | 7.552E-19 | 3.384E-19 | 1.449E-20 | 6.205E-22 |
| ge 74 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 | 1.443E-03 |
| as 74 | 7.576E-14 | 7.008E-14 | 5.880E-14 | 2.971E-14 | 4.394E-15 | 4.069E-16 | 1.948E-20 | 1.277E-26 | 8.377E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 74 | 6.606E-09 | 6.606E-09 | 6.606E-09 | 6.606E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 | 6.607E-09 |
| as 75 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 |
| se 75 | 1.644E-10 | 1.625E-10 | 1.584E-10 | 1.431E-10 | 1.078E-10 | 7.573E-11 | 1.732E-11 | 2.095E-12 | 2.535E-13 | 3.049E-14 | 6.319E-15 | 3.689E-15 | 4.464E-16 | 5.401E-17 |
| ge 76 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 | 6.485E-03 |
| se 76 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 | 1.341E-04 |
| se 77 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 | 1.523E-02 |
| se 78 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 | 4.328E-02 |
| kr 78 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 | 3.062E-15 |
| se 79 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.313E-02 | 9.312E-02 | 9.312E-02 | 9.312E-02 | 9.312E-02 |
| br 79 | 5.079E-05 | 5.079E-05 | 5.080E-05 | 5.081E-05 | 5.084E-05 | 5.087E-05 | 5.103E-05 | 5.124E-05 | 5.146E-05 | 5.168E-05 | 5.184E-05 | 5.190E-05 | 5.212E-05 | 5.234E-05 |
| se 80 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 | 2.128E-01 |
| kr 80 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 | 8.374E-06 |
| br 81 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 | 3.923E-01 |
| kr 81 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 | 7.189E-07 |
| se 82 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 | 5.550E-01 |
| kr 82 | 1.546E-02 | 1.546E-02 | 1.546E-02 | 1.546

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rb 87 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 | 2.834E+00 |
| sr 87 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 | 8.691E-05 |
| sr 88 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 | 3.767E+00 |
| y 88 | 5.262E-07 | 5.194E-07 | 5.044E-07 | 4.502E-07 | 3.274E-07 | 2.202E-07 | 4.197E-08 | 3.913E-09 | 3.648E-10 | 3.379E-11 | 5.766E-12 | 3.150E-12 | 2.937E-13 | 2.738E-14 |
| zr 88 | 1.322E-13 | 1.301E-13 | 1.253E-13 | 1.083E-13 | 7.209E-14 | 4.342E-14 | 5.215E-15 | 2.511E-16 | 1.209E-17 | 5.771E-19 | 6.018E-20 | 2.778E-20 | 1.338E-21 | 6.440E-23 |
| sr 89 | 1.194E-02 | 1.162E-02 | 1.092E-02 | 8.590E-03 | 4.386E-03 | 1.900E-03 | 5.748E-05 | 3.846E-07 | 2.573E-09 | 1.699E-11 | 4.070E-13 | 1.137E-13 | 7.605E-16 | 5.089E-18 |

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5 more years for cooling used fuel material fission products page 24

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 89 | 4.951E+00 | 4.951E+00 | 4.952E+00 | 4.955E+00 | 4.959E+00 | 4.961E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 | 4.963E+00 |
| y 89m | 4.129E-12 | 4.017E-12 | 3.777E-12 | 2.971E-12 | 1.517E-12 | 6.570E-13 | 1.988E-14 | 1.330E-16 | 8.900E-19 | 5.874E-21 | 1.408E-22 | 3.931E-23 | 2.630E-25 | 1.760E-27 |
| sr 90 | 5.796E+00 | 5.795E+00 | 5.793E+00 | 5.787E+00 | 5.768E+00 | 5.745E+00 | 5.649E+00 | 5.515E+00 | 5.384E+00 | 5.255E+00 | 5.162E+00 | 5.130E+00 | 5.008E+00 | 4.889E+00 |
| y 90 | 1.470E-03 | 1.470E-03 | 1.470E-03 | 1.468E-03 | 1.463E-03 | 1.457E-03 | 1.433E-03 | 1.399E-03 | 1.366E-03 | 1.333E-03 | 1.309E-03 | 1.301E-03 | 1.270E-03 | 1.240E-03 |
| zr 90 | 3.125E-01 | 3.133E-01 | 3.150E-01 | 3.217E-01 | 3.403E-01 | 3.635E-01 | 4.593E-01 | 5.936E-01 | 7.247E-01 | 8.531E-01 | 9.465E-01 | 9.781E-01 | 1.100E+00 | 1.219E+00 |
| y 91 | 3.198E-02 | 3.123E-02 | 2.961E-02 | 2.406E-02 | 1.347E-02 | 6.537E-03 | 3.187E-04 | 4.222E-06 | 5.593E-08 | 7.321E-10 | 2.918E-11 | 9.697E-12 | 1.284E-13 | 1.701E-15 |
| zr 91 | 7.219E+00 | 7.219E+00 | 7.221E+00 | 7.227E+00 | 7.244E+00 | 7.250E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 | 7.251E+00 |
| nb 91 | 1.749E-10 | 1.749E-10 | 1.749E-10 | 1.749E-10 | 1.749E-10 | 1.748E-10 | 1.747E-10 | 1.745E-10 | 1.744E-10 | 1.742E-10 | 1.740E-10 | 1.740E-10 | 1.738E-10 | 1.736E-10 |
| nb 91m | 1.505E-16 | 1.471E-16 | 1.397E-16 | 1.145E-16 | 6.552E-17 | 3.271E-17 | 1.792E-18 | 2.805E-20 | 4.391E-22 | 6.795E-24 | 3.068E-25 | 1.064E-25 | 1.665E-27 | 2.606E-29 |
| zr 92 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 | 8.781E+00 |
| nb 92 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 | 1.520E-08 |
| nb 92m | 1.475E-19 | 1.287E-19 | 9.465E-20 | 2.865E-20 | 1.009E-21 | 1.566E-23 | 4.283E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo 92 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 | 1.024E-13 |
| zr 93 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 | 1.087E+01 |
| nb 93 | 1.751E-06 | 1.754E-06 | 1.761E-06 | 1.788E-06 | 1.865E-06 | 1.966E-06 | 2.445E-06 | 3.282E-06 | 4.290E-06 | 5.466E-06 | 6.443E-06 | 6.796E-06 | 8.278E-06 | 9.904E-06 |
| nb 93m | 1.001E-05 | 1.003E-05 | 1.009E-05 | 1.030E-05 | 1.088E-05 | 1.160E-05 | 1.456E-05 | 1.864E-05 | 2.255E-05 | 2.631E-05 | 2.900E-05 | 2.990E-05 | 3.334E-05 | 3.663E-05 |
| mo 93 | 7.179E-09 | 7.179E-09 | 7.179E-09 | 7.179E-09 | 7.178E-09 | 7.178E-09 | 7.177E-09 | 7.176E-09 | 7.175E-09 | 7.174E-09 | 7.173E-09 | 7.172E-09 | 7.171E-09 | 7.170E-09 |
| zr 94 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 | 1.248E+01 |
| nb 94 | 5.463E-05 | 5.463E-05 | 5.463E-05 | 5.463E-05 | 5.463E-05 | 5.463E-05 | 5.463E-05 | 5.462E-05 | 5.462E-05 | 5.462E-05 | 5.462E-05 | 5.462E-05 | 5.462E-05 | 5.461E-05 |
| mo 94 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 | 2.390E-04 |
| zr 95 | 8.563E-02 | 8.380E-02 | 7.982E-02 | 6.604E-02 | 3.886E-02 | 2.008E-02 | 1.370E-03 | 2.443E-05 | 4.698E-07 | 8.938E-09 | 4.704E-10 | 1.719E-10 | 3.306E-12 | 6.358E-14 |
| nb 95 | 9.660E-02 | 9.464E-02 | 9.038E-02 | 7.548E-02 | 4.526E-02 | 2.372E-02 | 1.527E-03 | 3.036E-05 | 5.847E-07 | 1.112E-08 | 5.681E-10 | 2.073E-10 | 4.110E-12 | 7.914E-14 |
| nb 95m | 5.527E-05 | 5.408E-05 | 5.151E-05 | 4.262E-05 | 2.508E-05 | 1.296E-05 | 8.197E-07 | 1.577E-08 | 3.032E-10 | 5.768E-12 | 3.036E-13 | 1.109E-13 | 2.134E-15 | 4.104E-17 |
| mo 95 | 1.303E+01 | 1.303E+01 | 1.304E+01 | 1.307E+01 | 1.313E+01 | 1.317E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 | 1.321E+01 |
| tc 95 | 1.223E-19 | 1.195E-19 | 1.136E-19 | 9.309E-20 | 5.334E-20 | 2.667E-20 | 1.471E-21 | 2.325E-23 | 3.674E-25 | 5.740E-27 | 2.610E-28 | 9.071E-29 | 1.433E-30 | 0.000E+00 |
| tc 95m | 2.275E-16 | 2.224E-16 | 2.113E-16 | 1.732E-16 | 9.926E-17 | 4.963E-17 | 2.737E-18 | 4.326E-20 | 6.836E-22 | 1.068E-23 | 4.856E-25 | 1.688E-25 | 2.667E-27 | 4.215E-29 |
| zr 96 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 | 1.456E+01 |
| mo 96 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 | 7.171E-01 |
| ru 96 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 |
| mo 97 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 | 1.585E+01 |
| tc 97 | 1.729E-07 | 1.729E-07 | 1.730E-07 | 1.732E-07 | 1.737E-07 | 1.741E-07 | 1.746E-07 | 1.747E-07 | 1.747E-07 | 1.747E-07 | 1.747E-07 | 1.747E-07 | 1.747E-07 | 1.747E-07 |
| tc 97m | 1.894E-09 | 1.865E-09 | 1.802E-09 | 1.577E-09 | 1.086E-09 | 6.824E-10 | 9.784E-11 | 6.068E-12 | 3.764E-13 | 2.317E-14 | 2.918E-15 | 1.437E-15 | 8.913E-17 | 5.528E-18 |
| mo 98 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 | 1.736E+01 |
| tc 98 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 | 1.785E-04 |
| ru 98 | 2.909E-08 | 2.909E-08 | 2.909E-08 | 2.910E-08 | 2.910E-08 | 2.910E-08 | 2.912E-08 | 2.915E-08 | 2.918E-08 | 2.921E-08 | 2.923E-08 | 2.924E-08 | 2.927E-08 | 2.930E-08 |
| tc 99 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 |
| ru 99 | 6.874E-04 | 6.877E-04 | 6.883E-04 | 6.909E-04 | 6.981E-04 | 7.071E-04 | 7.445E-04 | 7.981E-04 | 8.517E-04 | 9.055E-04 | 9.454E-04 | 9.591E-04 | 1.013E-03 | 1.066E-03 |
| mo100 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 | 2.048E+01 |
| ru100 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 | 2.560E+00 |
| ru101 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 | 1.771E+01 |
| rh101 | 9.772E-09 | 9.760E-09 | 9.735E-09 | 9.638E-09 | 9.370E-09 | 9.047E-09 | 7.813E-09 | 6.334E-09 | 5.134E-09 | 4.160E-09 | 3.558E-09 | 3.372E-09 | 2.734E-09 | 2.216E-09 |
| ru102 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 | 2.040E+01 |
| rh102 | 1.559E-05 | 1.549E-05 | 1.529E-05 | 1.462E-05 | 1.222E-05 | 9.967E-06 | 4.255E-06 | 1.262E-06 | 3.776E-07 | 1.154E-07 | 4.966E-08 | 3.769E-08 | 1.414E-08 | 6.676E-09 |
| rh102m | 3.450E-05 | 3.446E-05 | 3.438E-05 | 3.408E-05 | 3.324E-05 | 3.223E-05 | 2.832E-05 | 2.354E-05 | 1.956E-05 | 1.624E-05 | 1.415E-05 | 1.350E-05 | 1.122E-05 | 9.322E-06 |
| pd102 | 1.548E-05 | 1.550E-05 | 1.555E-05 | 1.574E-05 | 1.622E-05 | 1.672E-05 | 1.798E-05 | 1.864E-05 | 1.883E-05 | 1.889E-05 | 1.891E-05 | 1.891E-05 | 1.892E-05 | 1.892E-05 |
| ru103 | 1.612E-02 | 1.557E-02 | 1.438E-02 | 1.055E-02 | 4.442E-03 | 1.512E-03 | 1.674E-05 | 2.656E-08 | 4.212E-11 | 6.565E-14 | 5.382E-16 | 1.041E-16 | 1.652E-19 | 2.620E-22 |
| rh103 | 1.520E+01 | 1.521E+01 | 1.521E+01 | 1.521E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 |
| rh103m | 1.584E-05 | 1.529E-05 | 1.412E-05 | 1.037E-05 | 4.363E-06 | 1.486E-06 | 1.644E-08 | 2.608E-11 | 4.138E-14 | 6.449E-17 | 5.287E-19 | 1.023E-19 | 1.623E-22 | 2.574E-25 |
| pd103 | 1.254E-10 | 1.155E-10 | 9.617E-11 | 4.710E-11 | 6.380E-12 | 5.298E-13 | 1.608E-17 | 5.489E-24 | 1.874E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ru104 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 | 1.932E+01 |
| pd104 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 | 6.321E+00 |
| pd105 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 | 1.581E+01 |

1

5 more years for cooling used fuel material fission products page 25

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag105 | 2.150E-16 | 2.079E-16 | 1.927E-16 | 1.437E-16 | 6.312E-17 | 2.267E-17 | 3.135E-19 | 6.842E-22 | 1.493E-24 | 3.204E-27 | 3.331E-29 | 6.992E-30 | 1.526E-32 | 3.330E-35 |
| ru106 | 3.897E+00 | 3.883E+00 | 3.851E+00 | 3.727E+00 | 3.402E+00 | 3.036E+00 | 1.887E+00 | 9.556E-01 | 4.839E-01 | 2.446E-01 | 1.473E-01 | 1.238E-01 | 6.270E-02 | 3.175E-02 |
| rh106 | 3.649E-06 | 3.635E-06 | 3.605E-06 | 3.489E-06 | 3.184E-06 | 2.842E-06 | 1.767E-06 | 8.946E-07 | 4.530E-07 | 2.289E-07 | 1.379E-07 | 1.159E-07 | 5.870E-08 | 2.972E-08 |
| pd106 | 1.214E+01 | 1.216E+01 | 1.219E+01 | 1.232E+01 | 1.264E+01 | 1.301E+01 | 1.415E+01 | 1.509E+01 | 1.556E+01 | 1.580E+01 | 1.589E+01 | 1.592E+01 | 1.598E+01 | 1.601E+01 |
| cd106 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 | 4.660E-15 |
| pd107 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 | 1.022E+01 |
| ag107 | 2.264E-06 | 2.270E-06 | 2.283E-06 | 2.336E-06 | 2.482E-06 | 2.664E-06 | 3.425E-06 | 4.514E-06 | 5.603E-06 | 6.696E-06 | 7.507E-06 | 7.785E-06 | 8.874E-06 | 9.964E-06 |
| pd108 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 | 7.070E+00 |
| ag108 | 1.091E-14 | 1.091E-14 | 1.091E-14 | 1.091E-14 | 1.091E-14 | 1.091E-14 | 1.090E-14 | 1.088E-14 | 1.086E-14 | 1.084E-14 | 1.083E-14 | 1.083E-14 | 1.081E-14 | 1.079E-14 |
| ag108m | 1.213E-05 | 1.213E-05 | 1.213E-05 | 1.213E-05 | 1.213E-05 | 1.213E-05 | 1.211E-05 | 1.209E-05 | 1.207E-05 | 1.205E-05 | 1.204E-05 | 1.204E-05 | 1.202E-05 | 1.200E-05 |
| cd108 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.487E-05 | 2.488E-05 | 2.488E-05 | 2.488E-05 | 2.488E-05 | 2.488E-05 |
| ag109 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 |
| ag109m | 3.445E-12 | 3.434E-12 | 3.411E-12 | 3.323E-12 | 3.087E-12 | 2.817E-12 | 1.920E-12 | 1.110E-12 | 6.413E-13 | 3.700E-13 | 2.459E-13 | 2.138E-13 | 1.236E-13 | 7.141E-14 |
| cd109 | 3.468E-06 | 3.457E-06 | 3.434E-06 | 3.345E-06 | 3.107E-06 | 2.835E-06 | 1.933E-06 | 1.117E-06 | 6.455E-07 | 3.725E-07 | 2.475E-07 | 2.153E-07 | 1.244E-07 | 7.189E-08 |
| pd110 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 | 2.312E+00 |
| ag110 | 3.766E-10 | 3.745E-10 | 3.699E-10 | 3.523E-10 | 3.075E-10 | 2.596E-10 | 1.279E-10 | 4.646E-11 | 1.687E-11 | 6.110E-12 | 2.872E-12 | 2.219E-12 | 8.057E-13 | 2.926E-13 |
| ag110m | 2.429E-02 | 2.416E-02 | 2.386E-02 | 2.273E-02 | 1.984E-02 | 1.675E-02 | 8.253E-03 | 2.997E-03 | 1.088E-03 | 3.941E-04 | 1.853E-04 | 1.431E-04 | 5.197E-05 | 1.887E-05 |
| cd110 | 2.311E+00 | 2.311E+00 | 2.311E+00 | 2.312E+00 | 2.315E+00 | 2.318E+00 | 2.327E+00 | 2.332E+00 | 2.334E+00 | 2.335E+00 | 2.335E+00 | 2.335E+00 | 2.335E+00 | 2.335E+00 |
| ag111 | 2.412E-12 | 2.003E-12 | 1.317E-12 | 2.586E-13 | 2.708E-15 | 9.286E-18 | 4.614E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd111 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 |
| cd112 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 | 5.184E-01 |
| sn112 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 | 5.524E-11 |
| cd113 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 | 6.005E-03 |
| cd113m | 8.536E-05 | 8.534E-05 | 8.528E-05 | 8.508E-05 | 8.452E-05 | 8.383E-05 | 8.100E-05 | 7.712E-05 | 7.342E-05 | 6.989E-05 | 6.738E-05 | 6.654E-05 | 6.335E-05 | 6.032E-05 |
| in113 | 1.418E-05 | 1.421E-05 | 1.426E-05 | 1.446E-05 | 1.502E-05 | 1.571E-05 | 1.853E-05 | 2.241E-05 | 2.610E-05 | 2.963E-05 | 3.214E-05 | 3.297E-05 | 3.616E-05 | 3.919E-05 |
| in113m | 8.022E-16 | 7.926E-16 | 7.714E-16 | 6.942E-16 | 5.168E-16 | 3.579E-16 | 7.706E-17 | 8.553E-18 | 9.493E-19 | 1.047E-19 | 2.035E-20 | 1.162E-20 | 1.290E-21 | 1.432E-22 |
| sn113 | 1.336E-12 | 1.320E-12 | 1.284E-12 | 1.156E-12 | 8.605E-13 | 5.960E-13 | 1.283E-13 | 1.424E-14 | 1.581E-15 | 1.744E-16 | 3.389E-17 | 1.936E-17 | 2.148E-18 | 2.384E-19 |
| cd114 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 |
| in114 | 1.105E-13 | 1.075E-13 | 1.009E-13 | 7.900E-14 | 3.978E-14 | 1.693E-14 | 4.768E-16 | 2.878E-18 | 1.737E-20 | 1.034E-22 | 2.294E-24 | 6.239E-25 | 3.765E-27 | 2.273E-29 |
| in114m | 6.797E-09 | 6.610E-09 | 6.206E-09 | 4.858E-09 | 2.446E-09 | 1.041E-09 | 2.932E-11 | 1.769E-13 | 1.068E-15 | 6.356E-18 | 1.410E-19 | 3.836E-20 | 2.315E-22 | 1.397E-24 |
| sn114 | 2.819E-06 | 2.819E-06 | 2.819E-06 | 2.820E-06 | 2.823E-06 | 2.824E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 | 2.825E-06 |
| cd115m | 1.569E-05 | 1.521E-05 | 1.418E-05 | 1.080E-05 | 5.040E-06 | 1.951E-06 | 3.695E-08 | 1.264E-10 | 4.325E-13 | 1.457E-15 | 2.118E-17 | 4.984E-18 | 1.705E-20 | 5.834E-23 |
| in115 | 5.414E-02 | 5.414E-02 | 5.414E-02 | 5.415E-02 | 5.415E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 |
| in115m | 6.992E-12 | 6.782E-12 | 6.319E-12 | 4.813E-12 | 2.246E-12 | 8.696E-13 | 1.647E-14 | 5.634E-17 | 1.928E-19 | 6.493E-22 | 9.438E-24 | 2.221E-24 | 7.600E-27 | 2.600E-29 |
| sn115 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 | 8.034E-03 |
| cd116 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 | 1.847E-01 |
| sn116 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 | 6.576E-02 |
| sn117 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 | 1.644E-01 |
| sn117m | 1.494E-10 | 1.349E-10 | 1.073E-10 | 4.397E-11 | 3.619E-12 | 1.616E-13 | 3.664E-19 | 3.054E-27 | 2.545E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn118 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 | 1.424E-01 |
| sn119 | 1.358E-01 | 1.358E-01 | 1.359E-01 | 1.359E-01 | 1.360E-01 | 1.362E-01 | 1.365E-01 | 1.368E-01 | 1.369E-01 | 1.369E-01 | 1.370E-01 | 1.370E-01 | 1.370E-01 | 1.370E-01 |
| sn119m | 1.132E-03 | 1.127E-03 | 1.115E-03 | 1.069E-03 | 9.524E-04 | 8.244E-04 | 4.510E-04 | 1.902E-04 | 8.020E-05 | 3.374E-05 | 1.773E-05 | 1.423E-05 | 5.999E-06 | 2.530E-06 |
| sn120 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 | 1.369E-01 |
| te120 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 | 3.919E-11 |
| sn121 | 6.708E-07 | 6.708E-07 | 6.707E-07 | 6.702E-07 | 6.687E-07 | 6.670E-07 | 6.597E-07 | 6.493E-07 | 6.392E-07 | 6.291E-07 | 6.218E-07 | 6.193E-07 | 6.096E-07 | 6.000E-07 |
| sn121m | 1.231E-02 | 1.231E-02 | 1.230E-02 | 1.229E-02 | 1.227E-02 | 1.224E-02 | 1.210E-02 | 1.191E-02 | 1.173E-02 | 1.154E-02 | 1.141E-02 | 1.136E-02 | 1.118E-02 | 1.101E-02 |
| sb121 | 1.348E-01 | 1.348E-01 | 1.348E-01 | 1.348E-01 | 1.348E-01 | 1.348E-01 | 1.350E-01 | 1.352E-01 | 1.353E-01 | 1.355E-01 | 1.357E-01 | 1.357E-01 | 1.359E-01 | 1.361E-01 |
| te121 | 5.790E-10 | 5.741E-10 | 5.633E-10 | 5.231E-10 | 4.252E-10 | 3.287E-10 | 1.120E-10 | 2.399E-11 | 5.140E-12 | 1.096E-12 | 3.478E-13 | 2.348E-13 | 5.031E-14 | 1.078E-14 |
| te121m | 4.941E-09 | 4.900E-09 | 4.807E-09 | 4.465E-09 | 3.631E-09 | 2.807E-09 | 9.565E-10 | 2.049E-10 | 4.389E-11 | 9.361E-12 | 2.969E-12 | 2.005E-12 | 4.296E-13 | 9.201E-14 |
| sn122 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 | 1.837E-01 |
| te122 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 | 1.192E-02 |
| sn123 | 1.481E-03 | 1.465E-03 | 1.430E-03 | 1.302E-03 | 1.001E-03 | 7.217E-04 | 1.837E-04 | 2.593E-05 | 3.659E-06 | 5.135E-07 | 1.193E-07 | 7.246E-08 | 1.022E-08 | 1.443E-09 |

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5 more years for cooling used fuel material fission products page 26

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sb123 | 1.774E-01 | 1.774E-01 | 1.775E-01 | 1.776E-01 | 1.779E-01 | 1.782E-01 | 1.787E-01 | 1.789E-01 | 1.789E-01 | 1.789E-01 | 1.789E-01 | 1.789E-01 | 1.789E-01 | 1.789E-01 |
| te123 | 1.448E-04 | 1.449E-04 | 1.451E-04 | 1.458E-04 | 1.475E-04 | 1.491E-04 | 1.518E-04 | 1.526E-04 | 1.528E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 |
| te123m | 7.869E-06 | 7.778E-06 | 7.578E-06 | 6.844E-06 | 5.147E-06 | 3.610E-06 | 8.195E-07 | 9.812E-08 | 1.175E-08 | 1.399E-09 | 2.876E-10 | 1.674E-10 | 2.005E-11 | 2.401E-12 |
| sn124 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 | 2.980E-01 |
| sb124 | 8.208E-05 | 8.021E-05 | 7.616E-05 | 6.226E-05 | 3.542E-05 | 1.755E-05 | 9.312E-07 | 1.393E-08 | 2.083E-10 | 3.079E-12 | 1.344E-13 | 4.605E-14 | 6.887E-16 | 

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te127 | 1.850E-05 | 1.826E-05 | 1.775E-05 | 1.588E-05 | 1.163E-05 | 7.889E-06 | 1.559E-06 | 1.530E-07 | 1.502E-08 | 1.465E-09 | 2.598E-10 | 1.438E-10 | 1.412E-11 | 1.386E-12 |
| te127m | 5.284E-03 | 5.217E-03 | 5.070E-03 | 4.536E-03 | 3.321E-03 | 2.253E-03 | 4.452E-04 | 4.371E-05 | 4.291E-06 | 4.185E-07 | 7.422E-08 | 4.108E-08 | 4.033E-09 | 3.959E-10 |
| i127 | 1.531E+00 | 1.532E+00 | 1.532E+00 | 1.532E+00 | 1.533E+00 | 1.535E+00 | 1.536E+00 | 1.537E+00 | 1.537E+00 | 1.537E+00 | 1.537E+00 | 1.537E+00 | 1.537E+00 | 1.537E+00 |
| xe127 | 1.330E-09 | 1.280E-09 | 1.175E-09 | 8.419E-10 | 3.311E-10 | 1.036E-10 | 8.066E-13 | 7.728E-16 | 7.404E-19 | 6.960E-22 | 3.919E-24 | 6.668E-25 | 6.389E-28 | 6.121E-31 |
| te128 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 | 2.722E+00 |
| xe128 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 | 1.281E-01 |
| te129 | 1.980E-07 | 1.900E-07 | 1.731E-07 | 1.207E-07 | 4.391E-08 | 1.248E-08 | 6.478E-11 | 3.478E-14 | 1.867E-17 | 9.819E-21 | 3.590E-23 | 5.271E-24 | 2.830E-27 | 1.519E-30 |
| te129m | 2.181E-04 | 2.093E-04 | 1.908E-04 | 1.330E-04 | 4.838E-05 | 1.375E-05 | 7.138E-08 | 3.832E-11 | 2.057E-14 | 1.082E-17 | 3.956E-20 | 5.808E-21 | 3.118E-24 | 1.674E-27 |
| i129 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 | 4.823E+00 |
| xe129 | 8.265E-04 | 8.265E-04 | 8.265E-04 | 8.265E-04 | 8.265E-04 | 8.266E-04 | 8.267E-04 | 8.269E-04 | 8.271E-04 | 8.274E-04 | 8.275E-04 | 8.276E-04 | 8.278E-04 | 8.280E-04 |
| xe129m | 2.784E-14 | 2.382E-14 | 1.676E-14 | 4.276E-15 | 9.332E-17 | 7.981E-19 | 1.810E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te130 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 | 9.078E+00 |
| xe130 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 |
| i131 | 1.577E-10 | 1.327E-10 | 8.996E-11 | 1.984E-11 | 2.881E-13 | 1.484E-15 | 4.038E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 | 1.040E+01 |
| xe131m | 6.464E-09 | 5.750E-09 | 4.419E-09 | 1.587E-09 | 9.011E-11 | 2.535E-12 | 8.328E-19 | 4.369E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.714E-16 | 1.486E-16 | 1.077E-16 | 3.087E-17 | 9.357E-19 | 1.216E-20 | 2.469E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 3.065E-19 | 2.717E-19 | 2.071E-19 | 7.213E-20 | 3.762E-21 | 9.521E-23 | 2.012E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe132 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 |
| cs132 | 3.485E-17 | 2.814E-17 | 1.739E-17 | 2.675E-18 | 1.416E-20 | 2.076E-23 | 2.958E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba132 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 | 5.013E-06 |
| xe133 | 3.858E-15 | 2.962E-15 | 1.634E-15 | 1.616E-16 | 2.483E-19 | 7.810E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs133 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 | 2.401E+01 |
| ba133 | 3.199E-06 | 3.198E-06 | 3.196E-06 | 3.186E-06 | 3.157E-06 | 3.123E-06 | 2.982E-06 | 2.792E-06 | 2.614E-06 | 2.447E-06 | 2.330E-06 | 2.291E-06 | 2.145E-06 | 2.008E-06 |
| xe134 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 | 3.169E+01 |
| cs134 | 2.491E+00 | 2.486E+00 | 2.476E+00 | 2.437E+00 | 2.329E+00 | 2.202E+00 | 1.742E+00 | 1.246E+00 | 8.908E-01 | 6.364E-01 | 4.957E-01 | 4.551E-01 | 3.254E-01 | 2.327E-01 |
| ba134 | 1.745E+00 | 1.749E+00 | 1.759E+00 | 1.799E+00 | 1.906E+00 | 2.033E+00 | 2.493E+00 | 2.990E+00 | 3.345E+00 | 3.599E+00 | 3.740E+00 | 3.781E+00 | 3.910E+00 | 4.003E+00 |
| cs135 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 |
| ba135 | 7.976E-03 | 7.976E-03 | 7.976E-03 | 7.977E-03 | 7.977E-03 | 7.978E-03 | 7.981E-03 | 7.984E-03 | 7.988E-03 | 7.992E-03 | 7.995E-03 | 7.996E-03 | 8.000E-03 | 8.004E-03 |
| xe136 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 | 4.708E+01 |
| cs136 | 6.491E-08 | 5.842E-08 | 4.609E-08 | 1.834E-08 | 1.388E-09 | 5.586E-11 | 8.204E-17 | 3.670E-25 | 1.642E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 | 7.857E-01 |
| ba136m | 1.950E-15 | 1.755E-15 | 1.384E-15 | 5.508E-16 | 4.170E-17 | 1.678E-18 | 2.464E-24 | 1.102E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.623E+01 | 2.623E+01 | 2.622E+01 | 2.619E+01 | 2.611E+01 | 2.601E+01 | 2.560E+01 | 2.501E+01 | 2.444E+01 | 2.389E+01 | 2.348E+01 | 2.334E+01 | 2.281E+01 | 2.229E+01 |

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5 more years for cooling used fuel material fission products page 27

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba137 | 1.342E+00 | 1.346E+00 | 1.353E+00 | 1.382E+00 | 1.463E+00 | 1.563E+00 | 1.978E+00 | 2.561E+00 | 3.130E+00 | 3.688E+00 | 4.095E+00 | 4.232E+00 | 4.764E+00 | 5.283E+00 |
| ba137m | 4.007E-06 | 4.007E-06 | 4.006E-06 | 4.001E-06 | 3.989E-06 | 3.974E-06 | 3.910E-06 | 3.821E-06 | 3.734E-06 | 3.649E-06 | 3.587E-06 | 3.566E-06 | 3.485E-06 | 3.405E-06 |
| la137 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.372E-06 | 8.371E-06 | 8.371E-06 | 8.371E-06 | 8.371E-06 | 8.371E-06 | 8.371E-06 |
| ba138 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 | 2.613E+01 |
| la138 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 | 4.584E-04 |
| ce138 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 | 1.762E-07 |
| la139 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 |
| ce139 | 2.804E-05 | 2.776E-05 | 2.714E-05 | 2.485E-05 | 1.942E-05 | 1.428E-05 | 5.954E-06 | 6.291E-07 | 1.001E-07 | 1.585E-08 | 4.028E-09 | 2.522E-09 | 4.012E-10 | 6.384E-11 |
| ba140 | 8.577E-07 | 7.694E-07 | 6.024E-07 | 2.327E-07 | 1.623E-08 | 5.893E-10 | 5.637E-16 | 1.366E-24 | 3.308E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.300E-07 | 1.166E-07 | 9.131E-08 | 3.534E-08 | 2.459E-09 | 8.931E-11 | 8.544E-17 | 2.070E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce140 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 | 2.477E+01 |
| ce141 | 5.734E-03 | 5.495E-03 | 4.992E-03 | 3.437E-03 | 1.209E-03 | 3.293E-04 | 1.433E-06 | 5.973E-10 | 2.490E-13 | 1.016E-16 | 3.077E-19 | 4.236E-20 | 1.766E-23 | 7.362E-27 |
| pr141 | 2.211E+01 | 2.211E+01 | 2.211E+01 | 2.211E+01 | 2.211E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 |
| ce142 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 | 2.153E+01 |
| nd142 | 3.253E-01 | 3.253E-01 | 3.252E-01 | 3.252E-01 | 3.252E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 | 3.253E-01 |
| pr143 | 1.802E-06 | 1.627E-06 | 1.293E-06 | 5.289E-07 | 4.329E-08 | 1.919E-09 | 4.230E-15 | 3.383E-23 | 2.706E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd143 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 |
| pm143 | 2.911E-14 | 2.896E-14 | 2.862E-14 | 2.734E-14 | 2.405E-14 | 2.050E-14 | 1.052E-14 | 4.051E-15 | 1.559E-15 | 5.986E-16 | 2.939E-16 | 2.304E-16 | 8.869E-17 | 3.414E-17 |
| ce144 | 3.373E+00 | 3.357E+00 | 3.321E+00 | 3.182E+00 | 2.825E+00 | 2.435E+00 | 1.309E+00 | 5.388E-01 | 2.217E-01 | 9.100E-02 | 4.695E-02 | 3.744E-02 | 1.541E-02 | 6.340E-03 |
| pr144 | 1.421E-04 | 1.414E-04 | 1.399E-04 | 1.340E-04 | 1.190E-04 | 1.026E-04 | 5.515E-05 | 2.269E-05 | 9.338E-06 | 3.833E-06 | 1.978E-06 | 1.577E-06 | 6.490E-07 | 2.670E-07 |
| pr144m | 5.653E-07 | 5.625E-07 | 5.564E-07 | 5.332E-07 | 4.733E-07 | 4.080E-07 | 2.194E-07 | 9.028E-08 | 3.715E-08 | 1.525E-08 | 7.868E-09 | 6.275E-09 | 2.582E-09 | 1.062E-09 |
| nd144 | 1.738E+01 | 1.739E+01 | 1.743E+01 | 1.757E+01 | 1.792E+01 | 1.831E+01 | 1.944E+01 | 2.021E+01 | 2.053E+01 | 2.066E+01 | 2.070E+01 | 2.071E+01 | 2.073E+01 | 2.074E+01 |
| pm144 | 8.786E-12 | 8.753E-12 | 8.678E-12 | 8.393E-12 | 7.643E-12 | 6.803E-12 | 4.180E-12 | 2.082E-12 | 1.037E-12 | 5.156E-13 | 3.067E-13 | 2.568E-13 | 1.279E-13 | 6.372E-14 |
| sm144 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 | 9.780E-13 |
| nd145 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 | 1.216E+01 |
| pm145 | 6.000E-07 | 5.999E-07 | 5.997E-07 | 5.988E-07 | 5.961E-07 | 5.928E-07 | 5.785E-07 | 5.577E-07 | 5.369E-07 | 5.165E-07 | 5.018E-07 | 4.968E-07 | 4.778E-07 | 4.595E-07 |
| sm145 | 5.643E-09 | 5.620E-09 | 5.569E-09 | 5.374E-09 | 4.863E-09 | 4.294E-09 | 2.553E-09 | 1.213E-09 | 5.764E-10 | 2.733E-10 | 1.570E-10 | 1.299E-10 | 6.171E-11 | 2.932E-11 |
| nd146 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 | 1.326E+01 |
| pm146 | 7.462E-06 | 7.456E-06 | 7.445E-06 | 7.400E-06 | 7.277E-06 | 7.126E-06 | 6.529E-06 | 5.760E-06 | 5.082E-06 | 4.482E-06 | 4.083E-06 | 3.955E-06 | 3.489E-06 | 3.078E-06 |
| sm146 | 5.555E-05 | 5.556E-05 | 5.558E-05 | 5.562E-05 | 5.567E-05 | 5.567E-05 | 5.587E-05 | 5.613E-05 | 5.636E-05 | 5.657E-05 | 5.670E-05 | 5.674E-05 | 5.690E-05 | 5.704E-05 |
| nd147 | 3.624E-08 | 3.194E-08 | 2.404E-08 | 7.965E-09 | 3.612E-10 | 7.681E-12 | 7.838E-19 | 7.713E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.978E+00 | 2.974E+00 | 2.964E+00 | 2.927E+00 | 2.825E+00 | 2.703E+00 | 2.248E+00 | 1.726E+00 | 1.326E+00 | 1.017E+00 | 8.356E-01 | 7.812E-01 | 5.999E-01 | 4.607E-01 |
| sm147 | 1.890E+00 | 1.894E+00 | 1.904E+00 | 1.941E+00 | 2.043E+00 | 2.165E+00 | 2.621E+00 | 3.142E+00 | 3.543E+00 | 3.851E+00 | 4.033E+00 | 4.087E+00 | 4.269E+00 | 4.408E+00 |
| eu147 | 9.889E-20 | 9.336E-20 | 8.203E-20 | 4.959E-20 | 1.211E-20 | 2.096E-21 | 1.368E-24 | 3.775E-29 | 1.042E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd148 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 | 7.820E+00 |
| pm148 | 5.110E-06 | 4.941E-06 | 4.582E-06 | 3.415E-06 | 1.500E-06 | 5.394E-07 | 7.453E-09 | 1.626E-11 | 3.549E-14 | 7.616E-17 | 7.919E-19 | 1.662E-19 | 3.627E-22 | 7.915E-25 |
| pm148m | 8.141E-04 | 7.873E-04 | 7.300E-04 | 5.442E-04 | 2.390E-04 | 8.585E-05 | 1.187E-06 | 2.591E-09 | 5.659E-12 | 1.212E-14 | 1.262E-17 | 2.648E-17 | 5.779E-20 | 1.261E-22 |
| sm148 | 3.150E+00 | 3.150E+00 | 3.150E+00 | 3.150E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 | 3.151E+00 |
| sm149 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 | 1.000E-01 |
| eu149 | 1.436E-12 | 1.415E-12 | 1.368E-12 | 1.201E-12 | 8.339E-13 | 5.295E-13 | 7.931E-14 | 5.238E-15 | 3.459E-16 | 2.267E-17 | 2.992E-18 | 1.497E-18 | 9.887E-20 | 6.529E-21 |
| nd150 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 | 4.614E+00 |
| sm150 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 | 6.597E+00 |
| sm151 | 4.247E-01 | 4.247E-01 | 4.246E-01 | 4.245E-01 | 4.240E-01 | 4.235E-01 | 4.212E-01 | 4.180E-01 | 4.148E-01 | 4.116E-01 | 4.092E-01 | 4.084E-01 | 4.053E-01 | 4.022E-01 |
| eu151 | 2.850E-03 | 2.868E-03 | 2.908E-03 | 3.064E-03 | 3.503E-03 | 4.048E-03 | 6.315E-03 | 9.548E-03 | 1.275E-02 | 1.594E-02 | 1.830E-02 | 1.910E-02 | 2.223E-02 | 2.534E-02 |
| gd151 | 1.595E-09 | 1.577E-09 | 1.538E-09 | 1.394E-09 | 1.060E-09 | 7.540E-10 | 1.813E-10 | 2.356E-11 | 3.063E-12 | 3.959E-13 | 8.654E-14 | 5.146E-14 | 6.889E-15 | 8.695E-16 |
| sm152 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 | 2.552E+00 |
| eu152 | 6.370E-04 | 6.368E-04 | 6.364E-04 | 6.349E-04 | 6.305E-04 | 6.251E-04 | 6.032E-04 | 5.731E-04 | 5.445E-04 | 5.173E-04 | 4.979E-04 | 4.915E-04 | 4.670E-04 | 4.437E-04 |
| gd152 | 1.295E-03 | 1.295E-03 | 1.296E-03 | 1.296E-03 | 1.297E-03 | 1.299E-03 | 1.305E-03 | 1.313E-03 | 1.321E-03 | 1.329E-03 | 1.334E-03 | 1.336E-03 | 1.343E-03 | 1.349E-03 |
| eu153 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 | 3.300E+00 |
| gd153 | 5.606E-05 | 5.574E-05 | 5.502E-05 | 5.232E-05 | 4.542E-05 | 3.810E-05 | 1.826E-05 | 6.376E-06 | 2.226E-06 | 7.747E-07 | 3.536E-07 | 2.705E-07 | 9.441E-08 | 3.296E-08 |
| sm154 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 | 1.311E+00 |
| eu154 | 9.536E-01 | 9.532E-01 | 9.523E-01 | 9.486E-01 | 9.384E-01 | 9.258E-01 | 8.752E-01 | 8.075E-01 | 7.450E-01 | 6.872E-01 | 6.472E-01 | 6.340E-01 | 5.850E-01 | 5.397E-01 |

1

5 more years for cooling used fuel material fission products page 28

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gd154 | 1.361E-01 | 1.365E-01 | 1.375E-01 | 1.411E-01 | 1.513E-01 | 1.639E-01 | 2.145E-01 | 2.822E-01 | 3.447E-01 | 4.025E-01 | 4.425E-01 | 4.557E-01 | 5.047E-01 | 5.500E-01 |
| eu155 | 2.323E-01 | 2.321E-01 | 2.317E-01 | 2.301E-01 | 2.256E-01 | 2.202E-01 | 1.989E-01 | 1.719E-01 | 1.486E-01 | 1.284E-01 | 1.152E-01 | 1.110E-01 | 9.592E-02 | 8.291E-02 |
| gd155 | 2.698E-02 | 2.716E-02 | 2.758E-02 | 2.919E-02 | 3.365E-02 | 3.908E-02 | 6.039E-02 | 8.736E-02 | 1.107E-01 | 1.309E-01 | 1.441E-01 | 1.483E-01 | 1.633E-01 | 1.763E-01 |
| eu156 | 1.915E-06 | 1.748E-06 | 1.424E-06 | 6.407E-07 | 6.848E-08 | 4.233E-09 | 3.742E-14 | 2.186E-21 | 1.277E-28 | 7.126E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| gd156 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 | 2.517E+00 |
| dy156 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 |
| gd157 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 | 5.959E-03 |
| tb157 | 1.387E-08 | 1.387E-08 | 1.387E-08 | 1.386E-08 | 1.385E-08 | 1.382E-08 | 1.373E-08 | 1.360E-08 | 1.346E-08 | 1.333E-08 | 1.324E-08 | 1.320E-08 | 1.307E-08 | 1.295E-08 |
| gd158 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 | 7.472E-01 |
| tb158 | 1.776E-06 | 1.776E-06 | 1.776E-06 | 1.775E-06 | 1.775E-06 | 1.773E-06 | 1.769E-06 | 1.762E-06 | 1.755E-06 | 1.748E-06 | 1.743E-06 | 1.742E-06 | 1.735E-06 | 1.728E-06 |
| dy158 | 2.195E-09 | 2.201E-09 | 2.215E-09 | 2.269E-09 | 2.421E-09 | 2.611E-09 | 3.401E-09 | 4.529E-09 | 5.652E-09 | 6.774E-09 | 7.605E-09 | 7.889E-09 | 8.999E-09 | 1.011E-08 |
| tb159 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 |
| dy159 | 5.002E-09 | 4.954E-09 | 4.849E-09 | 4.458E-09 | 3.524E-09 | 2.629E-09 | 7.731E-10 | 1.341E-10 | 2.325E-11 | 4.012E-12 | 1.087E-12 | 6.957E-13 | 1.207E-13 | 2.092E-14 |
| gd160 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 | 5.179E-02 |
| tb160 | 3.570E-04 | 3.502E-04 | 3.354E-04 | 2.836E-04 | 1.773E-04 | 9.879E-05 | 8.570E-06 | 2.590E-07 | 7.825E-09 | 2.342E-10 | 1.726E-11 | 7.077E-12 | 2.139E-13 | 6.463E-15 |
| dy160 | 1.450E-02 | 1.450E-02 | 1.452E-02 | 1.457E-02 | 1.468E-02 | 1.476E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 | 1.485E-02 |
| tb161 | 1.329E-14 | 1.088E-14 | 6.924E-15 | 1.195E-15 | 8.742E-18 | 1.917E-20 | 1.470E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| dy161 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 | 1.968E-02 |
| dy162 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 | 1.210E-02 |
| er162 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 | 7.011E-14 |
| dy163 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 |
| ho163 | 3.723E-09 | 3.723E-09 | 3.723E-09 | 3.723E-09 | 3.723E-09 | 3.722E-09 | 3.722E-09 | 3.722E-09 | 3.721E-09 | 3.720E-09 | 3.720E-09 | 3.720E-09 | 3.719E-09 | 3.719E-09 |
| dy164 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 | 4.092E-03 |
| er164 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 | 4.879E-08 |
| ho165 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 | 3.987E-03 |
| ho166m | 1.040E-05 | 1.040E-05 | 1.040E-05 | 1.040E-05 | 1.040E-05 | 1.040E-05 | 1.040E-05 | 1.039E-05 | 1.038E-05 | 1.038E-05 | 1.037E-05 | 1.037E-05 | 1.037E-05 | 1.036E-05 |
| er166 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 | 1.274E-03 |
| er167 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 | 6.402E-05 |
| er168 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 | 2.012E-04 |
| tm168 | 1.910E-11 | 1.882E-11 | 1.820E-11 | 1.598E-11 | 1.109E-11 | 7.043E-12 | 1.055E-12 | 6.967E-14 | 4.601E-15 | 3.016E-16 | 3.980E-17 | 1.992E-17 | 1.315E-18 | 8.686E-20 |
| yb168 | 3.240E-14 | 3.242E-14 | 3.249E-14 | 3.277E-14 | 3.352E-14 | 3.436E-14 | 3.430E-14 | 3.431E-14 | 3.431E-14 | 3.431E-14 | 3.431E-14 | 3.431E-

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 2.637E-02 | 2.637E-02 | 2.637E-02 | 2.637E-02 | 2.638E-02 | 2.639E-02 | 2.644E-02 | 2.651E-02 | 2.657E-02 | 2.662E-02 | 2.666E-02 | 2.668E-02 | 2.673E-02 | 2.678E-02 |
| cu | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 | 6.664E-09 |
| zn | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 | 8.331E-05 |
| ga | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 | 1.415E-04 |
| ge | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 | 8.825E-03 |
| as | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 | 2.873E-03 |
| se | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 | 9.196E-01 |
| br | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 |
| kr | 4.561E+00 | 4.561E+00 | 4.561E+00 | 4.560E+00 | 4.557E+00 | 4.554E+00 | 4.541E+00 | 4.524E+00 | 4.507E+00 | 4.492E+00 | 4.481E+00 | 4.477E+00 | 4.464E+00 | 4.451E+00 |
| rb | 4.049E+00 | 4.049E+00 | 4.049E+00 | 4.050E+00 | 4.053E+00 | 4.056E+00 | 4.069E+00 | 4.086E+00 | 4.103E+00 | 4.118E+00 | 4.129E+00 | 4.133E+00 | 4.146E+00 | 4.159E+00 |
| sr | 9.582E+00 | 9.581E+00 | 9.579E+00 | 9.570E+00 | 9.547E+00 | 9.521E+00 | 9.424E+00 | 9.289E+00 | 9.158E+00 | 9.030E+00 | 8.936E+00 | 8.905E+00 | 8.783E+00 | 8.664E+00 |
| y | 4.985E+00 | 4.984E+00 | 4.983E+00 | 4.980E+00 | 4.974E+00 | 4.969E+00 | 4.965E+00 | 4.964E+00 | 4.964E+00 | 4.964E+00 | 4.964E+00 | 4.964E+00 | 4.964E+00 | 4.964E+00 |
| zr | 5.431E+01 | 5.430E+01 | 5.430E+01 | 5.430E+01 | 5.430E+01 | 5.432E+01 | 5.440E+01 | 5.453E+01 | 5.466E+01 | 5.479E+01 | 5.489E+01 | 5.492E+01 | 5.504E+01 | 5.516E+01 |
| nb | 9.672E-02 | 9.476E-02 | 9.050E-02 | 7.559E-02 | 4.535E-02 | 2.380E-02 | 1.599E-03 | 1.069E-04 | 8.207E-05 | 8.642E-05 | 9.008E-05 | 9.133E-05 | 9.625E-05 | 1.012E-04 |
| mo | 6.744E+01 | 6.744E+01 | 6.745E+01 | 6.748E+01 | 6.754E+01 | 6.758E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 | 6.762E+01 |
| tc | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 | 1.634E+01 |
| ru | 6.389E+01 | 6.388E+01 | 6.385E+01 | 6.372E+01 | 6.339E+01 | 6.302E+01 | 6.187E+01 | 6.094E+01 | 6.046E+01 | 6.023E+01 | 6.013E+01 | 6.010E+01 | 6.004E+01 | 6.001E+01 |
| rh | 1.520E+01 | 1.521E+01 | 1.521E+01 | 1.521E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 | 1.522E+01 |
| pd | 5.388E+01 | 5.389E+01 | 5.393E+01 | 5.405E+01 | 5.438E+01 | 5.474E+01 | 5.589E+01 | 5.682E+01 | 5.729E+01 | 5.753E+01 | 5.763E+01 | 5.765E+01 | 5.771E+01 | 5.775E+01 |
| ag | 3.527E+00 | 3.527E+00 | 3.527E+00 | 3.525E+00 | 3.522E+00 | 3.519E+00 | 3.511E+00 | 3.506E+00 | 3.504E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 | 3.503E+00 |
| cd | 4.675E+00 | 4.675E+00 | 4.675E+00 | 4.676E+00 | 4.679E+00 | 4.682E+00 | 4.691E+00 | 4.696E+00 | 4.698E+00 | 4.698E+00 | 4.699E+00 | 4.699E+00 | 4.699E+00 | 4.699E+00 |
| in | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.416E-02 | 5.417E-02 | 5.417E-02 | 5.418E-02 | 5.418E-02 | 5.418E-02 | 5.419E-02 | 5.419E-02 | 5.419E-02 | 5.419E-02 | 5.420E-02 |
| sn | 1.855E+00 | 1.855E+00 | 1.855E+00 | 1.855E+00 | 1.855E+00 | 1.855E+00 | 1.854E+00 | 1.854E+00 | 1.853E+00 | 1.853E+00 | 1.853E+00 | 1.853E+00 | 1.853E+00 | 1.853E+00 |
| sb | 5.523E-01 | 5.520E-01 | 5.513E-01 | 5.485E-01 | 5.410E-01 | 5.319E-01 | 4.974E-01 | 4.569E-01 | 4.254E-01 | 4.008E-01 | 3.862E-01 | 3.818E-01 | 3.671E-01 | 3.556E-01 |
| te | 1.201E+01 | 1.201E+01 | 1.201E+01 | 1.201E+01 | 1.202E+01 | 1.202E+01 | 1.206E+01 | 1.210E+01 | 1.216E+01 | 1.217E+01 | 1.217E+01 | 1.217E+01 | 1.219E+01 | 1.220E+01 |
| i | 6.354E+00 | 6.354E+00 | 6.354E+00 | 6.355E+00 | 6.356E+00 | 6.357E+00 | 6.359E+00 | 6.360E+00 | 6.360E+00 | 6.360E+00 | 6.360E+00 | 6.360E+00 | 6.360E+00 | 6.360E+00 |
| xe | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 | 1.153E+02 |
| cs | 6.599E+01 | 6.598E+01 | 6.597E+01 | 6.590E+01 | 6.571E+01 | 6.548E+01 | 6.461E+01 | 6.353E+01 | 6.260E+01 | 6.179E+01 | 6.124E+01 | 6.107E+01 | 6.041E+01 | 5.979E+01 |
| ba | 3.001E+01 | 3.002E+01 | 3.003E+01 | 3.010E+01 | 3.029E+01 | 3.052E+01 | 3.139E+01 | 3.247E+01 | 3.340E+01 | 3.421E+01 | 3.476E+01 | 3.493E+01 | 3.560E+01 | 3.621E+01 |
| la | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 | 2.421E+01 |
| ce | 4.968E+01 | 4.967E+01 | 4.963E+01 | 4.949E+01 | 4.913E+01 | 4.874E+01 | 4.761E+01 | 4.684E+01 | 4.653E+01 | 4.640E+01 | 4.635E+01 | 4.634E+01 | 4.632E+01 | 4.631E+01 |
| pr | 2.211E+01 | 2.211E+01 | 2.211E+01 | 2.211E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 | 2.212E+01 |
| nd | 7.172E+01 | 7.174E+01 | 7.178E+01 | 7.191E+01 | 7.227E+01 | 7.266E+01 | 7.379E+01 | 7.456E+01 | 7.488E+01 | 7.501E+01 | 7.505E+01 | 7.506E+01 | 7.508E+01 | 7.509E+01 |
| pm | 2.979E+00 | 2.975E+00 | 2.965E+00 | 2.928E+00 | 2.825E+00 | 2.703E+00 | 2.248E+00 | 1.726E+00 | 1.326E+00 | 1.017E+00 | 8.356E-01 | 7.812E-01 | 5.999E-01 | 4.607E-01 |
| sm | 1.603E+01 | 1.603E+01 | 1.604E+01 | 1.608E+01 | 1.618E+01 | 1.630E+01 | 1.675E+01 | 1.727E+01 | 1.767E+01 | 1.797E+01 | 1.815E+01 | 1.821E+01 | 1.839E+01 | 1.852E+01 |
| eu | 4.490E+00 | 4.489E+00 | 4.488E+00 | 4.483E+00 | 4.468E+00 | 4.451E+00 | 4.381E+00 | 4.290E+00 | 4.207E+00 | 4.132E+00 | 4.082E+00 | 4.065E+00 | 4.004E+00 | 3.949E+00 |
| gd | 3.487E+00 | 3.487E+00 | 3.489E+00 | 3.494E+00 | 3.509E+00 | 3.527E+00 | 3.598E+00 | 3.693E+00 | 3.779E+00 | 3.857E+00 | 3.910E+00 | 3.928E+00 | 3.992E+00 | 4.050E+00 |
| tb | 1.137E-01 | 1.137E-01 | 1.137E-01 | 1.136E-01 | 1.135E-01 | 1.135E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 | 1.134E-01 |
| dy | 6.044E-02 | 6.045E-02 | 6.046E-02 | 6.052E-02 | 6.062E-02 | 6.070E-02 | 6.079E-02 | 6.080E-02 | 6.080E-02 | 6.080E-02 | 6.080E-02 | 6.080E-02 | 6.080E-02 | 6.080E-02 |
| ho | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 | 3.997E-03 |
| er | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 | 1.549E-03 |
| tm | 1.905E-05 | 1.903E-05 | 1.900E-05 | 1.887E-05 | 1.855E-05 | 1.822E-05 | 1.735E-05 | 1.669E-05 | 1.629E-05 | 1.602E-05 | 1.587E-05 | 1.583E-05 | 1.570E-05 | 1.560E-05 |
| yb | 2.028E-05 | 2.029E-05 | 2.033E-05 | 2.046E-05 | 2.077E-05 | 2.110E-05 | 2.197E-05 | 2.263E-05 | 2.304E-05 | 2.331E-05 | 2.346E-05 | 2.350E-05 | 2.363E-05 | 2.372E-05 |
| totals | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 | 7.309E+02 |

1

5 more years for cooling used fuel material fission products page 30

0

nuclide radioactivity, curies
basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.197E+01 | 1.197E+01 | 1.196E+01 | 1.193E+01 | 1.184E+01 | 1.173E+01 | 1.128E+01 | 1.066E+01 | 1.008E+01 | 9.525E+00 | 9.134E+00 | 9.004E+00 | 8.512E+00 | 8.046E+00 |
| ga 68 | 2.507E-17 | 2.494E-17 | 2.466E-17 | 2.358E-17 | 2.080E-17 | 1.780E-17 | 9.269E-18 | 3.643E-18 | 1.432E-18 | 5.615E-19 | 2.800E-19 | 2.207E-19 | 8.675E-20 | 3.410E-20 |
| ge 68 | 2.507E-17 | 2.494E-17 | 2.465E-17 | 2.358E-17 | 2.080E-17 | 1.779E-17 | 9.267E-18 | 3.643E-18 | 1.432E-18 | 5.614E-19 | 2.799E-19 | 2.207E-19 | 8.674E-20 | 3.409E-20 |
| ge 71 | 5.102E-12 | 4.519E-12 | 3.440E-12 | 1.190E-12 | 6.097E-14 | 1.509E-15 | 2.901E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 6.498E-08 | 6.387E-08 | 6.144E-08 | 5.282E-08 | 3.460E-08 | 2.044E-08 | 2.262E-09 | 9.687E-11 | 4.148E-12 | 1.761E-13 | 1.683E-14 | 7.541E-15 | 3.229E-16 | 1.383E-17 |
| as 73 | 6.498E-08 | 6.387E-08 | 6.144E-08 | 5.282E-08 | 3.460E-08 | 2.044E-08 | 2.262E-09 | 9.687E-11 | 4.148E-12 | 1.761E-13 | 1.683E-14 | 7.541E-15 | 3.229E-16 | 1.383E-17 |
| as 74 | 7.527E-09 | 6.962E-09 | 5.841E-09 | 2.951E-09 | 4.365E-10 | 4.042E-11 | 1.935E-15 | 1.269E-21 | 8.321E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 2.391E-06 | 2.363E-06 | 2.303E-06 | 2.081E-06 | 1.567E-06 | 1.101E-06 | 2.518E-07 | 3.046E-08 | 3.686E-09 | 4.434E-10 | 9.188E-11 | 5.364E-11 | 6.490E-12 | 7.853E-13 |
| se 79 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 |
| kr 81 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 | 1.386E-08 |
| kr 83m | 1.814E-05 | 1.785E-05 | 1.722E-05 | 1.496E-05 | 1.009E-05 | 6.176E-06 | 7.947E-07 | 4.222E-08 | 2.243E-09 | 1.182E-10 | 1.327E-11 | 6.281E-12 | 3.337E-13 | 1.773E-14 |
| rb 83 | 2.441E-05 | 2.402E-05 | 2.317E-05 | 2.012E-05 | 1.357E-05 | 8.309E-06 | 1.069E-06 | 5.680E-08 | 3.018E-09 | 1.590E-10 | 1.785E-11 | 8.450E-12 | 4.489E-13 | 2.385E-14 |
| rb 84 | 9.058E-05 | 8.683E-05 | 7.896E-05 | 5.456E-05 | 1.938E-05 | 5.345E-06 | 2.449E-08 | 1.099E-11 | 4.935E-15 | 2.169E-18 | 6.941E-21 | 9.737E-22 | 4.371E-25 | 1.962E-28 |
| kr 85 | 1.176E+02 | 1.176E+02 | 1.175E+02 | 1.171E+02 | 1.161E+02 | 1.149E+02 | 1.098E+02 | 1.030E+02 | 9.655E+01 | 9.052E+01 | 8.627E+01 | 8.487E+01 | 7.958E+01 | 7.461E+01 |
| sr 85 | 7.271E-06 | 7.117E-06 | 6.783E-06 | 5.626E-06 | 3.332E-06 | 1.736E-06 | 1.137E-07 | 2.296E-09 | 4.639E-11 | 9.272E-13 | 5.063E-14 | 1.873E-14 | 3.785E-16 | 7.646E-18 |
| rb 86 | 4.294E-03 | 3.986E-03 | 3.371E-03 | 1.758E-03 | 2.840E-04 | 2.936E-05 | 2.226E-09 | 2.818E-15 | 3.568E-21 | 4.353E-27 | 1.754E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 |
| y 88 | 7.325E-03 | 7.231E-03 | 7.022E-03 | 6.267E-03 | 4.558E-03 | 3.066E-03 | 5.843E-04 | 5.447E-05 | 5.078E-06 | 4.704E-07 | 8.027E-08 | 4.385E-08 | 4.088E-09 | 3.812E-10 |
| zr 88 | 2.354E-09 | 2.315E-09 | 2.230E-09 | 1.928E-09 | 1.283E-09 | 7.728E-10 | 9.283E-11 | 4.469E-12 | 2.151E-13 | 1.027E-14 | 1.071E-15 | 4.945E-16 | 2.381E-17 | 1.146E-18 |
| sr 89 | 3.468E+02 | 3.374E+02 | 3.172E+02 | 2.495E+02 | 1.274E+02 | 5.518E+01 | 1.670E+00 | 1.117E-02 | 7.475E-05 | 4.934E-07 | 1.182E-08 | 3.801E-09 | 2.209E-11 | 1.478E-13 |
| y 89m | 3.343E-02 | 3.253E-02 | 3.058E-02 | 2.405E-02 | 1.228E-02 | 5.319E-03 | 1.609E-04 | 1.077E-06 | 7.206E-09 | 4.756E-11 | 1.140E-12 | 3.183E-13 | 2.130E-15 | 1.425E-17 |
| sr 90 | 8.000E+02 | 7.999E+02 | 7.997E+02 | 7.987E+02 | 7.962E+02 | 7.930E+02 | 7.797E+02 | 7.612E+02 | 7.431E+02 | 7.254E+02 | 7.125E+02 | 7.082E+02 | 6.913E+02 | 6.749E+02 |
| y 90 | 8.002E+02 | 8.001E+02 | 7.999E+02 | 7.989E+02 | 7.964E+02 | 7.932E+02 | 7.799E+02 | 7.614E+02 | 7.433E+02 | 7.256E+02 | 7.127E+02 | 7.083E+02 | 6.915E+02 | 6.751E+02 |
| y 91 | 7.845E+02 | 7.662E+02 | 7.264E+02 | 5.904E+02 | 3.304E+02 | 1.604E+02 | 7.820E+00 | 1.036E-01 | 1.372E-03 | 1.796E-05 | 7.160E-07 | 2.379E-07 | 3.151E-09 | 4.174E-11 |
| nb 91 | 1.011E-09 | 1.011E-09 | 1.011E-09 | 1.011E-09 | 1.011E-09 | 1.011E-09 | 1.010E-09 | 1.009E-09 | 1.008E-09 | 1.007E-09 | 1.006E-09 | 1.006E-09 | 1.005E-09 | 1.004E-09 |
| nb 91m | 3.549E-12 | 3.469E-12 | 3.296E-12 | 2.700E-12 | 1.546E-12 | 7.715E-13 | 4.227E-14 | 6.617E-16 | 1.036E-17 | 1.603E-19 | 7.236E-21 | 2.509E-21 | 3.927E-23 | 6.147E-25 |
| nb 92 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 | 1.703E-12 |
| nb 92m | 2.064E-14 | 1.800E-14 | 1.324E-14 | 4.008E-15 | 1.411E-16 | 2.190E-18 | 5.992E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 |
| nb 93m | 2.386E-03 | 2.392E-03 | 2.405E-03 | 2.455E-03 | 2.594E-03 | 2.766E-03 | 3.471E-03 | 4.445E-03 | 5.377E-03 | 6.273E-03 | 6.915E-03 | 7.129E-03 | 7.949E-03 | 8.734E-03 |
| mo 93 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.901E-09 | 6.901E-09 | 6.899E-09 | 6.898E-09 | 6.897E-09 | 6.896E-09 | 6.896E-09 | 6.895E-09 | 6.893E-09 |
| nb 94 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 |
| zr 95 | 1.839E+03 | 1.800E+03 | 1.714E+03 | 1.418E+03 | 8.344E+02 | 4.311E+02 | 2.728E+01 | 5.246E-01 | 1.009E-02 | 1.919E-04 | 1.010E-05 | 3.692E-06 | 7.100E-08 | 1.365E-09 |
| nb 95 | 3.796E+03 | 3.719E+03 | 3.552E+03 | 2.966E+03 | 1.779E+03 | 9.321E+02 | 5.999E+01 | 1.193E+00 | 2.298E-02 | 4.370E-04 | 2.233E-05 | 8.145E-06 | 1.615E-07 | 3.110E-09 |
| nb 95m | 2.105E+01 | 2.060E+01 | 1.962E+01 | 1.623E+01 | 9.553E+00 | 4.935E+00 | 3.122E-01 | 6.005E-03 | 1.155E-04 | 2.197E-06 | 1.156E-07 | 4.226E-08 | 8.127E-10 | 1.563E-11 |
| tc 95 | 2.018E-13 | 1.972E-13 | 1.874E-13 | 1.536E-13 | 8.802E-14 | 4.401E-14 | 2.427E-15 | 3.836E-17 | 6.062E-19 | 9.471E-21 | 4.306E-22 | 1.497E-22 | 2.365E-24 | 0.000E+00 |
| tc 95m | 5.129E-12 | 5.014E-12 | 4.764E-12 | 3.905E-12 | 2.238E-12 | 1.119E-12 | 6.171E-14 | 9.751E-16 | 1.541E-17 | 2.408E-19 | 1.095E-20 | 3.805E-21 | 6.013E-23 | 9.502E-25 |
| zr 96 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 | 2.713E-15 |
| tc 97 | 1.514E-10 | 1.515E-10 | 1.515E-10 | 1.517E-10 | 1.521E-10 | 1.524E-10 | 1.529E-10 | 1.530E-10 | 1.530E-10 | 1.530E-10 | 1.530E-10 | 1.530E-10 | 1.530E-10 | 1.530E-10 |
| tc 97m | 2.803E-05 | 2.760E-05 | 2.667E-05 | 2.334E-05 | 1.607E-05 | 1.010E-05 | 1.448E-06 | 8.981E-08 | 5.570E-09 | 3.429E-10 | 4.319E-11 | 2.127E-11 | 1.319E-12 | 8.181E-14 |
| tc 98 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 | 1.551E-07 |
| tc 99 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 |
| rh 99 | 2.961E-16 | 2.716E-16 | 2.238E-16 | 1.054E-16 | 1.278E-17 | 9.245E-19 | 1.578E-23 | 2.362E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 | 1.003E-14 |
| rh101 | 1.049E-05 | 1.047E-05 | 1.045E-05 | 1.034E-05 | 1.005E-05 | 9.708E-06 | 8.384E-06 | 6.796E-06 | 5.510E-06 | 4.464E-06 | 3.818E-06 | 3.619E-06 | 2.934E-06 | 2.378E-06 |
| rh102 | 9.634E-02 | 9.570E-02 | 9.427E-02 | 8.892E-02 | 7.549E-02 | 6.158E-02 | 2.629E-02 | 7.796E-03 | 2.333E-03 | 7.132E-04 | 3.068E-04 | 2.329E-04 | 8.734E-05 | 4.125E-05 |
| rh102m | 3.233E-02 | 3.229E-02 | 3.222E-02 | 3.193E-02 | 3.115E-02 | 3.020E-02 | 2.654E-02 | 2.205E-02 | 1.833E-02 | 1.522E-02 | 1.326E-02 | 1.265E-02 | 1.051E-02 | 8.736E-03 |
| ru103 | 5.211E+02 | 5.030E+02 | 4.646E+02 | 3.410E+02 | 1.435E+02 | 4.888E+01 | 5.410E-01 | 8.582E-04 | 1.361E-06 | 2.122E-09 | 1.739E-11 | 3.365E-12 | 5.338E-15 | 8.468E-18 |
| rh103m | 5.155E+02 | 4.976E+02 | 4.596E+02 | 3.374E+02 | 1.420E+02 | 4.835E+01 | 5.352E-01 | 8.489E-04 | 1.347E-06 | 2.099E-09 | 1.721E-11 | 3.329E-12 | 5.281E-15 | 8.377E-18 |
| pd103 | 9.358E-06 | 8.625E-06 | 7.178E-06 | 3.515E-06 | 4.763E-07 | 3.954E-08 | 1.200E-12 | 4.097E-19 | 1.399E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 6.477E-12 | 6.263E-12 | 5.807E-12 | 4.329E-12 | 1.902E-12 | 6.830E-13 | 9.447E-15 | 2.062E-17 | 4.499E-20 | 9.654E-23 | 1.004E-24 | 2.107E-25 | 4.597E-28 | 1.003E-30 |
| ru106 | 1.292E+04 | 1.287E+04 | 1.276E+04 | 1.235E+04 | 1.128E+04 | 1.006E+04 | 6.256E+03 | 3.168E+03 | 1.604E+03 | 8.107E+02 | 4.882E+02 | 4.105E+02 | 2.079E+02 | 1.052E+02 |

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5 more years for cooling used fuel material fission products page 31

0

nuclide radioactivity, curies
basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rh106 | 1.292E+04 | 1.287E+04 | 1.276E+04 | 1.235E+04 | 1.128E+04 | 1.006E+04 | 6.256E+03 | 3.168E+03 | 1.604E+03 | 8.107E+02 | 4.882E+02 | 4.105E+02 | 2.079E+02 | 1.052E+02 |
| ag106m | 1.204E-16 | 1.018E-16 | 6.984E-17 | 1.614E-17 | 2.669E-19 | 1.617E-21 | 8.665E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 |
| ag108 | 7.981E-06 | 7.981E-06 | 7.980E-06 | 7.978E-06 | 7.976E-06 | 7.967E-06 | 7.955E-06 | 7.942E-06 | 7.929E-06 | 7.920E-06 | 7.917E-06 | 7.904E-06 | 7.892E-06 | |
| ag108m | 9.173E-05 | 9.173E-05 | 9.173E-05 | 9.172E-05 | 9.170E-05 | 9.168E-05 | 9.158E-05 | 9.143E-05 | 9.129E-05 | 9.114E-05 | 9.104E-05 | 9.100E-05 | 9.086E-05 | 9.071E-05 |
| ag109m | 9.007E-03 | 8.980E-03 | 8.920E-03 | 8.688E-03 | 8.072E-03 | 7.365E-03 | 5.021E-03 | 2.902E-03 | 1.677E-03 | 9.676E-04 | 6.430E-04 | 5.591E-04 | 3.231E-04 | 1.867E-04 |
| cd109 | 9.007E-03 | 8.980E-03 | 8.920E-03 | 8.688E-03 | 8.072E-03 | 7.365E-03 | 5.021E-03 | 2.902E-03 | 1.677E-03 | 9.676E-04 | 6.430E-04 | 5.591E-04 | 3.231E-04 | 1.867E-04 |
| ag110 | 1.571E+00 | 1.562E+00 | 1.543E+00 | 1.470E+00 | 1.283E+00 | 1.083E+00 | 5.337E-01 | 1.938E-01 | 7.037E-02 | 2.548E-02 | 1.198E-02 | 9.254E-03 | 3.361E-03 | 1.220E-03 |
| ag110m | 1.155E+02 | 1.149E+02 | 1.134E+02 | 1.081E+02 | 9.432E+01 | 7.963E+01 | 3.924E+01 | 1.425E+01 | 5.175E+00 | 1.874E+00 | 8.808E-01 | 6.805E-01 | 2.471E-01 | 8.973E-02 |
| ag111 | 3.810E-07 | 3.163E-07 | 2.081E-07 | 4.085E-08 | 4.278E-10 | 1.467E-12 | 7.288E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 | 2.364E-15 |
| cd113m | 1.916E-02 | 1.916E-02 | 1.914E-02 | 1.910E-02 | 1.897E-02 | 1.882E-02 | 1.818E-02 | 1.731E-02 | 1.648E-02 | 1.569E-02 | 1.513E-02 | 1.494E-02 | 1.422E-02 | 1.354E-02 |
| in113m | 1.342E-08 | 1.326E-08 | 1.291E-08 | 1.162E-08 | 8.649E-09 | 5.990E-09 | 1.290E-09 | 1.431E-10 | 1.589E-11 | 1.753E-12 | 3.406E-13 | 1.945E-13 | 2.159E-14 | 2.397E-15 |
| sn113 | 1.342E-08 | 1.326E-08 | 1.290E-08 | 1.162E-08 | 8.648E-09 | 5.986E-09 | 1.289E-09 | 1.430E-10 | 1.588E-11 | 1.752E-12 | 3.404E-13 | 1.944E-13 | 2.158E-14 | 2.395E-15 |
| in114 | 1.522E-04 | 1.480E-04 | 1.390E-04 | 1.088E-04 | 5.478E-05 | 2.332E-05 | 6.565E-07 | 3.962E-09 | 2.392E-11 | 1.423E-13 | 3.159E-15 | 8.591E-16 | 5.185E-18 | 3.129E-20 |
| in114m | 1.573E-04 | 1.530E-04 | 1.436E-04 | 1.124E-04 | 5.662E-05 | 2.410E-05 | 6.786E-07 | 4.095E-09 | 2.472E-11 | 1.471E-13 | 3.265E-15 | 8.879E-16 | 5.359E-18 | 3.234E-20 |
| cd115m | 3.999E-01 | 3.877E-01 | 3.615E-01 | 2.753E-01 | 1.285E-01 | 4.974E-02 | 9.419E-04 | 3.223E-06 | 1.103E-08 | 3.714E-11 | 5.399E-13 | 1.271E-13 | 4.347E-16 | 1.487E-18 |
| in115 | 3.818E-13 | 3.818E-13 | 3.818E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 | 3.819E-13 |
| in115m | 4.249E-05 | 4.121E-05 | 3.840E-05 | 2.925E-05 | 1.365E-05 | 5.285E-06 | 1.001E-07 | 3.424E-10 | 1.171E-12 | 3.946E-15 | 5.736E-17 | 1.350E-17 | 4.618E-20 | 1.580E-22 |
| cd116 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 | 1.837E-17 |
| sn117m | 1.227E-05 | 1.108E-05 | 8.807E-06 | 3.610E-06 | 2.971E-07 | 1.320E-08 | 3.068E-12 | 2.507E-16 | 2.089E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 4.241E+00 | 4.221E+00 | 4.176E+00 | 4

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i126 | 8.874E-08 | 7.972E-08 | 6.263E-08 | 2.451E-08 | 1.772E-09 | 6.735E-11 | 7.790E-17 | 2.476E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 3.766E-16 | 2.628E-16 | 1.169E-16 | 5.005E-18 | 7.380E-22 | 1.254E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 4.884E-01 | 4.822E+01 | 4.688E+01 | 4.192E+01 | 3.070E+01 | 2.083E+01 | 4.115E+00 | 4.040E-01 | 9.966E-02 | 3.868E-03 | 5.860E-04 | 3.797E-04 | 3.728E-05 | 3.659E-06 |
| te127m | 4.986E+01 | 4.923E+01 | 4.784E+01 | 4.280E+01 | 3.134E+01 | 2.127E+01 | 4.202E+00 | 4.125E-01 | 4.049E-02 | 3.949E-03 | 7.004E-04 | 3.877E-04 | 3.806E-05 | 3.736E-06 |
| xe127 | 3.757E-05 | 3.617E-05 | 3.320E-05 | 2.379E-05 | 9.358E-06 | 2.929E-06 | 2.279E-08 | 2.184E-11 | 2.092E-14 | 1.967E-17 | 1.107E-19 | 1.884E-20 | 1.805E-23 | 1.730E-26 |
| te128 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 | 8.644E-16 |
| te129 | 4.148E+00 | 3.980E+00 | 3.627E+00 | 2.528E+00 | 9.200E-01 | 2.614E-01 | 1.357E-03 | 7.286E-07 | 3.912E-10 | 2.057E-13 | 7.522E-16 | 1.104E-16 | 5.929E-20 | 3.183E-23 |
| te129m | 6.574E+00 | 6.309E+00 | 5.749E+00 | 4.007E+00 | 1.458E+00 | 4.143E-01 | 2.151E-03 | 1.155E-06 | 6.200E-10 | 3.261E-13 | 1.192E-15 | 1.750E-16 | 9.397E-20 | 5.045E-23 |
| i129 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 |
| xe129m | 3.175E-09 | 2.716E-09 | 1.912E-09 | 4.87E-10 | 1.064E-14 | 9.102E-14 | 2.064E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 1.960E-05 | 1.649E-05 | 1.118E-05 | 2.466E-06 | 3.580E-08 | 1.844E-10 | 5.017E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 5.444E-04 | 4.843E-04 | 3.722E-04 | 1.336E-04 | 7.589E-06 | 2.135E-07 | 7.014E-14 | 3.680E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.764E-11 | 1.529E-11 | 1.109E-11 | 3.177E-12 | 9.630E-14 | 1.252E-15 | 2.541E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 2.657E-14 | 2.356E-14 | 1.796E-14 | 6.255E-15 | 3.262E-16 | 8.256E-18 | 1.745E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 5.322E-12 | 4.297E-12 | 2.655E-12 | 4.085E-13 | 2.162E-15 | 3.170E-18 | 4.517E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 32

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe133 | 7.228E-10 | 5.549E-10 | 3.061E-10 | 3.027E-11 | 4.652E-14 | 1.463E-17 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 8.181E-04 | 8.178E-04 | 8.172E-04 | 8.146E-04 | 8.074E-04 | 7.986E-04 | 7.627E-04 | 7.141E-04 | 6.685E-04 | 6.258E-04 | 5.958E-04 | 5.859E-04 | 5.486E-04 | 5.136E-04 |
| cs134 | 3.219E+03 | 3.213E+03 | 3.200E+03 | 3.149E+03 | 3.011E+03 | 2.846E+03 | 2.252E+03 | 1.610E+03 | 1.151E+03 | 8.225E+02 | 6.406E+02 | 5.881E+02 | 4.205E+02 | 3.007E+02 |
| cs135 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 | 1.527E-02 |
| cs136 | 4.738E-03 | 4.264E-03 | 3.364E-03 | 1.013E-04 | 4.077E-06 | 5.988E-12 | 2.679E-20 | 1.499E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 5.247E-04 | 4.722E-04 | 3.726E-04 | 1.482E-04 | 1.122E-05 | 4.515E-07 | 6.631E-13 | 2.967E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.277E+03 | 2.276E+03 | 2.276E+03 | 2.273E+03 | 2.266E+03 | 2.258E+03 | 2.221E+03 | 2.171E+03 | 2.121E+03 | 2.073E+03 | 2.038E+03 | 2.026E+03 | 1.980E+03 | 1.935E+03 |
| ba137m | 2.156E+03 | 2.156E+03 | 2.155E+03 | 2.153E+03 | 2.146E+03 | 2.138E+03 | 2.104E+03 | 2.056E+03 | 2.009E+03 | 1.963E+03 | 1.930E+03 | 1.918E+03 | 1.875E+03 | 1.832E+03 |
| la137 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 |
| la138 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 | 1.165E-11 |
| ce139 | 1.915E-01 | 1.895E-01 | 1.853E-01 | 1.697E-01 | 1.326E-01 | 9.750E-02 | 2.700E-02 | 4.296E-03 | 6.835E-04 | 1.082E-04 | 2.750E-05 | 1.722E-05 | 2.739E-06 | 4.359E-07 |
| ba140 | 6.276E-02 | 5.629E-02 | 4.408E-02 | 1.703E-02 | 1.187E-03 | 4.311E-05 | 4.325E-11 | 9.991E-20 | 2.420E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 7.227E-02 | 6.482E-02 | 5.076E-02 | 1.964E-02 | 1.367E-03 | 4.965E-05 | 4.755E-11 | 1.151E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.634E+02 | 1.566E+02 | 1.423E+02 | 9.796E+01 | 3.446E+01 | 9.385E+00 | 4.084E-02 | 1.702E-05 | 7.097E-09 | 2.896E-12 | 8.771E-15 | 1.207E-15 | 5.033E-19 | 2.098E-22 |
| pr143 | 1.213E-01 | 1.095E-01 | 8.704E-02 | 3.560E-02 | 2.914E-03 | 1.292E-04 | 2.848E-10 | 2.277E-18 | 1.821E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.004E-10 | 9.983E-11 | 9.866E-11 | 9.425E-11 | 8.291E-11 | 7.068E-11 | 3.628E-11 | 1.396E-11 | 5.375E-12 | 2.064E-12 | 1.013E-12 | 7.943E-13 | 3.057E-13 | 1.177E-13 |
| ce144 | 1.074E+04 | 1.069E+04 | 1.057E+04 | 1.013E+04 | 8.993E+03 | 7.753E+03 | 4.169E+03 | 1.715E+03 | 7.059E+02 | 2.897E+02 | 1.495E+02 | 1.192E+02 | 4.906E+01 | 2.019E+01 |
| pr144 | 1.074E+04 | 1.069E+04 | 1.057E+04 | 1.013E+04 | 8.994E+03 | 7.753E+03 | 4.169E+03 | 1.716E+03 | 7.059E+02 | 2.898E+02 | 1.495E+02 | 1.192E+02 | 4.906E+01 | 2.019E+01 |
| pr144m | 1.026E+02 | 1.021E+02 | 1.009E+02 | 9.674E+01 | 8.587E+01 | 7.403E+01 | 3.981E+01 | 1.638E+01 | 6.740E+00 | 2.767E+00 | 1.427E+00 | 1.138E+00 | 4.684E-01 | 1.927E-01 |
| nd144 | 1.884E-11 | 1.886E-11 | 1.890E-11 | 1.905E-11 | 1.944E-11 | 1.986E-11 | 2.108E-11 | 2.192E-11 | 2.226E-11 | 2.241E-11 | 2.245E-11 | 2.246E-11 | 2.249E-11 | 2.250E-11 |
| pm144 | 2.196E-08 | 2.187E-08 | 2.169E-08 | 2.097E-08 | 1.910E-08 | 1.700E-08 | 1.045E-08 | 5.204E-09 | 2.592E-09 | 1.289E-09 | 7.665E-10 | 6.418E-10 | 3.197E-10 | 1.592E-10 |
| pm145 | 8.362E-05 | 8.360E-05 | 8.357E-05 | 8.344E-05 | 8.308E-05 | 8.261E-05 | 8.062E-05 | 7.771E-05 | 7.482E-05 | 7.198E-05 | 6.993E-05 | 6.924E-05 | 6.659E-05 | 6.404E-05 |
| sm145 | 1.495E-05 | 1.489E-05 | 1.476E-05 | 1.424E-05 | 1.288E-05 | 1.138E-05 | 6.765E-06 | 3.215E-06 | 1.527E-06 | 7.243E-07 | 4.160E-07 | 3.441E-07 | 1.635E-07 | 7.770E-08 |
| pm146 | 3.305E-03 | 3.303E-03 | 3.298E-03 | 3.278E-03 | 3.224E-03 | 3.157E-03 | 2.892E-03 | 2.552E-03 | 2.251E-03 | 1.986E-03 | 1.809E-03 | 1.752E-03 | 1.546E-03 | 1.364E-03 |
| sm146 | 1.321E-09 | 1.321E-09 | 1.321E-09 | 1.322E-09 | 1.323E-09 | 1.324E-09 | 1.329E-09 | 1.335E-09 | 1.341E-09 | 1.345E-09 | 1.349E-09 | 1.350E-09 | 1.353E-09 | 1.357E-09 |
| nd147 | 2.933E-03 | 2.585E-03 | 1.946E-03 | 6.447E-04 | 2.924E-05 | 6.216E-07 | 6.344E-14 | 6.242E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.762E-03 | 2.758E-03 | 2.749E-03 | 2.715E-03 | 2.620E-03 | 2.507E-03 | 2.085E-03 | 1.601E-03 | 1.229E-03 | 9.434E-02 | 7.749E-02 | 7.245E-02 | 5.564E-02 | 4.273E-02 |
| sm147 | 4.339E-08 | 4.348E-08 | 4.371E-08 | 4.456E-08 | 4.690E-08 | 4.970E-08 | 6.015E-08 | 7.213E-08 | 8.132E-08 | 8.840E-08 | 9.257E-08 | 9.382E-08 | 9.798E-08 | 1.012E-07 |
| eu147 | 3.646E-15 | 3.443E-15 | 3.025E-15 | 1.828E-15 | 4.467E-16 | 7.728E-17 | 5.045E-20 | 1.392E-24 | 3.841E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 8.402E-01 | 8.125E-01 | 7.533E-01 | 5.616E-01 | 2.467E-01 | 8.869E-02 | 1.225E-03 | 2.674E-06 | 5.836E-09 | 1.252E-11 | 1.302E-13 | 2.733E-14 | 5.964E-17 | 1.301E-19 |
| pm148m | 1.740E+01 | 1.683E+01 | 1.560E+01 | 1.163E+01 | 5.110E+00 | 1.835E+00 | 2.538E-02 | 5.539E-05 | 1.209E-07 | 2.594E-10 | 2.697E-12 | 5.661E-13 | 1.235E-15 | 2.696E-18 |
| sm148 | 1.087E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 | 1.088E-12 |
| eu149 | 1.352E-08 | 1.332E-08 | 1.288E-08 | 1.131E-08 | 7.852E-09 | 4.986E-09 | 7.469E-10 | 4.932E-11 | 3.257E-12 | 2.135E-13 | 2.818E-14 | 1.410E-14 | 9.311E-16 | 6.149E-17 |
| nd150 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 | 1.392E-15 |
| sm151 | 1.118E+01 | 1.118E+01 | 1.118E+01 | 1.117E+01 | 1.116E+01 | 1.115E+01 | 1.109E+01 | 1.100E+01 | 1.092E+01 | 1.083E+01 | 1.077E+01 | 1.075E+01 | 1.067E+01 | 1.058E+01 |
| gd151 | 1.113E-05 | 1.100E-05 | 1.073E-05 | 9.729E-06 | 7.398E-06 | 5.260E-06 | 1.265E-06 | 1.644E-07 | 2.137E-08 | 2.762E-09 | 6.038E-10 | 3.590E-10 | 4.667E-11 | 6.066E-12 |
| eu152 | 1.107E-01 | 1.107E-01 | 1.106E-01 | 1.104E-01 | 1.096E-01 | 1.087E-01 | 1.048E-01 | 9.962E-02 | 9.465E-02 | 8.991E-02 | 8.655E-02 | 8.543E-02 | 8.117E-02 | 7.712E-02 |
| gd152 | 2.822E-14 | 2.822E-14 | 2.823E-14 | 2.824E-14 | 2.826E-14 | 2.830E-14 | 2.843E-14 | 2.861E-14 | 2.879E-14 | 2.895E-14 | 2.907E-14 | 2.911E-14 | 2.926E-14 | 2.940E-14 |
| gd153 | 1.991E-01 | 1.980E-01 | 1.954E-01 | 1.858E-01 | 1.613E-01 | 1.353E-01 | 6.486E-02 | 2.264E-02 | 7.905E-03 | 2.751E-03 | 1.256E-03 | 9.605E-04 | 3.353E-04 | 1.171E-04 |
| eu154 | 2.575E+02 | 2.574E+02 | 2.571E+02 | 2.561E+02 | 2.534E+02 | 2.500E+02 | 2.363E+02 | 2.180E+02 | 2.012E+02 | 1.856E+02 | 1.747E+02 | 1.712E+02 | 1.580E+02 | 1.457E+02 |
| eu155 | 1.128E+02 | 1.127E+02 | 1.125E+02 | 1.117E+02 | 1.095E+02 | 1.069E+02 | 9.654E+01 | 8.345E+01 | 7.213E+01 | 6.233E+01 | 5.591E+01 | 5.387E+01 | 4.657E+01 | 4.025E+01 |
| eu156 | 1.056E-01 | 9.638E-02 | 7.849E-02 | 3.532E-02 | 3.775E-03 | 2.334E-04 | 2.063E-09 | 1.205E-16 | 7.039E-24 | 3.928E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 4.451E-07 | 4.451E-07 | 4.450E-07 | 4.448E-07 | 4.442E-07 | 4.435E-07 | 4.405E-07 | 4.362E-07 | 4.320E-07 | 4.278E-07 | 4.247E-07 | 4.236E-07 | 4.195E-07 | 4.154E-07 |
| tb158 | 2.233E-05 | 2.233E-05 | 2.233E-05 | 2.233E-05 | 2.232E-05 | 2.230E-05 | 2.224E-05 | 2.216E-05 | 2.207E-05 | 2.199E-05 | 2.192E-05 | 2.190E-05 | 2.182E-05 | 2.173E-05 |
| dy159 | 2.846E-05 | 2.819E-05 | 2.759E-05 | 2.536E-05 | 2.005E-05 | 1.496E-05 | 4.398E-06 | 7.627E-07 | 1.323E-07 | 2.283E-08 | 6.186E-09 | 3.959E-09 | 6.865E-10 | 1.190E-10 |
| tb160 | 4.031E+00 | 3.955E+00 | 3.788E+00 | 3.203E+00 | 2.002E+00 | 1.116E+00 | 9.678E-02 | 2.924E-03 | 8.837E-05 | 2.645E-06 | 1.949E-07 | 7.992E-08 | 2.415E-09 | 7.298E-11 |
| tb161 | 1.562E-09 | 1.278E-09 | 8.135E-10 | 1.405E-10 | 1.027E-12 | 2.252E-15 | 1.727E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.787E-09 | 1.786E-09 | 1.786E-09 | 1.786E-09 | 1.786E-09 | 1.785E-09 |
| ho166m | 1.868E-05 | 1.868E-05 | 1.868E-05 | 1.867E-05 | 1.867E-05 | 1.867E-05 | 1.867E-05 | 1.865E-05 | 1.864E-05 | 1.863E-05 | 1.862E-05 | 1.862E-05 | 1.861E-05 | 1.860E-05 |
| tm167 | 2.318E-16 | 1.995E-16 | 1.424E-16 | 3.837E-17 | 9.757E-19 | 1.010E-20 | 5.075E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.595E-07 | 1.572E-07 | 1.520E-07 | 1.334E-07 | 9.264E-08 | 5.883E-08 | 8.811E-09 | 5.819E-10 | 3.843E-11 | 2.519E-12 | 3.324E-13 | 1.663E-13 | 1.099E-14 | 7.254E-16 |
| er169 | 8.581E-10 | 7.404E-10 | 5.312E-10 | 1.460E-10 | 3.924E-12 | 4.351E-14 | 2.920E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 33

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb169 | 2.136E-09 | 2.045E-09 | 1.856E-09 | 1.270E-09 | 4.398E-10 | 1.174E-10 | 4.701E-13 | 1.740E-16 | 6.438E-20 | 2.332E-23 | 6.461E-26 | 8.628E-27 | 3.193E-30 | 0.000E+00 |
| tm170 | 5.692E-03 | 5.631E-03 | 5.496E-03 | 5.001E-03 | 3.840E-03 | 2.764E-03 | 6.993E-04 | 9.778E-05 | 1.367E-05 | 1.902E-06 | 4.389E-07 | 2.659E-07 | 3.718E-08 | 5.198E-09 |
| tm171 | 2.947E-03 | 2.941E-03 | 2.928E-03 | 2.877E-03 | 2.741E-03 | 2.581E-03 | 2.006E-03 | 1.398E-03 | 9.749E-04 | 6.790E-04 | 5.189E-04 | 4.733E-04 | 3.300E-04 | 2.300E-04 |
| total | 6.852E+04 | 6.811E+04 | 6.723E+04 | 6.402E+04 | 5.664E+04 | 4.965E+04 | 3.196E+04 | 1.937E+04 | 1.317E+04 | 9.931E+03 | 8.517E+03 | 8.153E+03 | 7.101E+03 | 6.429E+03 |

1

5 more years for cooling used fuel material fission products page 34

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.197E+01 | 1.197E+01 | 1.196E+01 | 1.193E+01 | 1.184E+01 | 1.173E+01 | 1.128E+01 | 1.066E+01 | 1.008E+01 | 9.525E+00 | 9.134E+00 | 9.004E+00 | 8.512E+00 | 8.046E+00 |
| ga | 2.507E-17 | 2.494E-17 | 2.466E-17 | 2.358E-17 | 2.080E-17 | 1.780E-17 | 9.269E-18 | 3.643E-18 | 1.432E-18 | 5.615E-19 | 2.800E-19 | 2.207E-19 | 8.675E-20 | 3.410E-20 |
| ge | 6.499E-08 | 6.388E-08 | 6.144E-08 | 5.282E-08 | 3.460E-08 | 2.044E-08 | 2.262E-09 | 9.687E-11 | 4.148E-12 | 1.761E-13 | 1.683E-14 | 7.541E-15 | 3.230E-16 | 1.386E-17 |
| as | 7.251E-08 | 7.083E-08 | 6.728E-08 | 5.578E-08 | 3.504E-08 | 2.048E-08 | 2.262E-09 | 9.687E-11 | 4.148E-12 | 1.761E-13 | 1.683E-14 | 7.541E-15 | 3.229E-16 | 1.383E-17 |
| se | 1.432E-03 | 1.432E-03 | 1.431E-03 | 1.431E-03 | 1.431E-03 | 1.430E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 | 1.429E-03 |
| kr | 1.176E+02 | 1.176E+02 | 1.175E+02 | 1.171E+02 | 1.161E+02 | 1.149E+02 | 1.098E+02 | 1.030E+02 | 9.655E+01 | 9.052E+01 | 8.627E+01 | 8.487E+01 | 7.958E+01 | 7.461E+01 |
| rb | 4.409E-03 | 4.097E-03 | 3.474E-03 | 1.833E-03 | 3.172E-04 | 4.325E-05 | 1.338E-06 | 2.990E-07 | 2.452E-07 | 2.423E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 | 2.422E-07 |
| sr | 1.147E+03 | 1.137E+03 | 1.117E+03 | 1.048E+03 | 9.236E+02 | 8.481E+02 | 7.814E+02 | 7.612E+02 | 7.431E+02 | 7.254E+02 | 7.125E+02 | 7.082E+02 | 6.913E+02 | 6.749E+02 |
| y | 1.585E+03 | 1.566E+03 | 1.526E+03 | 1.389E+03 | 1.127E+03 | 9.536E+02 | 7.878E+02 | 7.615E+02 | 7.433E+02 | 7.256E+02 | 7.127E+02 | 7.083E+02 | 6.915E+02 | 6.751E+02 |
| zr | 1.839E+03 | 1.800E+03 | 1.714E+03 | 1.418E+03 | 8.344E+02 | 4.312E+02 | 2.730E+01 | 5.519E-01 | 3.740E-02 | 2.751E-02 | 2.733E-02 | 2.732E-02 | 2.732E-02 | 2.732E-02 |
| nb | 3.817E+03 | 3.740E+03 | 3.571E+03 | 2.982E+03 | 1.788E+03 | 9.370E+02 | 6.031E+01 | 1.204E+00 | 2.848E-02 | 6.723E-03 | 6.947E-03 | 7.148E-03 | 7.959E-03 | 8.745E-03 |
| mo | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.902E-09 | 6.898E-09 | 6.896E-09 | 6.897E-09 | 6.896E-09 | 6.895E-09 | 6.893E-09 | 6.893E-09 |
| tc | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 | 2.796E-01 |
| ru | 1.344E+04 | 1.337E+04 | 1.323E+04 | 1.270E+04 | 1.142E+04 | 1.011E+04 | 6.256E+03 | 3.168E+03 | 1.604E+03 | 8.107E+02 | 4.882E+02 | 4.105E+02 | 2.079E+02 | 1.052E+02 |
| rh | 1.343E+04 | 1.337E+04 | 1.322E+04 | 1.269E+04 | 1.142E+04 | 1.011E+04 | 6.256E+03 | 3.168E+03 | 1.604E+03 | 8.107E+02 | 4.882E+02 | 4.105E+02 | 2.079E+02 | 1.053E+02 |
| pd | 5.266E-03 | 5.265E-03 | 5.263E-03 | 5.260E-03 | 5.257E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 | 5.256E-03 |
| ag | 1.171E+02 | 1.164E+02 | 1.150E+02 | 1.095E+02 | 9.561E+01 | 8.072E+01 | 3.978E+01 | 1.445E+01 | 5.247E+00 | 1.900E+00 | 8.936E-01 | 6.904E-01 | 2.509E-01 | 9.124E-02 |
| cd | 4.281E-01 | 4.158E-01 | 3.895E-01 | 3.031E-01 | 1.555E-01 | 7.592E-02 | 2.415E-02 | 2.022E-02 | 1.816E-02 | 1.666E-02 | 1.577E-02 | 1.550E-02 | 1.454E-02 | 1.373E-02 |
| in | 3.520E-04 | 3.422E-04 | 3.210E-04 | 2.505E-04 | 1.251E-04 | 5.271E-05 | 1.436E-06 | 8.544E-09 | 6.607E-11 | 2.428E-12 | 7.290E-13 | 5.782E-13 | 4.035E-13 | 3.843E-13 |
| sn | 1.790E+01 | 1.775E+01 | 1.741E+01 | 1.619E+01 | 1.327E+01 | 1.049E+01 | 4.656E+00 | 2.359E+00 | 1.741E+00 | 1.519E+00 | 1.440E+00 | 1.421E+00 | 1.369E+00 | 1.335E+00 |
| sb | 2.504E+02 | 2.500E+02 | 2.492E+02 | 2.460E+02 | 2.374E+02 | 2.273E+02 | 1.905E+02 | 1.482E+02 | 1.153E+02 | 8.964E+01 | 7.434E+01 | 6.973E+01 | 5.425E+01 | 4.221E+01 |
| te | 1.701E+02 | 1.683E+02 | 1.645E+02 | 1.510E+02 | 1.223E+02 | 9.832E+01 | 5.497E+01 | 3.711E+01 | 2.831E+01 | 2.195E+01 | 1.820E+01 | 1.707E+01 | 1.328E+01 | 1.033E+01 |
| i | 8.718E-04 | 8.686E-04 | 8.633E-04 | 8.545E-04 | 8.519E-04 | 8.518E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 | 8.517E-04 |
| xe | 5.820E-04 | 5.205E-04 | 4.054E-04 | 1.574E-04 | 1.695E-05 | 3.142E-06 | 2.279E-08 | 2.184E-11 | 2.092E-14 | 1.967E-17 | 1.107E-19 | 1.884E-20 | 1.805E-23 | 1.730E-26 |
| cs | 5.496E+03 | 5.490E+03 | 5.476E+03 | 5.422E+03 | 5.277E+03 | 5.104E+03 | 4.473E+03 | 3.781E+03 | 3.273E+03 | 2.896E+03 | 2.678E+03 | 2.614E+03 | 2.400E+03 | 2.235E+03 |
| ba | 2.156E+03 | 2.156E+03 | 2.155E+03 | 2.153E+03 | 2.146E+03 | 2.138E+03 | 2.104E+03 | 2.056E+03 | 2.009E+03 | 1.963E+03 | 1.930E+03 | 1.918E+03 | 1.875E+03 | 1.832E+03 |
| la | 7.227E-02 | 6.482E-02 | 5.076E-02 | 1.965E-02 | 1.367E-03 | 5.001E-05 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.643E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 | 3.642E-07 |
| ce | 1.090E+04 | 1.085E+04 | 1.072E+04 | 1.023E+04 | 9.028E+03 | 7.763E+03 | 4.169E+03 | 1.715E+03 | 7.059E+02 | 2.897E+02 | 1.495E+02 | 1.192E+02 | 4.906E+01 | 2.019E+01 |
| pr | 1.084E+04 | 1.079E+04 | 1.067E+04 | 1.023E+04 | 9.080E+03 | 7.827E+03 | 4.209E+03 | 1.732E+03 | 7.126E+02 | 2.925E+02 | 1.509E+02 | 1.204E+02 | 4.953E+01 | 2.038E+01 |
| nd | 2.933E-03 | 2.585E-03 | 1.946E-03 | 6.447E-04 | 2.924E-05 | 6.217E-07 | 2.115E-11 | 2.192E-11 | 2.226E-11 | 2.241E-11 | 2.245E-11 | 2.246E-11 | 2.249E-11 | 2.250E-11 |
| pm | 2.780E+03 | 2.776E+03 | 2.766E+03 | 2.727E+03 | 2.625E+03 | 2.509E+03 | 2.085E+03 | 1.601E+03 | 1.229E+03 | 9.434E+02 | 7.749E+02 | 7.245E+02 | 5.564E+02 | 4.273E+02 |
| sm | 1.118E+01 | 1.118E+01 | 1.118E+01 | 1.117E+01 | 1.116E+01 | 1.115E+01 | 1.109E+01 | 1.100E+01 | 1.092E+01 | 1.083E+01 | 1.077E+01 | 1.075E+01 | 1.067E+01 | 1.058E+01 |
| eu | 3.705E+02 | 3.703E+02 | 3.698E+02 | 3.680E+02 | 3.630E+02 | 3.570E+02 | 3.330E+02 | 3.016E+02 | 2.734E+02 | 2.480E+02 | 2.307E+02 | 2.252E+02 | 2.046E+02 | 1.861E+02 |
| gd | 1.991E-01 | 1.980E-01 | 1.954E-01 | 1.858E-01 | 1.613E-01 | 1.353E-01 | 6.486E-02 | 2.264E-02 | 7.905E-03 | 2.752E-03 | 1.256E-03 | 9.605E-04 | 3.353E-04 | 1.171E-04 |
| tb | 4.031E+00 | 3.955E+00 | 3.788E+00 | 3.203E+00 | 2.002E+00 | 1.116E+00 | 9.680E-02 | 2.947E-03 | 1.109E-04 | 2.506E-05 | 2.254E-05 | 2.241E-05 | 2.224E-05 | 2.215E-05 |
| dy | 2.846E-05 | 2.819E-05 | 2.759E-05 | 2.536E-05 | 2.005E-05 | 1.496E-05 | 4.398E-06 | 7.627E-07 | 1.323E-07 | 2.283E-08 | 6.186E-09 | 3.959E-09 | 6.865E-10 | 1.190E-10 |
| ho | 1.868E-05 | 1.868E-05 | 1.868E-05 | 1.868E-05 | 1.868E-05 | 1.867E-05 | 1.867E-05 | 1.866E-05 | 1.865E-05 | 1.863E-05 | 1.863E-05 | 1.862E-05 | 1.861E-05 | 1.860E-05 |
| er | 8.581E-10 | 7.404E-10 | 5.312E-10 | 1.460E-10 | 3.924E-12 | 4.351E-14 | 2.920E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 8.638E-03 | 8.572E-03 | 8.424E-03 | 7.879E-03 | 6.582E-03 | 5.345E-03 | 2.705E-03 | 1.496E-03 | 9.886E-04 | 6.809E-04 | 5.193E-04 | 4.736E-04 | 3.300E-04 | 2.300E-04 |
| yb | 2.136E-09 | 2.045E-09 | 1.856E-09 | 1.270E-09 | 4.398E-10 | 1.174E-10 | 4.701E-13 | 1.740E-16 | 6.438E-20 | 2.332E-23 | 6.461E-26 | 8.628E-27 | 3.193E-30 | 0.000E+00 |
| totals | 6.852E+04 | 6.811E+04 | 6.723E+04 | 6.402E+04 | 5.664E+04 | 4.965E+04 | 3.196E+04 | 1.937E+04 | 1.317E+04 | 9.931E+03 | 8.517E+03 | 8.153E+03 | 7.101E+03 | 6.429E+03 |

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5 more years for cooling used fuel material fission products page 35

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 4.038E-04 | 4.037E-04 | 4.034E-04 | 4.023E-04 | 3.993E-04 | 3.956E-04 | 3.803E-04 | 3.595E-04 | 3.399E-04 | 3.212E-04 | 3.081E-04 | 3.037E-04 | 2.871E-04 | 2.714E-04 |
| ga 68 | 2.513E-19 | 2.500E-19 | 2.472E-19 | 2.364E-19 | 2.085E-19 | 1.784E-19 | 9.290E-20 | 3.652E-20 | 1.435E-20 | 5.628E-21 | 2.806E-21 | 2.212E-21 | 8.696E-22 | 3.418E-22 |
| ge 71 | 2.749E-16 | 2.435E-16 | 1.854E-16 | 6.414E-17 | 3

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rb 84 | 5.650E-07 | 5.416E-07 | 4.925E-07 | 3.403E-07 | 1.209E-07 | 3.334E-08 | 1.528E-10 | 6.857E-14 | 3.078E-17 | 1.353E-20 | 4.329E-23 | 6.073E-24 | 2.726E-27 | 1.224E-30 |
| kr 85 | 1.763E-01 | 1.762E-01 | 1.761E-01 | 1.755E-01 | 1.740E-01 | 1.722E-01 | 1.646E-01 | 1.543E-01 | 1.447E-01 | 1.357E-01 | 1.293E-01 | 1.272E-01 | 1.193E-01 | 1.118E-01 |
| sr 85 | 2.194E-08 | 2.147E-08 | 2.047E-08 | 1.697E-08 | 1.005E-08 | 9.237E-09 | 9.429E-10 | 5.928E-12 | 3.490E-13 | 2.798E-15 | 1.528E-16 | 5.652E-17 | 1.142E-18 | 2.307E-20 |
| rb 86 | 1.939E-05 | 1.800E-05 | 1.523E-05 | 7.941E-06 | 1.283E-06 | 1.326E-07 | 1.005E-11 | 1.273E-17 | 1.612E-23 | 1.966E-29 | 7.921E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 |
| y 88 | 1.173E-04 | 1.158E-04 | 1.125E-04 | 1.004E-04 | 7.299E-05 | 4.910E-05 | 9.357E-06 | 8.724E-07 | 8.133E-08 | 7.533E-09 | 1.286E-09 | 7.023E-10 | 6.547E-11 | 6.104E-12 |
| zr 88 | 5.691E-12 | 5.597E-12 | 5.391E-12 | 4.662E-12 | 3.102E-12 | 1.868E-12 | 2.244E-13 | 1.080E-14 | 5.202E-16 | 2.483E-17 | 2.590E-18 | 1.196E-18 | 5.756E-20 | 2.771E-21 |
| sr 89 | 1.203E+00 | 1.171E+00 | 1.101E+00 | 8.657E-01 | 4.420E-01 | 1.914E-01 | 5.793E-03 | 3.876E-05 | 2.594E-07 | 1.712E-09 | 4.102E-11 | 1.145E-11 | 7.665E-14 | 5.129E-16 |
| y 89m | 1.801E-04 | 1.753E-04 | 1.648E-04 | 1.296E-04 | 6.618E-05 | 2.866E-05 | 8.672E-07 | 5.803E-09 | 3.883E-11 | 2.563E-13 | 6.142E-15 | 1.715E-15 | 1.147E-17 | 7.678E-20 |
| sr 90 | 9.285E-01 | 9.284E-01 | 9.281E-01 | 9.270E-01 | 9.241E-01 | 9.203E-01 | 9.050E-01 | 8.835E-01 | 8.625E-01 | 8.419E-01 | 8.270E-01 | 8.219E-01 | 8.024E-01 | 7.833E-01 |
| y 90 | 4.426E+00 | 4.425E+00 | 4.424E+00 | 4.419E+00 | 4.404E+00 | 4.387E+00 | 4.314E+00 | 4.211E+00 | 4.111E+00 | 4.013E+00 | 3.942E+00 | 3.918E+00 | 3.824E+00 | 3.733E+00 |
| y 91 | 2.819E+00 | 2.753E+00 | 2.610E+00 | 2.121E+00 | 1.187E+00 | 5.763E-01 | 2.810E-02 | 3.722E-04 | 4.930E-06 | 6.454E-08 | 2.573E-09 | 8.549E-10 | 1.132E-11 | 1.500E-13 |
| nb 91 | 1.060E-13 | 1.060E-13 | 1.060E-13 | 1.060E-13 | 1.060E-13 | 1.060E-13 | 1.059E-13 | 1.058E-13 | 1.057E-13 | 1.056E-13 | 1.055E-13 | 1.055E-13 | 1.054E-13 | 1.053E-13 |
| nb 91m | 2.658E-15 | 2.598E-15 | 2.468E-15 | 2.022E-15 | 1.157E-15 | 5.778E-16 | 3.166E-17 | 4.955E-19 | 7.756E-21 | 1.200E-22 | 5.419E-24 | 1.879E-24 | 2.941E-26 | 4.604E-28 |
| nb 92 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 | 1.525E-14 |
| nb 92m | 1.193E-16 | 1.041E-16 | 7.655E-17 | 2.317E-17 | 8.159E-19 | 1.266E-20 | 3.464E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 | 3.085E-06 |
| nb 93m | 4.144E-07 | 4.153E-07 | 4.176E-07 | 4.262E-07 | 4.504E-07 | 4.802E-07 | 6.027E-07 | 7.717E-07 | 9.337E-07 | 1.089E-06 | 1.201E-06 | 1.238E-06 | 1.380E-06 | 1.517E-06 |
| mo 93 | 6.604E-13 | 6.604E-13 | 6.604E-13 | 6.604E-13 | 6.604E-13 | 6.604E-13 | 6.603E-13 | 6.602E-13 | 6.601E-13 | 6.600E-13 | 6.599E-13 | 6.599E-13 | 6.597E-13 | 6.596E-13 |
| nb 94 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 | 1.068E-07 |
| zr 95 | 9.267E+00 | 9.069E+00 | 8.637E+00 | 7.147E+00 | 4.205E+00 | 2.173E+00 | 1.375E-01 | 2.643E-03 | 5.084E-05 | 9.673E-07 | 5.091E-08 | 1.860E-08 | 3.578E-10 | 6.881E-12 |
| nb 95 | 1.820E+01 | 1.784E+01 | 1.703E+01 | 1.422E+01 | 8.529E+00 | 4.470E+00 | 2.877E-01 | 5.722E-03 | 1.102E-04 | 2.096E-06 | 1.071E-07 | 3.906E-08 | 7.746E-10 | 1.491E-11 |
| nb 95m | 3.111E-02 | 3.045E-02 | 2.900E-02 | 2.399E-02 | 1.412E-02 | 7.294E-03 | 4.615E-04 | 8.875E-06 | 1.707E-07 | 3.247E-09 | 1.709E-10 | 6.246E-11 | 1.201E-12 | 2.310E-14 |
| tc 95 | 9.608E-16 | 9.392E-16 | 8.924E-16 | 7.315E-16 | 4.192E-16 | 2.096E-16 | 1.156E-17 | 1.827E-19 | 2.887E-21 | 4.511E-23 | 2.051E-24 | 7.128E-25 | 1.126E-26 | 0.000E+00 |
| tc 95m | 2.139E-14 | 2.090E-14 | 1.986E-14 | 1.628E-14 | 9.329E-15 | 4.664E-15 | 2.573E-16 | 4.066E-18 | 6.425E-20 | 1.004E-21 | 4.564E-23 | 1.586E-23 | 2.507E-25 | 3.962E-27 |
| zr 96 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 | 2.692E-17 |
| tc 97 | 1.579E-14 | 1.579E-14 | 1.580E-14 | 1.581E-14 | 1.586E-14 | 1.589E-14 | 1.594E-14 | 1.595E-14 | 1.595E-14 | 1.595E-14 | 1.595E-14 | 1.595E-14 | 1.595E-14 | 1.595E-14 |
| tc 97m | 1.540E-08 | 1.516E-08 | 1.465E-08 | 1.282E-08 | 8.829E-09 | 5.548E-09 | 7.954E-10 | 4.933E-11 | 3.060E-12 | 1.883E-13 | 2.372E-14 | 1.168E-14 | 7.246E-16 | 4.494E-17 |
| tc 98 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 | 1.394E-09 |
| tc 99 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 |
| rh 99 | 2.391E-18 | 2.193E-18 | 1.807E-18 | 8.507E-19 | 1.032E-19 | 7.465E-21 | 2.174E-25 | 1.908E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 | 9.021E-17 |
| rh101 | 1.949E-08 | 1.947E-08 | 1.942E-08 | 1.922E-08 | 1.869E-08 | 1.805E-08 | 1.558E-08 | 1.263E-08 | 1.024E-08 | 8.298E-09 | 7.096E-09 | 6.727E-09 | 5.453E-09 | 4.421E-09 |
| rh102 | 3.828E-04 | 3.803E-04 | 3.746E-04 | 3.533E-04 | 3.000E-04 | 2.447E-04 | 1.044E-04 | 3.098E-05 | 9.270E-06 | 2.834E-06 | 1.219E-06 | 9.252E-07 | 3.470E-07 | 1.639E-07 |
| rh102m | 4.147E-04 | 4.143E-04 | 4.134E-04 | 4.097E-04 | 3.997E-04 | 3.875E-04 | 3.405E-04 | 2.829E-04 | 2.351E-04 | 1.953E-04 | 1.701E-04 | 1.623E-04 | 1.349E-04 | 1.121E-04 |
| ru103 | 1.737E+00 | 1.676E+00 | 1.548E+00 | 1.137E+00 | 4.784E-01 | 1.629E-01 | 1.803E-03 | 2.860E-06 | 4.537E-09 | 7.070E-12 | 5.796E-14 | 1.122E-14 | 1.779E-17 | 2.822E-20 |
| rh103m | 1.189E-01 | 1.148E-01 | 1.060E-01 | 7.782E-02 | 3.275E-02 | 1.115E-02 | 1.234E-04 | 1.958E-07 | 3.106E-10 | 4.841E-13 | 3.968E-15 | 7.679E-16 | 1.218E-18 | 1.932E-21 |
| pd103 | 1.121E-09 | 1.033E-09 | 8.601E-10 | 4.212E-10 | 5.707E-11 | 4.738E-12 | 1.438E-16 | 4.909E-23 | 1.676E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 1.908E-14 | 1.845E-14 | 1.711E-14 | 1.275E-14 | 5.603E-15 | 2.012E-15 | 2.783E-17 | 6.074E-19 | 1.325E-22 | 2.844E-25 | 2.957E-27 | 6.207E-28 | 1.354E-30 | 2.956E-33 |
| ru106 | 7.681E-01 | 7.653E-01 | 7.589E-01 | 7.345E-01 | 6.704E-01 | 5.983E-01 | 3.719E-01 | 1.883E-01 | 9.536E-02 | 4.820E-02 | 2.903E-02 | 2.441E-02 | 1.236E-02 | 6.257E-03 |
| rh106 | 1.240E+02 | 1.236E+02 | 1.225E+02 | 1.186E+02 | 1.082E+02 | 9.661E+01 | 6.005E+01 | 3.041E+01 | 1.540E+01 | 7.782E+00 | 4.687E+00 | 3.941E+00 | 1.995E+00 | 1.010E+00 |

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5 more years for cooling used fuel material fission products page 36

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag106m | 2.011E-18 | 1.701E-18 | 1.167E-18 | 2.697E-19 | 4.461E-21 | 2.702E-23 | 1.448E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 |
| ag108 | 2.964E-08 | 2.964E-08 | 2.964E-08 | 2.963E-08 | 2.963E-08 | 2.962E-08 | 2.959E-08 | 2.954E-08 | 2.949E-08 | 2.945E-08 | 2.941E-08 | 2.940E-08 | 2.935E-08 | 2.931E-08 |
| ag108m | 8.898E-07 | 8.898E-07 | 8.898E-07 | 8.897E-07 | 8.895E-07 | 8.893E-07 | 8.883E-07 | 8.869E-07 | 8.855E-07 | 8.841E-07 | 8.830E-07 | 8.827E-07 | 8.813E-07 | 8.799E-07 |
| ag109m | 4.646E-06 | 4.632E-06 | 4.601E-06 | 4.482E-06 | 4.164E-06 | 3.799E-06 | 2.590E-06 | 1.497E-06 | 8.650E-07 | 4.991E-07 | 3.317E-07 | 2.884E-07 | 1.667E-07 | 9.633E-08 |
| cd109 | 1.127E-06 | 1.123E-06 | 1.116E-06 | 1.087E-06 | 1.010E-06 | 9.212E-07 | 6.280E-07 | 3.629E-07 | 2.097E-07 | 1.210E-07 | 8.043E-08 | 6.994E-08 | 4.042E-08 | 2.336E-08 |
| ag110 | 1.125E-02 | 1.119E-02 | 1.105E-02 | 1.053E-02 | 9.191E-03 | 7.759E-03 | 3.824E-03 | 1.388E-03 | 5.042E-04 | 1.826E-04 | 8.583E-05 | 6.631E-05 | 2.408E-05 | 8.744E-06 |
| ag110m | 1.941E+00 | 1.930E+00 | 1.816E+00 | 1.585E+00 | 1.338E+00 | 1.094E+00 | 5.594E-01 | 2.394E-01 | 8.695E-02 | 3.142E-02 | 1.480E-02 | 1.143E-02 | 4.152E-03 | 1.508E-03 |
| ag111 | 8.523E-10 | 7.076E-10 | 4.656E-10 | 9.138E-11 | 9.570E-13 | 3.282E-15 | 1.630E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 | 1.298E-18 |
| cd113m | 2.109E-05 | 2.109E-05 | 2.108E-05 | 2.103E-05 | 2.089E-05 | 2.072E-05 | 2.002E-05 | 1.906E-05 | 1.815E-05 | 1.727E-05 | 1.665E-05 | 1.645E-05 | 1.566E-05 | 1.491E-05 |
| in113m | 3.116E-11 | 3.079E-11 | 2.997E-11 | 2.697E-11 | 2.008E-11 | 1.390E-11 | 2.993E-12 | 3.322E-13 | 3.688E-14 | 4.068E-15 | 7.906E-16 | 4.516E-16 | 5.012E-17 | 5.563E-18 |
| sn113 | 2.366E-12 | 2.338E-12 | 2.275E-12 | 2.048E-12 | 1.524E-12 | 1.056E-12 | 2.273E-13 | 2.523E-14 | 2.800E-15 | 3.089E-16 | 6.004E-17 | 3.429E-17 | 3.806E-18 | 4.224E-19 |
| in114 | 7.002E-07 | 6.809E-07 | 6.393E-07 | 5.004E-07 | 2.520E-07 | 1.073E-07 | 3.020E-09 | 1.823E-11 | 1.100E-13 | 6.548E-16 | 1.453E-17 | 3.952E-18 | 2.385E-20 | 1.440E-22 |
| in114m | 2.077E-07 | 2.020E-07 | 1.897E-07 | 1.485E-07 | 7.476E-08 | 3.183E-08 | 8.960E-10 | 5.408E-12 | 3.264E-14 | 1.943E-16 | 4.311E-18 | 1.172E-18 | 7.076E-21 | 4.271E-23 |
| cd115m | 1.511E-03 | 1.465E-03 | 1.366E-03 | 1.040E-03 | 4.854E-04 | 1.879E-04 | 3.559E-06 | 1.218E-08 | 4.165E-11 | 1.403E-13 | 2.040E-15 | 4.800E-16 | 1.642E-18 | 5.619E-21 |
| in115 | 3.486E-16 | 3.486E-16 | 3.486E-16 | 3.486E-16 | 3.486E-16 | 3.486E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 | 3.487E-16 |
| in115m | 8.421E-08 | 8.169E-08 | 7.612E-08 | 5.798E-08 | 2.705E-08 | 1.047E-08 | 1.984E-10 | 6.786E-13 | 2.322E-15 | 7.820E-18 | 1.137E-19 | 2.676E-20 | 9.154E-23 | 3.132E-25 |
| cd116 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 | 1.529E-19 |
| sn117m | 2.295E-08 | 2.073E-08 | 1.648E-08 | 6.754E-09 | 5.558E-10 | 2.482E-11 | 5.628E-17 | 4.690E-25 | 3.909E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 2.202E-03 | 2.192E-03 | 2.168E-03 | 2.080E-03 | 1.853E-03 | 1.604E-03 | 8.773E-04 | 3.699E-04 | 1.560E-04 | 6.563E-05 | 3.449E-05 | 2.767E-05 | 1.167E-05 | 4.921E-06 |
| sb120m | 6.337E-18 | 4.982E-18 | 2.899E-18 | 3.529E-19 | 9.699E-22 | 6.291E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 4.415E-04 | 4.414E-04 | 4.413E-04 | 4.410E-04 | 4.401E-04 | 4.389E-04 | 4.339E-04 | 4.273E-04 | 4.206E-04 | 4.140E-04 | 4.092E-04 | 4.075E-04 | 4.012E-04 | 3.949E-04 |
| sn121m | 1.866E-04 | 1.866E-04 | 1.865E-04 | 1.864E-04 | 1.860E-04 | 1.855E-04 | 1.835E-04 | 1.806E-04 | 1.778E-04 | 1.750E-04 | 1.729E-04 | 1.722E-04 | 1.695E-04 | 1.669E-04 |
| te121 | 1.137E-07 | 1.127E-07 | 1.106E-07 | 1.027E-07 | 8.348E-08 | 6.453E-08 | 2.200E-08 | 4.711E-09 | 1.009E-09 | 2.152E-10 | 6.828E-11 | 4.611E-11 | 9.876E-12 | 2.116E-12 |
| te121m | 5.692E-08 | 5.644E-08 | 5.538E-08 | 5.144E-08 | 4.183E-08 | 3.233E-08 | 1.102E-08 | 2.360E-09 | 5.056E-10 | 1.078E-10 | 3.421E-11 | 2.310E-11 | 4.948E-12 | 1.060E-12 |
| sn123 | 3.825E-02 | 3.784E-02 | 3.694E-02 | 3.363E-02 | 2.586E-02 | 1.864E-02 | 4.745E-03 | 6.696E-04 | 9.449E-05 | 1.326E-05 | 3.082E-06 | 1.871E-06 | 2.641E-07 | 3.727E-08 |
| te123m | 1.034E-04 | 1.022E-04 | 9.958E-05 | 8.994E-05 | 6.764E-05 | 4.744E-05 | 1.077E-05 | 1.289E-06 | 1.544E-07 | 1.838E-08 | 3.779E-09 | 2.200E-09 | 2.635E-10 | 3.155E-11 |
| sb124 | 1.903E-02 | 1.860E-02 | 1.766E-02 | 1.444E-02 | 8.211E-03 | 4.068E-03 | 2.159E-04 | 3.229E-06 | 4.829E-08 | 7.139E-10 | 3.115E-11 | 1.068E-11 | 1.597E-13 | 2.388E-15 |
| sn125 | 5.110E-08 | 4.425E-08 | 3.202E-08 | 9.098E-09 | 2.684E-10 | 3.341E-12 | 5.455E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 7.873E-01 | 7.862E-01 | 7.838E-01 | 7.744E-01 | 7.487E-01 | 7.180E-01 | 6.025E-01 | 4.687E-01 | 3.646E-01 | 2.834E-01 | 2.351E-01 | 2.205E-01 | 1.715E-01 | 1.334E-01 |
| te125m | 5.223E-02 | 5.217E-02 | 5.202E-02 | 5.145E-02 | 4.985E-02 | 4.787E-02 | 4.022E-02 | 3.129E-02 | 2.434E-02 | 1.892E-02 | 1.569E-02 | 1.472E-02 | 1.145E-02 | 8.909E-03 |
| i125 | 1.483E-10 | 1.449E-10 | 1.375E-10 | 1.121E-10 | 6.327E-11 | 3.105E-11 | 1.584E-12 | 2.239E-14 | 3.164E-16 | 4.419E-18 | 1.849E-19 | 6.246E-20 | 8.827E-22 | 1.247E-23 |
| sn126 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 | 8.455E-06 |
| sb126 | 2.294E-05 | 2.292E-05 | 2.286E-05 | 2.267E-05 | 2.255E-05 | 2.255E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 | 2.254E-05 |
| sb126m | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 | 1.134E-04 |
| i126 | 3.135E-10 | 2.816E-10 | 2.202E-10 | 8.658E-11 | 6.261E-12 | 2.379E-13 | 2.752E-19 | 8.746E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 2.245E-18 | 1.566E-18 | 6.965E-19 | 2.983E-20 | 4.398E-24 | 7.476E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 6.643E-02 | 6.559E-02 | 6.376E-02 | 5.702E-02 | 4.176E-02 | 2.833E-02 | 5.598E-03 | 5.495E-04 | 5.394E-05 | 5.262E-06 | 9.331E-07 | 5.165E-07 | 5.070E-08 | 4.977E-09 |
| te127m | 2.724E-02 | 2.690E-02 | 2.614E-02 | 2.339E-02 | 1.713E-02 | 1.162E-02 | 2.296E-03 | 2.254E-04 | 2.212E-05 | 2.158E-06 | 3.827E-07 | 2.118E-07 | 2.080E-08 | 2.041E-09 |
| xe127 | 6.964E-08 | 6.704E-08 | 6.153E-08 | 4.409E-08 | 1.734E-08 | 5.428E-09 | 4.225E-11 | 4.048E-14 | 3.878E-17 | 3.645E-20 | 2.052E-22 | 3.493E-23 | 3.346E-26 | 3.206E-29 |
| te128 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 | 2.224E-18 |
| te129 | 1.496E-02 | 1.436E-02 | 1.309E-02 | 9.121E-03 | 3.319E-03 | 9.430E-04 | 4.897E-06 | 2.629E-09 | 1.411E-12 | 7.422E-16 | 2.714E-18 | 3.985E-19 | 2.139E-22 | 1.148E-25 |
| te129m | 1.204E-02 | 1.155E-02 | 1.053E-02 | 7.338E-03 | 2.671E-03 | 7.587E-04 | 3.940E-06 | 2.115E-09 | 1.135E-12 | 5.971E-16 | 2.183E-18 | 3.206E-19 | 1.721E-22 | 9.239E-26 |
| i129 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 |
| xe129m | 4.419E-12 | 3.780E-12 | 2.661E-12 | 6.788E-13 | 1.481E-14 | 1.267E-16 | 2.872E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 6.661E-08 | 5.604E-08 | 3.800E-08 | 8.381E-09 | 1.217E-10 | 6.268E-13 | 1.705E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 5.258E-07 | 4.677E-07 | 3.594E-07 | 1.291E-07 | 7.330E-09 | 2.062E-10 | 6.774E-17 | 3.554E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 3.099E-15 | 2.686E-15 | 1.948E-15 | 5.582E-16 | 1.692E-17 | 2.199E-19 | 4.464E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 8.432E-17 | 7.475E-17 | 5.699E-17 | 1.985E-17 | 1.035E-18 | 2.620E-20 | 5.536E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 2.298E-14 | 1.855E-14 | 1.147E-14 | 1.764E-15 | 9.335E-18 | 1.369E-20 | 1.950E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe133 | 7.843E-13 | 6.021E-13 | 3.321E-13 | 3.285E-14 | 5.048E-17 | 1.588E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 37

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba133 | 2.217E-06 | 2.216E-06 | 2.215E-06 | 2.208E-06 | 2.188E-06 | 2.164E-06 | 2.067E-06 | 1.935E-06 | 1.812E-06 | 1.696E-06 | 1.615E-06 | 1.588E-06 | 1.487E-06 | 1.392E-06 |
| cs134 | 3.279E+01 | 3.273E+01 | 3.260E+01 | 3.208E+01 | 3.067E+01 | 2.900E+01 | 2.240E+01 | 1.640E+01 | 1.173E+01 | 8.378E+00 | 6.525E+00 | 5.991E+00 | 4.284E+00 | 3.063E+00 |
| cs135 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 | 6.852E-06 |
| cs136 | 5.759E-05 | 5.183E-05 | 4.090E-05 | 1.627E-05 | 1.232E-06 | 4.956E-08 | 7.279E-14 | 3.257E-22 | 1.457E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 6.312E-06 | 5.681E-06 | 4.482E-06 | 1.783E-06 | 1.350E-07 | 5.432E-09 | 7.977E-15 | 3.569E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.422E+00 | 2.421E+00 | 2.421E+00 | 2.418E+00 | 2.411E+00 | 2.401E+00 | 2.363E+00 | 2.309E+00 | 2.257E+00 | 2.205E+00 | 2.168E+00 | 2.155E+00 | 2.106E+00 | 2.058E+00 |
| ba137m | 8.453E+00 | 8.452E+00 | 8.449E+00 | 8.440E+00 | 8.414E+00 | 8.382E+00 | 8.248E+00 | 8.060E+00 | 7.877E+00 | 7.697E+00 | 7.566E+00 | 7.521E+00 | 7.350E+00 | 7.183E+00 |
| la137 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.949E-11 | 6.948E-11 | 6.948E-11 |
| la138 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 | 8.727E-14 |
| ce139 | 2.222E-04 | 2.199E-04 | 2.150E-04 | 1.969E-04 | 1.538E-04 | 1.131E-04 | 3.133E-05 | 4.984E-06 | 7.931E-07 | 1.256E-07 | 3.191E-08 | 1.998E-08 | 3.179E-09 | 5.058E-10 |
| ba140 | 1.862E-04 | 1.670E-04 | 1.307E-04 | 5.051E-05 | 3.521E-06 | 1.279E-07 | 1.223E-13 | 2.964E-22 | 7.179E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.218E-03 | 1.093E-03 | 8.557E-04 | 3.312E-04 | 2.305E-05 | 8.369E-07 | 8.007E-13 | 1.940E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 2.391E-01 | 2.291E-01 | 2.082E-01 | 1.433E-01 | 5.042E-02 | 1.373E-02 | 5.975E-05 | 2.491E-08 | 1.038E-11 | 4.237E-15 | 1.283E-17 | 1.766E-18 | 7.364E-22 | 3.070E-25 |
| pr143 | 2.266E-04 | 2.046E-04 | 1.626E-04 | 6.651E-05 | 5.443E-06 | 2.414E-07 | 5.319E-13 | 4.254E-21 | 3.402E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.927E-13 | 1.917E-13 | 1.895E-13 | 1.810E-13 | 1.592E-13 | 1.357E-13 | 6.967E-14 | 2.682E-14 | 1.032E-14 | 3.963E-15 | 1.945E-15 | 1.525E-15 | 5.871E-16 | 2.260E-16 |
| ce144 | 7.041E+00 | 7.007E+00 | 6.931E+00 | 6.642E+00 | 5.896E+00 | 5.082E+00 | 2.733E+00 | 1.125E+00 | 4.627E-01 | 1.899E-01 | 9.800E-02 | 7.816E-02 | 3.216E-02 | 1.323E-02 |
| pr144 | 7.879E+01 | 7.841E+01 | 7.755E+01 | 7.432E+01 | 6.597E+01 | 5.687E+01 | 3.058E+01 | 1.258E+01 | 5.178E+00 | 2.125E+00 | 1.097E+00 | 8.749E-01 | 3.599E-01 | 1.481E-01 |
| pr144m | 3.554E-02 | 3.537E-02 | 3.499E-02 | 3.353E-02 | 2.976E-02 | 2.565E-02 | 1.380E-02 | 5.677E-03 | 2.336E-03 | 9.588E-04 | 4.947E-04 | 3.945E-04 | 1.623E-04 | 6.680E-05 |
| nd144 | 2.126E-13 | 2.128E-13 | 2.133E-13 | 2.150E-13 | 2.194E-13 | 2.241E-13 | 2.379E-13 | 2.473E-13 | 2.512E-13 | 2.528E-13 | 2.534E-13 | 2.535E-13 | 2.537E-13 | 2.539E-13 |
| pm144 | 2.057E-10 | 2.049E-10 | 2.031E-10 | 1.964E-10 | 1.789E-10 | 1.592E-10 | 9.784E-11 | 4.874E-11 | 2.427E-11 | 1.207E-11 | 7.179E-12 | 6.011E-12 | 2.994E-12 | 1.491E-12 |
| pm145 | 2.233E-08 | 2.233E-08 | 2.232E-08 | 2.229E-08 | 2.219E-08 | 2.206E-08 | 2.153E-08 | 2.076E-08 | 1.998E-08 | 1.922E-08 | 1.868E-08 | 1.849E-08 | 1.778E-08 | 1.710E-08 |
| sm145 | 8.160E-09 | 8.127E-09 | 8.053E-09 | 7.771E-09 | 7.032E-09 | 6.210E-09 | 3.692E-09 | 1.754E-09 | 8.336E-10 | 3.953E-10 | 2.270E-10 | 1.878E-10 | 8.924E-11 | 4.240E-11 |
| pm146 | 1.651E-05 | 1.650E-05 | 1.648E-05 | 1.638E-05 | 1.610E-05 | 1.577E-05 | 1.445E-05 | 1.275E-05 | 1.125E-05 | 9.919E-06 | 9.035E-06 | 8.752E-06 | 7.721E-06 | 6.812E-06 |
| sm146 | 1.979E-11 | 1.980E-11 | 1.983E-11 | 1.995E-11 | 1.982E-11 | 1.984E-11 | 1.995E-11 | 2.000E-11 | 2.016E-

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| eu156 | 1.056E-03 | 9.635E-04 | 7.846E-04 | 3.531E-04 | 3.774E-05 | 2.333E-06 | 2.062E-11 | 1.205E-18 | 7.037E-26 | 3.927E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 4.470E-11 | 4.469E-11 | 4.469E-11 | 4.467E-11 | 4.461E-11 | 4.454E-11 | 4.423E-11 | 4.380E-11 | 4.338E-11 | 4.296E-11 | 4.265E-11 | 4.254E-11 | 4.213E-11 | 4.172E-11 |
| tb158 | 1.210E-07 | 1.209E-07 | 1.209E-07 | 1.209E-07 | 1.209E-07 | 1.208E-07 | 1.205E-07 | 1.200E-07 | 1.195E-07 | 1.191E-07 | 1.187E-07 | 1.186E-07 | 1.182E-07 | 1.177E-07 |
| dy159 | 9.621E-09 | 9.529E-09 | 9.326E-09 | 8.574E-09 | 6.777E-09 | 5.057E-09 | 1.487E-09 | 2.578E-10 | 4.471E-11 | 7.717E-12 | 2.091E-12 | 1.338E-12 | 2.321E-13 | 4.024E-14 |
| tb160 | 3.304E-02 | 3.241E-02 | 3.104E-02 | 2.625E-02 | 1.641E-02 | 9.143E-03 | 7.931E-04 | 2.397E-05 | 7.242E-07 | 2.168E-08 | 1.598E-09 | 6.550E-10 | 1.979E-11 | 5.981E-13 |
| tb161 | 2.194E-12 | 1.795E-12 | 1.142E-12 | 1.972E-13 | 1.442E-15 | 3.163E-18 | 2.425E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.368E-14 | 1.367E-14 | 1.367E-14 | 1.367E-14 | 1.367E-14 | 1.367E-14 |
| ho166m | 1.925E-07 | 1.925E-07 | 1.925E-07 | 1.925E-07 | 1.924E-07 | 1.924E-07 | 1.923E-07 | 1.922E-07 | 1.921E-07 | 1.920E-07 | 1.919E-07 | 1.919E-07 | 1.918E-07 | 1.917E-07 |
| tm167 | 3.805E-19 | 3.276E-19 | 2.338E-19 | 6.300E-20 | 1.602E-21 | 1.658E-23 | 8.332E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.274E-09 | 1.255E-09 | 1.213E-09 | 1.065E-09 | 7.396E-10 | 4.696E-10 | 7.034E-11 | 4.645E-12 | 3.068E-13 | 2.011E-14 | 2.654E-15 | 1.328E-15 | 8.770E-17 | 5.791E-18 |
| er169 | 5.225E-13 | 4.508E-13 | 3.234E-13 | 8.888E-14 | 2.389E-15 | 2.649E-17 | 1.778E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| yb169 | 5.446E-12 | 5.215E-12 | 4.731E-12 | 3.239E-12 | 1.121E-12 | 2.994E-13 | 1.199E-15 | 4.436E-19 | 1.642E-22 | 5.945E-26 | 1.647E-28 | 2.200E-29 | 8.141E-33 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 38

0 nuclide thermal power, watts

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tm170 | 1.120E-05 | 1.108E-05 | 1.082E-05 | 9.843E-06 | 7.559E-06 | 5.441E-06 | 1.376E-06 | 1.925E-07 | 2.691E-08 | 3.743E-09 | 8.639E-10 | 5.233E-10 | 7.317E-11 | 1.023E-11 |
| tm171 | 4.549E-07 | 4.540E-07 | 4.520E-07 | 4.443E-07 | 4.233E-07 | 3.985E-07 | 3.097E-07 | 2.159E-07 | 1.505E-07 | 1.048E-07 | 8.012E-08 | 7.308E-08 | 5.095E-08 | 3.552E-08 |
| total | 3.001E+02 | 2.984E+02 | 2.946E+02 | 2.809E+02 | 2.486E+02 | 2.175E+02 | 1.374E+02 | 7.969E+01 | 5.091E+01 | 3.581E+01 | 2.923E+01 | 2.754E+01 | 2.273E+01 | 1.975E+01 |

1

5 more years for cooling used fuel material fission products page 39

0 element thermal power, watts

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 4.038E-04 | 4.037E-04 | 4.034E-04 | 4.023E-04 | 3.993E-04 | 3.956E-04 | 3.803E-04 | 3.595E-04 | 3.399E-04 | 3.212E-04 | 3.081E-04 | 3.037E-04 | 2.871E-04 | 2.714E-04 |
| ga | 2.513E-19 | 2.500E-19 | 2.472E-19 | 2.364E-19 | 2.085E-19 | 1.784E-19 | 9.290E-20 | 3.652E-20 | 1.435E-20 | 5.628E-21 | 2.806E-21 | 2.212E-21 | 8.696E-22 | 3.418E-22 |
| ge | 2.549E-11 | 2.505E-11 | 2.410E-11 | 2.072E-11 | 1.357E-11 | 8.016E-12 | 8.871E-13 | 3.799E-14 | 1.627E-15 | 6.906E-17 | 6.600E-18 | 2.958E-18 | 1.267E-19 | 5.425E-21 |
| as | 4.945E-11 | 4.595E-11 | 3.901E-11 | 2.097E-11 | 4.650E-12 | 1.427E-12 | 1.308E-13 | 5.600E-15 | 2.398E-16 | 1.018E-17 | 9.730E-19 | 4.360E-19 | 1.867E-20 | 7.994E-22 |
| se | 4.784E-07 | 4.784E-07 | 4.782E-07 | 4.777E-07 | 4.765E-07 | 4.754E-07 | 4.733E-07 | 4.728E-07 | 4.727E-07 | 4.727E-07 | 4.727E-07 | 4.727E-07 | 4.727E-07 | 4.727E-07 |
| kr | 1.763E-01 | 1.762E-01 | 1.761E-01 | 1.755E-01 | 1.740E-01 | 1.722E-01 | 1.646E-01 | 1.543E-01 | 1.447E-01 | 1.357E-01 | 1.293E-01 | 1.272E-01 | 1.193E-01 | 1.118E-01 |
| rb | 2.003E-05 | 1.862E-05 | 1.579E-05 | 8.341E-06 | 1.446E-06 | 1.907E-07 | 3.447E-09 | 2.856E-10 | 1.262E-10 | 1.178E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 | 1.173E-10 |
| sr | 2.132E+00 | 2.099E+00 | 2.029E+00 | 1.793E+00 | 1.366E+00 | 1.112E+00 | 9.108E-01 | 8.835E-01 | 8.625E-01 | 8.419E-01 | 8.270E-01 | 8.219E-01 | 8.024E-01 | 7.833E-01 |
| y | 7.245E+00 | 7.178E+00 | 7.034E+00 | 6.540E+00 | 5.592E+00 | 4.963E+00 | 4.342E+00 | 4.211E+00 | 4.111E+00 | 4.013E+00 | 3.942E+00 | 3.918E+00 | 3.824E+00 | 3.733E+00 |
| zr | 9.267E+00 | 9.069E+00 | 8.637E+00 | 7.147E+00 | 4.205E+00 | 2.173E+00 | 1.375E-01 | 2.647E-03 | 5.393E-05 | 4.052E-06 | 3.136E-06 | 3.103E-06 | 3.085E-06 | 3.085E-06 |
| nb | 1.823E+01 | 1.787E+01 | 1.706E+01 | 1.425E+01 | 8.543E+00 | 4.477E+00 | 2.881E-01 | 5.732E-03 | 1.114E-04 | 3.295E-06 | 1.415E-06 | 1.384E-06 | 1.488E-06 | 1.623E-06 |
| mo | 6.605E-13 | 6.605E-13 | 6.605E-13 | 6.605E-13 | 6.605E-13 | 6.605E-13 | 6.604E-13 | 6.603E-13 | 6.602E-13 | 6.601E-13 | 6.600E-13 | 6.600E-13 | 6.598E-13 | 6.597E-13 |
| tc | 9.151E-05 | 9.151E-05 | 9.151E-05 | 9.151E-05 | 9.150E-05 | 9.150E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 | 9.149E-05 |
| ru | 2.505E+00 | 2.442E+00 | 2.307E+00 | 1.871E+00 | 1.149E+00 | 7.612E-01 | 3.737E-01 | 1.883E-01 | 9.536E-02 | 4.820E-02 | 2.903E-02 | 2.441E-02 | 1.236E-02 | 6.257E-03 |
| rh | 1.241E+02 | 1.237E+02 | 1.226E+02 | 1.187E+02 | 1.083E+02 | 9.662E+01 | 6.005E+01 | 3.041E+01 | 1.540E+01 | 7.782E+00 | 4.687E+00 | 3.941E+00 | 1.995E+00 | 1.010E+00 |
| pd | 3.086E-07 | 3.086E-07 | 3.084E-07 | 3.079E-07 | 3.076E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 | 3.075E-07 |
| ag | 1.952E+00 | 1.941E+00 | 1.917E+00 | 1.826E+00 | 1.594E+00 | 1.346E+00 | 6.632E-01 | 2.408E-01 | 8.745E-02 | 3.167E-02 | 1.489E-02 | 1.150E-02 | 4.177E-03 | 1.518E-03 |
| cd | 1.533E-03 | 1.487E-03 | 1.388E-03 | 1.062E-03 | 5.073E-04 | 2.096E-04 | 2.421E-05 | 1.943E-05 | 1.836E-05 | 1.739E-05 | 1.673E-05 | 1.652E-05 | 1.570E-05 | 1.493E-05 |
| in | 9.922E-07 | 9.646E-07 | 9.051E-07 | 7.069E-07 | 3.538E-07 | 1.496E-07 | 4.118E-09 | 2.465E-11 | 1.822E-13 | 5.274E-15 | 1.158E-15 | 8.054E-16 | 3.988E-16 | 3.542E-16 |
| sn | 4.109E-02 | 4.067E-02 | 3.974E-02 | 3.635E-02 | 2.834E-02 | 2.088E-02 | 6.249E-03 | 1.656E-03 | 8.573E-04 | 6.763E-04 | 6.281E-04 | 6.178E-04 | 5.911E-04 | 5.752E-04 |
| sb | 8.065E-01 | 8.050E-01 | 8.016E-01 | 7.890E-01 | 7.571E-01 | 7.222E-01 | 6.028E-01 | 4.688E-01 | 3.647E-01 | 2.836E-01 | 2.352E-01 | 2.206E-01 | 1.717E-01 | 1.336E-01 |
| te | 1.730E-01 | 1.707E-01 | 1.656E-01 | 1.484E-01 | 1.148E-01 | 8.957E-02 | 4.813E-02 | 3.207E-02 | 2.442E-02 | 1.893E-02 | 1.570E-02 | 1.472E-02 | 1.145E-02 | 8.909E-03 |
| i | 4.424E-07 | 4.318E-07 | 4.136E-07 | 3.839E-07 | 3.755E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 | 3.753E-07 |
| xe | 5.954E-07 | 5.348E-07 | 4.210E-07 | 1.732E-07 | 2.467E-08 | 5.635E-09 | 4.225E-11 | 4.048E-14 | 3.878E-17 | 3.645E-20 | 2.052E-22 | 3.493E-23 | 3.346E-26 | 3.206E-29 |
| cs | 3.522E+01 | 3.516E+01 | 3.502E+01 | 3.450E+01 | 3.308E+01 | 3.140E+01 | 2.530E+01 | 1.871E+01 | 1.398E+01 | 1.058E+01 | 8.693E+00 | 8.146E+00 | 6.390E+00 | 5.121E+00 |
| ba | 8.453E+00 | 8.452E+00 | 8.449E+00 | 8.440E+00 | 8.414E+00 | 8.382E+00 | 8.248E+00 | 8.060E+00 | 7.877E+00 | 7.697E+00 | 7.566E+00 | 7.521E+00 | 7.350E+00 | 7.183E+00 |
| la | 1.218E-03 | 1.093E-03 | 8.557E-04 | 3.312E-04 | 2.305E-05 | 8.370E-07 | 7.038E-11 | 6.957E-11 | 6.957E-11 | 6.957E-11 | 6.957E-11 | 6.957E-11 | 6.957E-11 | 6.957E-11 |
| ce | 7.281E+00 | 7.236E+00 | 7.139E+00 | 6.785E+00 | 5.946E+00 | 5.096E+00 | 2.733E+00 | 1.125E+00 | 4.627E-01 | 1.899E-01 | 9.800E-02 | 7.816E-02 | 3.216E-02 | 1.323E-02 |
| pr | 7.882E+01 | 7.844E+01 | 7.759E+01 | 7.435E+01 | 6.600E+01 | 5.690E+01 | 3.059E+01 | 1.259E+01 | 5.180E+00 | 2.126E+00 | 1.097E+00 | 8.749E-01 | 3.600E-01 | 1.481E-01 |
| nd | 7.168E-06 | 6.317E-06 | 4.755E-06 | 1.575E-06 | 7.145E-08 | 1.519E-09 | 2.381E-13 | 2.474E-13 | 2.512E-13 | 2.528E-13 | 2.534E-13 | 2.535E-13 | 2.538E-13 | 2.539E-13 |
| pm | 1.241E+00 | 1.232E+00 | 1.212E+00 | 1.147E+00 | 1.027E+00 | 9.423E-01 | 7.638E-01 | 5.863E-01 | 4.503E-01 | 3.455E-01 | 2.838E-01 | 2.653E-01 | 2.038E-01 | 1.565E-01 |
| sm | 1.313E-03 | 1.313E-03 | 1.313E-03 | 1.312E-03 | 1.311E-03 | 1.309E-03 | 1.302E-03 | 1.292E-03 | 1.282E-03 | 1.272E-03 | 1.265E-03 | 1.263E-03 | 1.253E-03 | 1.243E-03 |
| eu | 2.398E+00 | 2.397E+00 | 2.394E+00 | 2.384E+00 | 2.358E+00 | 2.325E+00 | 2.195E+00 | 2.021E+00 | 1.861E+00 | 1.713E+00 | 1.612E+00 | 1.578E+00 | 1.454E+00 | 1.339E+00 |
| gd | 1.738E-04 | 1.728E-04 | 1.706E-04 | 1.622E-04 | 1.408E-04 | 1.181E-04 | 5.661E-05 | 1.976E-05 | 6.899E-06 | 2.401E-06 | 1.096E-06 | 8.383E-07 | 2.927E-07 | 1.022E-07 |
| tb | 3.304E-02 | 3.241E-02 | 3.104E-02 | 2.625E-02 | 1.641E-02 | 9.143E-03 | 7.933E-04 | 2.409E-05 | 8.438E-07 | 1.408E-07 | 1.204E-07 | 1.193E-07 | 1.182E-07 | 1.177E-07 |
| dy | 9.621E-09 | 9.529E-09 | 9.326E-09 | 8.574E-09 | 6.777E-09 | 5.057E-09 | 1.487E-09 | 2.578E-10 | 4.471E-11 | 7.717E-12 | 2.091E-12 | 1.338E-12 | 2.321E-13 | 4.024E-14 |
| ho | 1.925E-07 | 1.925E-07 | 1.925E-07 | 1.925E-07 | 1.924E-07 | 1.924E-07 | 1.923E-07 | 1.922E-07 | 1.921E-07 | 1.920E-07 | 1.919E-07 | 1.919E-07 | 1.918E-07 | 1.917E-07 |
| er | 5.225E-13 | 4.508E-13 | 3.234E-13 | 8.888E-14 | 2.389E-15 | 2.649E-17 | 1.778E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 1.166E-05 | 1.154E-05 | 1.127E-05 | 1.029E-05 | 7.983E-06 | 5.840E-06 | 1.686E-06 | 4.084E-07 | 1.774E-07 | 1.086E-07 | 8.098E-08 | 7.360E-08 | 5.102E-08 | 3.553E-08 |
| yb | 5.446E-12 | 5.215E-12 | 4.731E-12 | 3.239E-12 | 1.121E-12 | 2.994E-13 | 1.199E-15 | 4.436E-19 | 1.642E-22 | 5.945E-26 | 1.647E-28 | 2.200E-29 | 8.141E-33 | 0.000E+00 |
| totals | 3.001E+02 | 2.984E+02 | 2.946E+02 | 2.809E+02 | 2.486E+02 | 2.175E+02 | 1.374E+02 | 7.969E+01 | 5.091E+01 | 3.581E+01 | 2.923E+01 | 2.754E+01 | 2.273E+01 | 1.975E+01 |

56$ array 20 entries read

0t

1 * normal termination of execution *

0 table of contents for material tables

0 case or subcase printed page

1 1

## B.2 ORIGEN RESULTS FOR COOLING MOX FUEL ROD A1

```
*****************************************************************************
 *                                                                           *
 *                              SCALE 6.1.3                                  *
 *                             ------------                                  *
 *                             October  2013                                 *
 *                                                                           *
 *          SCALE:  A Comprehensive Modeling and Simulation Suite            *
 *                  for Nuclear Safety Analysis and Design                   *
 *                                                                           *
 *                     Reactor and Nuclear Systems Division                  *
 *                       Oak Ridge National Laboratory                       *
 *                                                                           *
 *                          http://scale.ornl.gov                            *
 *                           scalehelp@ornl.gov                              *
 *                                                                           *
 *****************************************************************************

 *****************************************************************************

                   Job Information
                  ---------------
      Job started on jupiter on Mon 21/10/2013 11:40:25
      Working directory: /tmp/scale.8re.2654
      Input file name  : /home/8re/MOX/a1xmox.inp
      Output file name : /home/8re/MOX/a1xmox.out

 *****************************************************************************
          primary module access and input record ( Scale 6.1 driver )


    module shell will be called at 11:40:25.684 on 10/21/2013.
    sequence specification record:#shell

    Input Data:

      cp $RTNDIR/ft71_mox_a1x ft71f001

    module shell  is finished. completion code     0. total cpu time used .04 seconds.


    module origens will be called at 11:40:25.717 on 10/21/2013.
    sequence specification record:#origens

    Input Data:

      0$$ a11 71 e t
      Decay Case
      3$$ 21 1 1 0 a16 2 a33 0 e t
      35$$ 0 t
      54$$ a1 1 a8 1 a11 0  e
      56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
      57** 0 a3 0.0 e
      95$$ 0 t
      5 more years for cooling used fuel material
      ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
      '
      '
      '                  14      365      365       366       272       93
      '  5/3/2008 = day 0
      '       240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12
      ' 60** 2         6.5  24      73      134     389     754     1119
      '       1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      '       1485    1757     1850    2215    2580
      '
      60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
      61** 1e-20 1e-20 5r1e-20
      65$$
      'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
      t
      56$$ f0 t

    module origens  is finished. completion code     0. total cpu time used .14 seconds.

    Scale is finished at 11:40:25.859 on 10/21/2013
1



        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                        program verification information                                   *****
        *****                                                                                                          *****
        *****                                    code system:  SCALE    version:  6.1                                  *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****              program:  origen                                                                            *****
        *****                                                                                                          *****
        *****        creation date:  21_feb_2013                                                                       *****
        *****                                                                                                          *****
        *****              library:  /scale/scale6.1/Linux_x86_64/bin                                                  *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****      production code:  origen                                                                            *****
        *****                                                                                                          *****
        *****             revision:  6.1.2                                                                             *****
        *****                                                                                                          *****
        *****              jobname:  8re                                                                               *****
        *****                                                                                                          *****
        *****         machine name:  jupiter.ornl.gov                                                                  *****
        *****                                                                                                          *****
        *****    date of execution:  21_oct_2013                                                                       *****
        *****                                                                                                          *****
        *****    time of execution:  11:40:25.72                                                                       *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
1
1            * input echo * (with break between col. 1-72 and 73-80)
0        note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0.............................columns 1-72.............................                ..73-80.

 0$$ a11 71 e t
 Decay Case
 3$$ 21 1 1 0 a16 2 a33 0 e t
 35$$ 0 t
 54$$ a1 1 a8 1 a11 0  e
 56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
 57** 0 a3 0.0 e
 95$$ 0 t
 5 more years for cooling used fuel material
 ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
 '
 '
 '                  14      365      365       366       272       93
```

```
'  5/3/2008 = day 0
'      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12
' 60** 2          6.5  24      73      134     389     754     1119
'      1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
'      1485    1757     1850    2215    2580
'
 60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
 61** 1e-20 1e-20 5r1e-20
 65$$
 'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
 t
 56$$ f0 t
0when job "fails", make sure no fido input.......................................... is out here!


     0$ array     12 entries read

     0t

     3$ array     33 entries read

     0t
1library information...

          cross-section data taken from position number    1 of library on unit 21.

          ******************************************************************************
          *                          ENDF/B-VII.1 decay data                           *
          *                         compiled August 30, 2012                           *
          *                      i.c. gauld, g. ilas, m. pigni                         *
          *                  reactor and nuclear systems division                      *
          *                     oak ridge national laboratory                          *
          ******************************************************************************
0         ******************************************************************************
0                   .other identification and sizes of library.
0                    data set name:  /scale/scale6.1/data/origen.rev03.end7dec
0                 8/31/2012    date library was produced
0                      2237    total number of nuclides in library
                        910    number of light-element nuclides
                        176    number of actinide nuclides
                       1151    number of fission product nuclides
0                      2636    number of nonzero off-diagonal matrix elements
0         ******************************************************************************

    35$ array      1 entries read

     0t

    54$ array     12 entries read

    56$ array     20 entries read

    57* array      5 entries read

    95$ array      1 entries read

     0t


                  14      365      365       366       272       93
   5/3/2008 = day 0
       240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12
  60** 2          6.5  24      73      134     389     754     1119
       1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
       1485    1757     1850    2215    2580


    60* array     13 entries read

    61* array      7 entries read
 gram-atoms   grams   curies   watts-all   watts-gamma

    65$ array     63 entries read

     0t
0  obtaining data from position no.   43 on unit no.   71
1
     5 more years for cooling used fuel material                                                    light elements         page    1
0                                                 nuclide concentrations, grams
                                                  basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
                initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
      h  1   1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04 1.049E-04
      h  2   2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05 2.245E-05
      h  3   9.473E-07 9.470E-07 9.463E-07 9.438E-07 9.367E-07 9.279E-07 8.922E-07 8.434E-07 7.973E-07 7.536E-07 7.227E-07 7.124E-07 6.734E-07 6.366E-07
     he  3   1.734E-07 1.737E-07 1.743E-07 1.769E-07 1.840E-07 1.927E-07 2.285E-07 2.772E-07 3.234E-07 3.671E-07 3.980E-07 4.083E-07 4.472E-07 4.840E-07
     he  4   6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02 6.110E-02
     li  6   4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12 4.094E-12
     li  7   5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13 5.050E-13
     be  9   3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08 3.922E-08
     be 10   2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06 2.152E-06
      b 10   9.871E-13 9.925E-13 1.005E-12 1.052E-12 1.185E-12 1.350E-12 2.039E-12 3.026E-12 4.014E-12 5.004E-12 5.739E-12 5.991E-12 6.978E-12 7.965E-12
      b 11   1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09 1.229E-09
      c 12   1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03 1.253E-03
      c 13   1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01 1.972E-01
      c 14   6.366E-06 6.366E-06 6.366E-06 6.366E-06 6.366E-06 6.366E-06 6.366E-06 6.365E-06 6.364E-06 6.363E-06 6.362E-06 6.362E-06 6.362E-06 6.361E-06
      n 14   7.613E-08 7.614E-08 7.615E-08 7.618E-08 7.629E-08 7.642E-08 7.696E-08 7.773E-08 7.851E-08 7.928E-08 7.986E-08 8.005E-08 8.083E-08 8.160E-08
      n 15   1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04 1.849E-04
      o 16   2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03 2.037E+03
      o 17   6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04 6.704E-04
      o 18   3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09 3.351E-09
      f 19   2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15 2.359E-15
     na 23   6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16
     mg 24   6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16 6.570E-16
     mg 25   6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16
     mg 26   7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16
     al 27   7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16 7.382E-16
     si 28   7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16
     si 29   7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16
     si 30   8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16 8.257E-16
      p 31   8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16
      s 32   8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16 8.740E-16
      s 33   8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16 8.977E-16
      s 34   9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16 9.312E-16
      s 36   9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16
     cl 35   8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16 8.935E-16
     cl 36   6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17 6.785E-17
     cl 37   1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15
     ar 36   9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16 9.732E-16
     ar 38   1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15
     ar 39   1.943E-18 1.943E-18 1.943E-18 1.943E-18 1.942E-18 1.941E-18 1.938E-18 1.933E-18 1.928E-18 1.923E-18 1.919E-18 1.918E-18 1.913E-18 1.908E-18
     ar 40   1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15 1.101E-15
      k 39   1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15
      k 40   1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15 1.037E-15
      k 41   1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15 1.172E-15
     ca 40   1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15
     ca 41   8.263E-19 8.263E-19 8.263E-19 8.263E-19 8.263E-19 8.263E-19 8.263E-19 8.262E-19 8.262E-19 8.262E-19 8.262E-19 8.262E-19 8.262E-19 8.262E-19
     ca 42   1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15
     ca 43   1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15 1.154E-15
     ca 44   1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15 1.226E-15
     ca 46   1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15
     ca 48   1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15
     sc 45   1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15 1.179E-15
     sc 46   8.506E-19 8.367E-19 8.061E-19 6.975E-19 4.650E-19 2.808E-19 3.405E-20 1.663E-21 8.119E-23 3.932E-24 4.144E-25 1.920E-25 9.374E-27 4.577E-28
1
     5 more years for cooling used fuel material                                                    light elements         page    2
0                                                 nuclide concentrations, grams
                                                  basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
                initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     ti 46   1.310E-15 1.310E-15 1.310E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15
     ti 47   1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ti 48 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 |
| ti 49 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 | 1.356E-15 |
| ti 50 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 | 1.372E-15 |
| v 50 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 | 9.252E-19 |
| v 51 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 | 3.700E-17 |
| cr 50 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 | 1.331E-15 |
| cr 52 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 |
| cr 53 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 | 1.409E-15 |
| cr 54 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 | 1.521E-15 |
| mn 54 | 3.621E-19 | 3.605E-19 | 3.569E-19 | 3.433E-19 | 3.079E-19 | 2.688E-19 | 1.926E-19 | 6.783E-20 | 3.015E-20 | 1.337E-20 | 7.308E-21 | 5.944E-21 | 2.642E-21 | 1.175E-21 |
| mn 55 | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.464E-15 | 1.465E-15 | 1.465E-15 | 1.465E-15 | 1.466E-15 | 1.466E-15 | 1.466E-15 | 1.466E-15 |
| fe 54 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 |
| fe 55 | 3.747E-18 | 3.742E-18 | 3.730E-18 | 3.685E-18 | 3.562E-18 | 3.415E-18 | 2.863E-18 | 2.224E-18 | 1.728E-18 | 1.342E-18 | 1.112E-18 | 1.042E-18 | 8.098E-19 | 6.291E-19 |
| fe 56 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 | 1.626E-15 |
| fe 57 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 |
| fe 58 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 | 4.514E-15 |
| co 59 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 | 1.637E-15 |
| co 60 | 1.893E-16 | 1.892E-16 | 1.889E-16 | 1.877E-16 | 1.844E-16 | 1.804E-16 | 1.646E-16 | 1.443E-16 | 1.265E-16 | 1.109E-16 | 1.006E-16 | 9.726E-17 | 8.528E-17 | 7.479E-17 |
| ni 58 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 | 1.571E-15 |
| ni 59 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 | 1.204E-15 |
| ni 60 | 2.052E-15 | 2.052E-15 | 2.053E-15 | 2.054E-15 | 2.057E-15 | 2.061E-15 | 2.077E-15 | 2.097E-15 | 2.115E-15 | 2.131E-15 | 2.141E-15 | 2.144E-15 | 2.156E-15 | 2.167E-15 |
| ni 61 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 |
| ni 62 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 | 1.665E-15 |
| ni 63 | 3.857E-17 | 3.857E-17 | 3.856E-17 | 3.855E-17 | 3.851E-17 | 3.847E-17 | 3.829E-17 | 3.803E-17 | 3.777E-17 | 3.751E-17 | 3.732E-17 | 3.725E-17 | 3.700E-17 | 3.675E-17 |
| ni 64 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 | 1.760E-15 |
| cu 63 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.703E-15 | 1.704E-15 | 1.704E-15 | 1.704E-15 | 1.704E-15 | 1.704E-15 |
| cu 65 | 4.864E-18 | 4.864E-18 | 4.864E-18 | 4.864E-18 | 4.865E-18 | 4.865E-18 | 4.866E-18 | 4.867E-18 | 4.867E-18 | 4.867E-18 | 4.867E-18 | 4.867E-18 | 4.867E-18 | 4.867E-18 |
| zn 64 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 | 8.044E-18 |
| te123 | 6.032E-18 | 6.032E-18 | 6.032E-18 | 6.032E-18 | 6.032E-18 | 6.033E-18 | 6.033E-18 | 6.034E-18 | 6.034E-18 | 6.034E-18 | 6.034E-18 | 6.034E-18 | 6.034E-18 | 6.034E-18 |
| te124 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 | 3.342E-15 |
| te125 | 4.323E-17 | 4.323E-17 | 4.323E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 | 4.324E-17 |
| te126 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 | 6.395E-19 |
| xe131 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 | 5.159E-16 |
| xe132 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 | 2.740E-16 |
| cs133 | 8.295E-19 | 8.295E-19 | 8.296E-19 | 8.298E-19 | 8.305E-19 | 8.313E-19 | 8.347E-19 | 8.393E-19 | 8.435E-19 | 8.476E-19 | 8.504E-19 | 8.513E-19 | 8.548E-19 | 8.581E-19 |
| ba130 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 | 2.771E-15 |
| ba132 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 | 1.960E-18 |
| la137 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 | 2.940E-16 |
| la138 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 | 3.260E-17 |
| la139 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 | 5.111E-18 |
| ce136 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 | 3.391E-15 |
| yb176 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 | 2.025E-18 |
| lu175 | 4.442E-15 | 4.442E-15 | 4.443E-15 | 4.445E-15 | 4.450E-15 | 4.454E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 | 4.458E-15 |
| lu176 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 | 9.213E-17 |
| hf174 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 | 1.719E-15 |
| hf175 | 1.617E-17 | 1.585E-17 | 1.516E-17 | 1.275E-17 | 7.847E-18 | 4.289E-18 | 3.433E-19 | 9.248E-21 | 2.491E-22 | 6.644E-24 | 4.495E-25 | 1.790E-25 | 4.820E-27 | 1.298E-28 |
| hf176 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 | 5.004E-15 |
| hf177 | 6.547E-16 | 6.547E-16 | 6.547E-16 | 6.547E-16 | 6.547E-16 | 6.547E-16 | 6.547E-16 | 6.548E-16 | 6.548E-16 | 6.548E-16 | 6.548E-16 | 6.548E-16 | 6.548E-16 | 6.548E-16 |
| hf178 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 | 4.153E-15 |
| hf179 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 | 1.188E-14 |

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5 more years for cooling used fuel material light elements page 3

0 nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hf180 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 | 9.903E-15 |
| hf181 | 6.134E-19 | 5.937E-19 | 5.516E-19 | 4.143E-19 | 1.859E-19 | 6.858E-20 | 1.060E-21 | 2.712E-24 | 6.937E-27 | 1.746E-29 | 2.044E-31 | 4.467E-32 | 1.143E-34 | 0.000E+00 |
| hf182 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 | 2.264E-17 |
| ta180m | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 | 3.130E-19 |
| ta181 | 2.546E-15 | 2.546E-15 | 2.546E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 | 2.547E-15 |
| ta182 | 1.008E-17 | 9.955E-18 | 9.688E-18 | 8.716E-18 | 6.483E-18 | 4.484E-18 | 9.609E-19 | 1.059E-19 | 1.168E-20 | 1.281E-21 | 2.483E-22 | 1.419E-22 | 1.636E-23 | 2.514E-24 |
| w 182 | 3.613E-15 | 3.613E-15 | 3.613E-15 | 3.614E-15 | 3.616E-15 | 3.618E-15 | 3.622E-15 | 3.623E-15 | 3.623E-15 | 3.623E-15 | 3.623E-15 | 3.623E-15 | 3.623E-15 | 3.623E-15 |
| w 183 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 | 9.931E-15 |
| w 184 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 | 9.125E-15 |
| w 185 | 2.419E-18 | 2.375E-18 | 2.278E-18 | 1.938E-18 | 1.233E-18 | 7.023E-19 | 6.674E-20 | 2.298E-21 | 7.911E-23 | 2.699E-24 | 2.192E-25 | 9.292E-26 | 3.199E-27 | 1.101E-28 |
| w 186 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 | 2.976E-15 |
| re185 | 8.076E-16 | 8.077E-16 | 8.078E-16 | 8.081E-16 | 8.088E-16 | 8.094E-16 | 8.100E-16 | 8.101E-16 | 8.101E-16 | 8.101E-16 | 8.101E-16 | 8.101E-16 | 8.101E-16 | 8.101E-16 |
| re186m | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 | 2.753E-18 |
| re187 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 | 5.232E-15 |
| os186 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 |
| os187 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 | 6.115E-16 |
| os188 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 | 2.423E-15 |
| os189 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 | 1.786E-16 |
| os190 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 | 5.413E-17 |
| os192 | 1.164E-16 | 1.164E-16 | 1.164E-16 | 1.164E-16 | 1.164E-16 | 1.164E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 | 1.165E-16 |
| ir191 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 | 6.762E-17 |
| ir192 | 1.845E-18 | 1.810E-18 | 1.735E-18 | 1.472E-18 | 9.295E-19 | 5.242E-19 | 4.783E-20 | 1.554E-21 | 5.048E-23 | 1.625E-24 | 1.264E-25 | 5.278E-26 | 1.715E-27 | 5.570E-29 |
| ir193 | 2.274E-15 | 2.274E-15 | 2.274E-15 | 2.275E-15 | 2.275E-15 | 2.275E-15 | 2.276E-15 | 2.279E-15 | 2.283E-15 | 2.287E-15 | 2.291E-15 | 2.294E-15 | 2.295E-15 | 2.299E-15 | 2.303E-15 |
| pt192 | 1.940E-15 | 1.940E-15 | 1.940E-15 | 1.940E-15 | 1.940E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 | 1.941E-15 |
| pt193 | 3.023E-16 | 3.023E-16 | 3.022E-16 | 3.020E-16 | 3.015E-16 | 3.008E-16 | 2.979E-16 | 2.938E-16 | 2.897E-16 | 2.857E-16 | 2.828E-16 | 2.818E-16 | 2.779E-16 | 2.741E-16 |
| pt194 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 | 5.786E-15 |
| pt195 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 | 5.337E-17 |
| pt196 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 | 9.396E-18 |
| au197 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 |
| hg196 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 | 1.191E-16 |
| hg198 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 |
| hg199 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 | 1.231E-15 |
| hg200 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 | 1.296E-14 |
| hg201 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 | 5.283E-15 |
| hg202 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 | 5.743E-15 |
| hg204 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 | 5.555E-15 |
| tl203 | 5.542E-17 | 5.542E-17 | 5.543E-17 | 5.545E-17 | 5.549E-17 | 5.551E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 | 5.552E-17 |
| tl204 | 1.283E-18 | 1.282E-18 | 1.279E-18 | 1.268E-18 | 1.237E-18 | 1.200E-18 | 1.056E-18 | 8.791E-19 | 7.320E-19 | 6.092E-19 | 5.315E-19 | 5.073E-19 | 4.224E-19 | 3.517E-19 |
| tl205 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 | 2.413E-17 |
| pb204 | 4.127E-19 | 4.140E-19 | 4.168E-19 | 4.276E-19 | 4.575E-19 | 4.937E-19 | 6.336E-19 | 8.051E-19 | 9.479E-19 | 1.067E-18 | 1.143E-18 | 1.166E-18 | 1.248E-18 | 1.317E-18 |
| total | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 |

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5 more years for cooling used fuel material light elements page 4

0 element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.283E-04 | 1.283E-04 | 1.283E-04 | 1.283E-04 | 1.283E-04 | 1.283E-04 | 1.282E-04 | 1.282E-04 | 1.281E-04 | 1.281E-04 | 1.280E-04 | 1.280E-04 | 1.280E-04 | 1.280E-04 |
| he | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 | 6.110E-02 |
| li | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 | 4.599E-12 |
| be | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 | 2.191E-06 |
| b | 1.230E-09 | 1.230E-09 | 1.230E-09 | 1.230E-09 | 1.230E-09 | 1.231E-09 | 1.231E-09 | 1.232E-09 | 1.233E-09 | 1.234E-09 | 1.235E-09 | 1.235E-09 | 1.236E-09 | 1.237E-09 |
| c | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 | 1.985E-01 |
| n | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 | 1.850E-04 |
| o | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 | 2.037E+03 |
| f | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 | 2.359E-15 |
| ne | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 | 2.449E-19 |
| na | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 |
| mg | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 |
| al | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 | 7.382E-16 |
| si | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 | 2.386E-15 |
| p | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 |
| s | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 |
| cl | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 | 1.985E-15 |
| ar | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 |
| k | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 | 3.269E-15 |
| ca | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 |
| sc | 1.180E-15 | 1.180E-15 | 1.180E-15 | 1.180E-15 | 1.180E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 | 1.179E-15 |
| ti | 6.622E-15 | 6.622E-15 | 6.622E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 | 6.623E-15 |
| v | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.793E-17 | 3.793E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 | 3.792E-17 |
| cr | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 | 5.681E-15 |
| mn | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.463E-15 | 1.464E-15 | 1.464E-15 | 1.464E-15 | 1.465E-15 | 1.465E-15 | 1.466E-15 | 1.466E-15 | 1.466E-15 | 1.466E-15 | 1.466E-15 |
| fe | 9.172E-15 | 9.172E-15 | 9.172E-15 | 9.172E-15 | 9.172E-15 | 9.172E-15 | 9.171E-15 | 9.171E-15 | 9.170E-15 | 9.170E-15 | 9.170E-15 | 9.170E-15 | 9.169E-15 | 9.169E-15 |
| co | 1.826E-15 | 1.826E-

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| os | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 | 6.601E-15 |
| ir | 2.344E-15 | 2.344E-15 | 2.344E-15 | 2.344E-15 | 2.344E-15 | 2.344E-15 | 2.346E-15 | 2.350E-15 | 2.355E-15 | 2.359E-15 | 2.361E-15 | 2.362E-15 | 2.366E-15 | 2.370E-15 |
| pt | 8.091E-15 | 8.091E-15 | 8.091E-15 | 8.091E-15 | 8.091E-15 | 8.091E-15 | 8.088E-15 | 8.084E-15 | 8.080E-15 | 8.076E-15 | 8.073E-15 | 8.072E-15 | 8.068E-15 | 8.064E-15 |
| au | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 | 2.755E-15 |
| hg | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 | 4.098E-14 |
| tl | 8.083E-17 | 8.083E-17 | 8.083E-17 | 8.084E-17 | 8.085E-17 | 8.083E-17 | 8.070E-17 | 8.053E-17 | 8.038E-17 | 8.026E-17 | 8.018E-17 | 8.016E-17 | 8.007E-17 | 8.000E-17 |
| pb | 4.288E-19 | 4.301E-19 | 4.329E-19 | 4.437E-19 | 4.736E-19 | 5.098E-19 | 6.497E-19 | 8.212E-19 | 9.640E-19 | 1.083E-18 | 1.159E-18 | 1.182E-18 | 1.265E-18 | 1.333E-18 |
| totals | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 | 2.038E+03 |

1

5 more years for cooling used fuel material light elements page 5

0

nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 9.167E-03 | 9.164E-03 | 9.157E-03 | 9.133E-03 | 9.064E-03 | 8.979E-03 | 8.634E-03 | 8.161E-03 | 7.715E-03 | 7.292E-03 | 6.993E-03 | 6.894E-03 | 6.517E-03 | 6.160E-03 |
| be 10 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 |
| c 14 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.852E-05 | 2.852E-05 | 2.852E-05 | 2.852E-05 | 2.851E-05 | 2.851E-05 |
| na 22 | 6.953E-21 | 6.943E-21 | 6.920E-21 | 6.832E-21 | 6.593E-21 | 6.306E-21 | 5.236E-21 | 4.012E-21 | 3.075E-21 | 2.355E-21 | 1.931E-21 | 1.804E-21 | 1.383E-21 | 1.060E-21 |
| si 32 | 6.179E-21 | 6.179E-21 | 6.178E-21 | 6.177E-21 | 6.173E-21 | 6.169E-21 | 6.149E-21 | 6.121E-21 | 6.094E-21 | 6.066E-21 | 6.046E-21 | 6.039E-21 | 6.011E-21 | 5.984E-21 |
| p 32 | 7.513E-20 | 6.874E-20 | 5.645E-20 | 2.766E-20 | 8.160E-21 | 6.273E-21 | 6.151E-21 | 6.123E-21 | 6.095E-21 | 6.068E-21 | 6.047E-21 | 6.040E-21 | 6.013E-21 | 5.986E-21 |
| p 33 | 5.917E-18 | 5.602E-18 | 4.953E-18 | 3.069E-18 | 8.033E-19 | 1.514E-19 | 1.415E-22 | 6.528E-27 | 3.011E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 2.298E-15 | 2.261E-15 | 2.182E-15 | 1.900E-15 | 1.289E-15 | 7.949E-16 | 1.055E-16 | 5.855E-18 | 3.250E-19 | 1.790E-20 | 2.076E-21 | 9.938E-22 | 5.517E-23 | 3.063E-24 |
| cl 36 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 | 2.240E-18 |
| ar 37 | 3.260E-16 | 3.134E-16 | 2.867E-16 | 2.028E-16 | 7.693E-17 | 2.302E-17 | 1.484E-19 | 1.085E-22 | 7.940E-26 | 5.695E-29 | 2.622E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 6.624E-17 | 6.624E-17 | 6.624E-17 | 6.623E-17 | 6.621E-17 | 6.618E-17 | 6.606E-17 | 6.589E-17 | 6.572E-17 | 6.555E-17 | 6.543E-17 | 6.538E-17 | 6.522E-17 | 6.505E-17 |
| ar 42 | 1.407E-22 | 1.407E-22 | 1.405E-22 | 1.401E-22 | 1.396E-22 | 1.376E-22 | 1.347E-22 | 1.319E-22 | 1.291E-22 | 1.271E-22 | 1.265E-22 | 1.238E-22 | 1.212E-22 | 1.212E-22 |
| k 40 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 | 7.431E-21 |
| k 42 | 1.407E-22 | 1.407E-22 | 1.406E-22 | 1.405E-22 | 1.401E-22 | 1.396E-22 | 1.376E-22 | 1.347E-22 | 1.319E-22 | 1.291E-22 | 1.271E-22 | 1.265E-22 | 1.238E-22 | 1.212E-22 |
| ca 41 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 | 7.066E-20 |
| ca 45 | 3.189E-15 | 3.162E-15 | 3.102E-15 | 2.879E-15 | 2.336E-15 | 1.801E-15 | 6.074E-16 | 1.282E-16 | 2.705E-17 | 5.682E-18 | 1.782E-18 | 1.199E-18 | 2.530E-19 | 5.338E-20 |
| sc 45m | 6.059E-20 | 6.008E-20 | 5.893E-20 | 5.470E-20 | 4.439E-20 | 3.422E-20 | 1.154E-20 | 2.435E-21 | 5.139E-22 | 1.080E-22 | 3.386E-23 | 2.278E-23 | 4.807E-24 | 1.014E-24 |
| sc 46 | 2.883E-14 | 2.836E-14 | 2.732E-14 | 2.364E-14 | 1.576E-14 | 9.515E-15 | 1.154E-15 | 5.636E-17 | 2.752E-18 | 1.333E-19 | 1.404E-20 | 6.507E-21 | 3.177E-22 | 1.551E-23 |
| v 49 | 6.820E-18 | 6.792E-18 | 6.728E-18 | 6.485E-18 | 5.851E-18 | 5.147E-18 | 3.013E-18 | 1.400E-18 | 6.502E-19 | 3.014E-19 | 1.702E-19 | 1.400E-19 | 6.505E-20 | 3.022E-20 |
| cr 51 | 3.184E-16 | 3.029E-16 | 2.706E-16 | 1.747E-16 | 5.125E-17 | 1.114E-17 | 1.887E-20 | 2.038E-24 | 2.201E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 | 1.057E-23 |
| mn 54 | 2.807E-15 | 2.794E-15 | 2.767E-15 | 2.661E-15 | 2.387E-15 | 2.084E-15 | 1.183E-15 | 5.258E-16 | 2.337E-16 | 1.037E-16 | 5.666E-17 | 4.608E-17 | 2.048E-17 | 9.106E-18 |
| fe 55 | 8.879E-15 | 8.867E-15 | 8.840E-15 | 8.733E-15 | 8.442E-15 | 8.093E-15 | 6.785E-15 | 5.271E-15 | 4.095E-15 | 3.179E-15 | 2.634E-15 | 2.470E-15 | 1.919E-15 | 1.491E-15 |
| fe 59 | 1.099E-15 | 1.065E-15 | 9.932E-16 | 7.562E-16 | 3.525E-16 | 1.363E-16 | 2.566E-18 | 8.706E-21 | 2.954E-23 | 9.868E-26 | 1.426E-27 | 3.348E-28 | 1.136E-30 | 0.000E+00 |
| fe 60 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 |
| co 56 | 7.152E-23 | 7.024E-23 | 6.746E-23 | 5.766E-23 | 3.714E-23 | 2.148E-23 | 2.179E-24 | 8.232E-26 | 3.311E-27 | 1.165E-28 | 1.014E-29 | 4.402E-30 | 1.663E-31 | 0.000E+00 |
| co 57 | 1.486E-17 | 1.478E-17 | 1.461E-17 | 1.398E-17 | 1.233E-17 | 1.056E-17 | 5.508E-18 | 2.171E-18 | 8.557E-19 | 3.364E-19 | 1.681E-19 | 1.226E-19 | 5.226E-20 | 2.060E-20 |
| co 58 | 3.373E-16 | 3.308E-16 | 3.166E-16 | 2.668E-16 | 1.652E-16 | 9.095E-17 | 7.508E-18 | 2.113E-19 | 5.947E-21 | 1.657E-22 | 1.158E-23 | 4.664E-24 | 1.313E-25 | 3.695E-27 |
| co 60 | 2.141E-13 | 2.139E-13 | 2.136E-13 | 2.123E-13 | 2.085E-13 | 2.040E-13 | 1.861E-13 | 1.632E-13 | 1.431E-13 | 1.254E-13 | 1.137E-13 | 1.100E-13 | 9.645E-14 | 8.457E-14 |
| co 60m | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 | 8.086E-23 |
| ni 59 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.604E-17 | 9.603E-17 |
| ni 63 | 2.164E-15 | 2.163E-15 | 2.163E-15 | 2.163E-15 | 2.161E-15 | 2.158E-15 | 2.148E-15 | 2.133E-15 | 2.119E-15 | 2.104E-15 | 2.093E-15 | 2.090E-15 | 2.075E-15 | 2.061E-15 |
| zn 65 | 2.248E-17 | 2.235E-17 | 2.207E-17 | 2.099E-17 | 1.827E-17 | 1.536E-17 | 7.442E-18 | 2.638E-18 | 9.349E-19 | 3.304E-19 | 1.526E-19 | 1.171E-19 | 4.152E-20 | 1.472E-20 |
| sn119m | 2.200E-22 | 2.190E-22 | 2.169E-22 | 2.079E-22 | 1.851E-22 | 1.603E-22 | 8.766E-23 | 3.697E-23 | 6.558E-24 | 3.446E-24 | 2.765E-24 | 1.166E-24 | 4.918E-25 | |
| sn121 | 5.642E-21 | 5.641E-21 | 5.640E-21 | 5.636E-21 | 5.624E-21 | 5.609E-21 | 5.547E-21 | 5.461E-21 | 5.375E-21 | 5.291E-21 | 5.229E-21 | 5.208E-21 | 5.126E-21 | 5.046E-21 |
| sn121m | 7.270E-21 | 7.269E-21 | 7.267E-21 | 7.262E-21 | 7.247E-21 | 7.227E-21 | 7.148E-21 | 7.036E-21 | 6.926E-21 | 6.817E-21 | 6.738E-21 | 6.711E-21 | 6.606E-21 | 6.502E-21 |
| sn123 | 3.068E-24 | 3.036E-24 | 2.963E-24 | 2.698E-24 | 2.074E-24 | 1.495E-24 | 3.807E-25 | 5.372E-26 | 7.580E-27 | 1.064E-27 | 2.473E-28 | 1.501E-28 | 2.119E-29 | 2.990E-30 |
| sb124 | 2.624E-20 | 2.564E-20 | 2.435E-20 | 1.991E-20 | 1.132E-20 | 5.609E-21 | 2.977E-22 | 4.452E-24 | 6.659E-26 | 9.844E-28 | 4.296E-29 | 1.472E-29 | 2.202E-31 | 0.000E+00 |
| sb125 | 3.445E-21 | 3.440E-21 | 3.429E-21 | 3.388E-21 | 3.276E-21 | 3.142E-21 | 2.636E-21 | 2.051E-21 | 1.595E-21 | 1.240E-21 | 1.029E-21 | 9.648E-22 | 7.506E-22 | 5.839E-22 |
| te121 | 3.499E-22 | 3.469E-22 | 3.404E-22 | 3.160E-22 | 2.569E-22 | 1.985E-22 | 6.768E-23 | 1.449E-23 | 3.105E-24 | 6.623E-25 | 2.101E-25 | 1.419E-25 | 2.631E-31 | 0.000E+00 |
| te121m | 3.485E-22 | 3.455E-22 | 3.390E-22 | 3.149E-22 | 2.561E-22 | 1.979E-22 | 6.745E-23 | 1.445E-23 | 3.095E-24 | 6.602E-25 | 2.094E-25 | 1.414E-25 | 3.029E-26 | 5.489E-27 |
| te123m | 1.707E-17 | 1.687E-17 | 1.643E-17 | 1.484E-17 | 1.116E-17 | 7.829E-18 | 1.777E-18 | 2.128E-19 | 2.548E-20 | 3.033E-21 | 6.236E-22 | 3.631E-22 | 4.348E-23 | 5.206E-24 |
| te125m | 5.502E-17 | 5.371E-17 | 5.087E-17 | 4.118E-17 | 2.279E-17 | 1.091E-17 | 5.023E-19 | 6.614E-21 | 4.651E-22 | 3.046E-22 | 2.519E-22 | 2.363E-22 | 1.838E-22 | 1.430E-22 |
| te127 | 1.318E-19 | 1.302E-19 | 1.266E-19 | 1.132E-19 | 8.288E-20 | 5.623E-20 | 1.111E-20 | 1.091E-21 | 1.071E-22 | 1.044E-23 | 1.852E-24 | 1.025E-24 | 0.000E+00 | 0.000E+00 |
| te127m | 1.346E-19 | 1.329E-19 | 1.292E-19 | 1.156E-19 | 8.462E-20 | 5.741E-20 | 1.134E-20 | 1.113E-21 | 1.093E-22 | 1.066E-23 | 1.891E-24 | 1.047E-24 | 1.027E-25 | 1.009E-26 |
| te129 | 5.396E-24 | 5.178E-24 | 4.719E-24 | 3.289E-24 | 1.197E-24 | 3.400E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 8.552E-24 | 8.207E-24 | 7.479E-24 | 5.213E-24 | 1.897E-24 | 5.389E-25 | 2.798E-27 | 1.502E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 1.211E-19 | 1.183E-19 | 1.122E-19 | 9.149E-20 | 5.165E-20 | 2.535E-20 | 1.293E-21 | 1.827E-23 | 2.583E-25 | 3.607E-27 | 1.509E-28 | 5.098E-29 | 7.205E-31 | 0.000E+00 |
| i126 | 3.759E-24 | 3.377E-24 | 2.653E-24 | 1.038E-24 | 7.509E-26 | 2.854E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 7.772E-20 | 7.482E-20 | 6.867E-20 | 4.921E-20 | 1.936E-20 | 6.058E-21 | 4.715E-23 | 4.517E-26 | 4.328E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 1.337E-21 | 1.189E-21 | 9.138E-22 | 3.280E-22 | 1.862E-23 | 5.238E-25 | 1.721E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.855E-18 | 2.534E-18 | 1.938E-18 | 6.814E-19 | 3.622E-20 | 9.283E-22 | 1.109E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 6

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cs134 | 7.094E-17 | 7.081E-17 | 7.052E-17 | 6.939E-17 | 6.634E-17 | 6.272E-17 | 4.962E-17 | 3.548E-17 | 2.537E-17 | 1.812E-17 | 1.412E-17 | 1.296E-17 | 9.266E-18 | 6.626E-18 |
| cs135 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 | 5.449E-24 |
| cs136 | 1.321E-24 | 1.189E-24 | 9.377E-25 | 3.731E-25 | 2.824E-26 | 1.136E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 6.655E-24 | 6.654E-24 | 6.652E-24 | 6.645E-24 | 6.625E-24 | 6.599E-24 | 6.494E-24 | 6.346E-24 | 6.201E-24 | 6.060E-24 | 5.957E-24 | 5.922E-24 | 5.787E-24 | 5.655E-24 |
| ba131 | 4.765E-19 | 4.223E-19 | 3.220E-19 | 1.121E-19 | 5.849E-21 | 1.480E-22 | 3.128E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 1.969E-17 | 1.969E-17 | 1.967E-17 | 1.961E-17 | 1.943E-17 | 1.922E-17 | 1.836E-17 | 1.726E-17 | 1.620E-17 | 1.506E-17 | 1.410E-17 | 1.320E-17 | 1.236E-17 | |
| ba137m | 6.302E-24 | 6.302E-24 | 6.300E-24 | 6.293E-24 | 6.273E-24 | 6.249E-24 | 6.150E-24 | 6.010E-24 | 5.873E-24 | 5.739E-24 | 5.641E-24 | 5.608E-24 | 5.480E-24 | 5.356E-24 |
| la137 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 |
| ce139 | 1.238E-19 | 1.226E-19 | 1.199E-19 | 1.097E-19 | 8.575E-20 | 6.307E-20 | 1.746E-20 | 2.778E-21 | 4.421E-22 | 6.999E-23 | 1.779E-23 | 1.114E-23 | 1.772E-24 | 2.819E-25 |
| ce141 | 4.055E-22 | 3.886E-22 | 3.530E-22 | 2.431E-22 | 8.551E-23 | 2.329E-23 | 1.013E-25 | 4.225E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm171 | 2.977E-21 | 2.971E-21 | 2.958E-21 | 2.907E-21 | 2.770E-21 | 2.608E-21 | 2.027E-21 | 1.413E-21 | 9.849E-22 | 6.859E-22 | 5.242E-22 | 4.782E-22 | 3.334E-22 | 2.324E-22 |
| lu172 | 2.274E-21 | 2.274E-21 | 2.270E-21 | 2.239E-21 | 2.133E-21 | 2.005E-21 | 1.532E-21 | 1.058E-21 | 7.305E-22 | 5.039E-22 | 3.823E-22 | 3.479E-22 | 2.402E-22 | 1.658E-22 |
| lu172m | 2.274E-21 | 2.270E-21 | 2.259E-21 | 2.219E-21 | 2.112E-21 | 1.985E-21 | 1.532E-21 | 1.058E-21 | 7.305E-22 | 5.039E-22 | 3.823E-22 | 3.479E-22 | 2.402E-22 | 1.658E-22 |
| lu173 | 6.696E-17 | 6.677E-17 | 6.636E-17 | 6.477E-17 | 6.052E-17 | 5.562E-17 | 3.906E-17 | 2.356E-17 | 1.421E-17 | 8.559E-18 | 5.872E-18 | 5.162E-18 | 3.114E-18 | 1.878E-18 |
| lu174 | 1.117E-16 | 1.116E-16 | 1.114E-16 | 1.106E-16 | 1.082E-16 | 1.052E-16 | 9.212E-17 | 7.513E-17 | 6.101E-17 | 4.947E-17 | 4.233E-17 | 4.013E-17 | 3.256E-17 | 2.641E-17 |
| lu174m | 3.189E-17 | 3.158E-17 | 3.090E-17 | 2.837E-17 | 2.233E-17 | 1.658E-17 | 4.776E-18 | 8.040E-19 | 1.354E-19 | 2.268E-20 | 6.011E-21 | 3.818E-21 | 6.427E-22 | 1.082E-22 |
| lu176 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 | 4.979E-24 |
| lu177 | 1.148E-16 | 1.138E-16 | 1.116E-16 | 1.035E-16 | 8.373E-17 | 6.433E-17 | 2.138E-17 | 4.417E-18 | 9.126E-19 | 1.877E-19 | 5.797E-20 | 3.879E-20 | 8.014E-21 | 1.656E-21 |
| lu177m | 5.141E-16 | 5.097E-16 | 4.999E-16 | 4.635E-16 | 3.750E-16 | 2.881E-16 | 9.576E-17 | 1.978E-17 | 4.088E-18 | 8.409E-19 | 2.597E-19 | 1.737E-19 | 3.590E-20 | 7.416E-21 |
| hf172 | 2.274E-21 | 2.270E-21 | 2.259E-21 | 2.219E-21 | 2.112E-21 | 1.985E-21 | 1.532E-21 | 1.058E-21 | 7.305E-22 | 5.039E-22 | 3.823E-22 | 3.479E-22 | 2.402E-22 | 1.658E-22 |
| hf175 | 1.724E-13 | 1.690E-13 | 1.617E-13 | 1.359E-13 | 8.368E-14 | 4.574E-14 | 1.661E-15 | 9.862E-17 | 2.657E-18 | 7.085E-20 | 4.793E-21 | 1.908E-21 | 5.140E-23 | 1.385E-24 |
| hf177m | 4.041E-16 | 4.006E-16 | 3.929E-16 | 3.643E-16 | 2.948E-16 | 2.265E-16 | 7.526E-17 | 1.555E-17 | 3.213E-18 | 6.609E-19 | 2.041E-19 | 1.366E-19 | 2.821E-20 | 5.829E-21 |
| hf181 | 1.044E-14 | 1.011E-14 | 9.391E-15 | 7.054E-15 | 3.166E-15 | 1.168E-15 | 1.805E-17 | 4.617E-20 | 1.181E-22 | 2.973E-25 | 3.480E-27 | 7.605E-28 | 1.946E-30 | 0.000E+00 |
| hf182 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 | 4.999E-21 |
| ta179 | 4.103E-19 | 4.094E-19 | 4.075E-19 | 4.002E-19 | 3.802E-19 | 3.568E-19 | 2.735E-19 | 1.869E-19 | 1.277E-19 | 8.722E-20 | 6.568E-20 | 5.961E-20 | 4.074E-20 | 2.784E-20 |
| ta182 | 6.303E-14 | 6.227E-14 | 6.060E-14 | 5.452E-14 | 4.055E-14 | 2.805E-14 | 6.011E-15 | 6.627E-16 | 7.307E-17 | 8.012E-18 | 1.553E-18 | 8.878E-19 | 1.023E-19 | 1.573E-20 |
| w181 | 5.939E-17 | 5.872E-17 | 5.723E-17 | 5.178E-17 | 3.912E-17 | 2.760E-17 | 6.420E-18 | 7.961E-19 | 9.872E-20 | 1.217E-20 | 2.569E-21 | 1.509E-21 | 1.872E-22 | 2.321E-23 |
| w185 | 2.275E-14 | 2.232E-14 | 2.142E-14 | 1.820E-14 | 1.160E-14 | 6.603E-15 | 6.275E-16 | 1.460E-17 | 7.438E-19 | 2.537E-20 | 2.056E-21 | 8.756E-22 | 3.208E-23 | 1.036E-24 |
| w188 | 3.440E-16 | 3.372E-16 | 3.225E-16 | 2.710E-16 | 1.666E-16 | 9.088E-17 | 7.218E-18 | 1.922E-19 | 5.119E-21 | 1.350E-22 | 9.054E-24 | 3.594E-24 | 9.572E-26 | 2.549E-27 |
| re183 | 1.061E-20 | 1.041E-20 | 9.953E-21 | 8.369E-21 | 5.152E-21 | 2.816E-21 | 2.254E-22 | 6.072E-24 | 1.636E-25 | 4.362E-27 | 2.951E-28 | 1.175E-28 | 3.165E-30 | 8.525E-32 |
| re184 | 1.458E-18 | 1.442E-18 | 1.406E-18 | 1.280E-18 | 1.007E-18 | 7.671E-19 | 2.659E-19 | 5.969E-20 | 1.336E-20 | 2.977E-21 | 9.724E-22 | 6.640E-22 | 1.491E-22 | 3.337E-23 |
| re184m | 1.391E-18 | 1.379E-18 | 1.354E-18 | 1.260E-18 | 1.031E-18 | 8.027E-19 | 2.820E-19 | 6.312E-20 | 1.413E-20 | 3.148E-21 | 1.032E-21 | 7.046E-22 | 1.577E-22 | 3.529E-23 |
| re186 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 |
| re186m | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 | 2.647E-20 |
| re187 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 | 2.311E-22 |
| re188 | 3.475E-16 | 3.407E-16 | 3.258E-16 | 2.738E-16 | 1.683E-16 | 9.181E-17 | 7.292E-18 | 1.942E-19 | 5.171E-21 | 1.364E-22 | 9.146E-24 | 3.631E-24 | 0.000E+00 | 0.000E+00 |
| os185 | 2.756E-17 | 2.716E-17 | 2.627E-17 | 2.307E-17 | 1.605E-17 | 1.022E-17 | 1.546E-18 | 1.036E-19 | 6.941E-21 | 4.616E-22 | 6.159E-23 | 3.093E-23 | 2.073E-24 | 1.389E-25 |
| os191 | 4.924E-20 | 4.500E-20 | 3.675E-20 | 1.672E-20 | 1.842E-21 | 1.183E-22 | 1.226E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| os194 | 3.162E-20 | 3.160E-20 | 3.155E-20 | 3.138E-20 | 3.090E-20 | 3.030E-20 | 2.796E-20 | 2.491E-20 | 2.219E-20 | 1.977E-20 | 1.814E-20 | 1.761E-20 | 1.569E-20 | 1.398E-20 |
| ir190 | 3.125E-24 | 2.778E-24 | 2.132E-24 | 7.612E-25 | 4.259E-26 | 1.176E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir191m | 4.924E-20 | 4.500E-20 | 3.675E-20 | 1.672E-20 | 1.842E-21 | 1.183E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir192 | 1.700E-14 | 1.668E-14 | 1.599E-14 | 1.357E-14 | 8.566E-15 | 4.818E-15 | 4.485E-16 | 1.432E-17 | 4.608E-19 | 1.497E-20 | 1.165E-21 | 1.568E-23 | 5.193E-25 | |
| ir193m | 3.960E-21 | 3.472E-21 | 2.582E-21 | 8.159E-22 | 3.242E-23 | 5.847E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir194 | 3.163E-20 | 3.161E-20 | 3.156E-20 | 3.139E-20 | 3.091E-20 | 3.032E-20 | 2.797E-20 | 2.492E-20 | 2.220E-20 | 1.977E-20 | 1.814E-20 | 1.762E-20 | 1.570E-20 | 1.398E-20 |
| pt193 | 1.120E-14 | 1.120E-14 | 1.120E-14 | 1.119E-14 | 1.117E-14 | 1.115E-14 | 1.104E-14 | 1.089E-14 | 1.074E-14 | 1.059E-14 | 1.048E-14 | 1.044E-14 | 1.030E-14 | 1.016E-14 |
| au194 | 9.498E-23 | 9.498E-23 | 9.498E-23 | 9.501E-23 | 9.495E-23 | 9.493E-23 | 9.482E-23 | 9.467E-23 | 9.453E-23 | 9.438E-23 | 9.427E-23 | 9.423E-23 | 9.408E-23 | 9.394E-23 |
| au195 | 6.533E-18 | 6.485E-18 | 6.377E-18 | 5.975E-18 | 4.978E-18 | 3.966E-18 | 1.534E-18 | 3.940E-19 | 1.012E-19 | 2.588E-20 | 9.398E-21 | 6.647E-21 | 1.707E-21 | 4.383E-22 |
| hg194 | 9.498E-23 | 9.498E-23 | 9.498E-23 | 9.497E-23 | 9.495E-23 | 9.492E-23 | 9.482E-23 | 9.467E-23 | 9.453E-23 | 9.438E-23 | 9.427E-23 | 9.423E-23 | 9.408E-23 | 9.394E-23 |
| hg203 | 1.446E-15 | 1.404E-15 | 1.313E-15 | 1.012E-15 | 4.883E-16 | 1.970E-16 | 4.437E-18 | 1.945E-20 | 8.525E-23 | 3.682E-25 | 6.438E-27 | 1.614E-27 | 7.075E-30 | 0.000E+00 |
| tl202 | 3.898E-24 | 3.483E-24 | 2.703E-24 | 1.000E-24 | 6.396E-26 | 2.093E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.271E-29 | 0.000E+00 |
| tl204 | 5.947E-16 | 5.941E-16 | 5.928E-16 | 5.876E-16 | 5.733E-16 | 5.560E-16 | 4.893E-16 | 4.074E-16 | 3.392E-16 | 2.823E-16 | 2.463E-16 | 2.351E-16 | 1.958E-16 | 1.630E-16 |
| total | 9.195E-03 | 9.192E-03 | 9.186E-03 | 9.161E-03 | 9.093E-03 | 9.008E-03 | 8.662E-03 | 8.190E-03 | 7.744E-03 | 7.321E-03 | 7.022E-03 | 6.922E-03 | 6.545E-03 | 6.189E-03 |

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5 more years for cooling used fuel material light elements page 7

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element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 9.167E-03 | 9.164E-03 | 9.157E-03 | 9.133E-03 | 9.064E-03 | 8.979E-03 | 8.634E-03 | 8.161E-03 | 7.715E-03 | 7.292E-03 | 6.993E-03 | 6.894E-03 | 6.517E-03 | 6.160E-03 |
| be | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 | 5.097E-08 |
| c | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.853E-05 | 2.852E-05 | 2.852E-05 | 2.852E-05 | 2.852E-05 | 2.851E-05 | 2.851E-05 |
| na | 6.953E-21 | 6.943E-21 | 6.920E-21 | 6.832E-21 | 6.593E-21 | 6.306E-21 | 5.236E-21 | 4.012E-21 | 3.075E

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| co | 2.145E-13 | 2.143E-13 | 2.139E-13 | 2.125E-13 | 2.087E-13 | 2.041E-13 | 1.861E-13 | 1.632E-13 | 1.431E-13 | 1.254E-13 | 1.137E-13 | 1.100E-13 | 9.645E-14 | 8.457E-14 |
| ni | 2.260E-15 | 2.259E-15 | 2.259E-15 | 2.259E-15 | 2.257E-15 | 2.254E-15 | 2.244E-15 | 2.229E-15 | 2.215E-15 | 2.200E-15 | 2.189E-15 | 2.186E-15 | 2.172E-15 | 2.157E-15 |
| zn | 2.248E-17 | 2.235E-17 | 2.207E-17 | 2.099E-17 | 1.827E-17 | 1.536E-17 | 1.442E-18 | 2.638E-18 | 9.349E-19 | 1.304E-19 | 1.526E-19 | 1.171E-19 | 4.152E-20 | 1.472E-20 |
| sn | 1.313E-20 | 1.313E-20 | 1.313E-20 | 1.311E-20 | 1.306E-20 | 1.300E-20 | 1.278E-20 | 1.253E-20 | 1.232E-20 | 1.211E-20 | 1.197E-20 | 1.192E-20 | 1.173E-20 | 1.155E-20 |
| sb | 2.969E-20 | 2.908E-20 | 2.778E-20 | 2.329E-20 | 1.460E-20 | 8.751E-21 | 2.934E-21 | 2.055E-21 | 1.595E-21 | 1.240E-21 | 1.029E-21 | 9.648E-22 | 7.506E-22 | 5.839E-22 |
| te | 7.236E-17 | 7.084E-17 | 6.756E-17 | 5.625E-17 | 3.412E-17 | 1.885E-17 | 2.302E-18 | 2.216E-19 | 2.617E-20 | 3.360E-21 | 8.797E-22 | 6.018E-22 | 2.274E-22 | 1.482E-22 |
| i | 1.211E-19 | 1.183E-19 | 1.122E-19 | 9.149E-20 | 5.165E-20 | 2.535E-20 | 1.293E-21 | 1.828E-23 | 2.605E-25 | 5.856E-27 | 2.399E-27 | 2.300E-27 | 2.249E-27 | 2.249E-27 |
| xe | 7.906E-20 | 7.601E-20 | 6.959E-20 | 4.954E-20 | 1.938E-20 | 6.059E-21 | 4.715E-23 | 4.517E-26 | 4.328E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 7.379E-17 | 7.334E-17 | 7.245E-17 | 7.007E-17 | 6.637E-17 | 6.272E-17 | 4.962E-17 | 3.548E-17 | 2.537E-17 | 1.812E-17 | 1.412E-17 | 1.296E-17 | 9.266E-18 | 6.626E-18 |
| ba | 2.017E-17 | 2.011E-17 | 1.999E-17 | 1.972E-17 | 1.944E-17 | 1.922E-17 | 1.836E-17 | 1.719E-17 | 1.609E-17 | 1.506E-17 | 1.434E-17 | 1.410E-17 | 1.320E-17 | 1.236E-17 |
| la | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 | 1.279E-17 |
| ce | 1.242E-19 | 1.230E-19 | 1.202E-19 | 1.100E-19 | 8.583E-20 | 6.309E-20 | 1.746E-20 | 2.778E-21 | 4.421E-22 | 6.999E-23 | 1.779E-23 | 1.114E-23 | 1.772E-24 | 2.819E-25 |
| tm | 2.978E-21 | 2.972E-21 | 2.959E-21 | 2.908E-21 | 2.770E-21 | 2.608E-21 | 2.027E-21 | 1.413E-21 | 9.849E-22 | 6.859E-22 | 5.242E-22 | 4.782E-22 | 3.334E-22 | 2.324E-22 |
| lu | 8.394E-16 | 8.334E-16 | 8.201E-16 | 7.706E-16 | 6.498E-16 | 5.298E-16 | 2.531E-16 | 1.237E-16 | 8.036E-17 | 5.909E-17 | 4.853E-17 | 4.551E-17 | 3.571E-17 | 2.830E-17 |
| hf | 1.832E-13 | 1.795E-13 | 1.714E-13 | 1.433E-13 | 8.714E-14 | 4.713E-14 | 3.755E-15 | 1.142E-16 | 5.875E-18 | 7.373E-19 | 2.143E-19 | 1.438E-19 | 3.350E-20 | 1.100E-20 |
| ta | 6.303E-14 | 6.227E-14 | 6.060E-14 | 5.452E-14 | 4.055E-14 | 2.805E-14 | 6.011E-15 | 6.629E-16 | 7.320E-17 | 8.099E-18 | 1.619E-18 | 9.474E-19 | 1.431E-19 | 4.357E-20 |
| w | 2.315E-14 | 2.273E-14 | 2.180E-14 | 1.855E-14 | 1.180E-14 | 6.722E-15 | 6.411E-16 | 2.259E-17 | 8.477E-19 | 3.768E-20 | 4.639E-21 | 2.387E-21 | 2.173E-22 | 2.425E-23 |
| re | 3.504E-16 | 3.436E-16 | 3.286E-16 | 2.764E-16 | 1.704E-16 | 9.344E-17 | 7.893E-18 | 3.702E-19 | 8.582E-20 | 3.942E-20 | 5.517E-20 | 5.453E-20 | 5.347E-20 | 5.323E-20 |
| os | 2.764E-17 | 2.723E-17 | 2.633E-17 | 2.312E-17 | 1.608E-17 | 1.025E-17 | 1.574E-18 | 1.285E-19 | 2.913E-20 | 2.023E-20 | 1.820E-20 | 1.764E-20 | 1.569E-20 | 1.398E-20 |
| ir | 1.700E-14 | 1.668E-14 | 1.599E-14 | 1.357E-14 | 8.566E-15 | 4.831E-15 | 4.409E-16 | 1.435E-17 | 4.874E-19 | 3.475E-20 | 1.931E-20 | 1.810E-20 | 1.571E-20 | 1.399E-20 |
| pt | 1.120E-14 | 1.120E-14 | 1.120E-14 | 1.119E-14 | 1.117E-14 | 1.115E-14 | 1.104E-14 | 1.089E-14 | 1.074E-14 | 1.059E-14 | 1.048E-14 | 1.044E-14 | 1.030E-14 | 1.016E-14 |
| au | 6.533E-18 | 6.485E-18 | 6.377E-18 | 5.975E-18 | 4.978E-18 | 3.966E-18 | 1.534E-18 | 3.941E-19 | 1.013E-19 | 2.598E-20 | 9.493E-21 | 6.741E-21 | 1.801E-21 | 5.322E-22 |
| hg | 1.446E-15 | 1.404E-15 | 1.313E-15 | 1.012E-15 | 4.883E-16 | 1.970E-16 | 4.437E-18 | 1.954E-20 | 1.798E-22 | 9.475E-23 | 9.427E-23 | 9.423E-23 | 9.408E-23 | 9.394E-23 |
| tl | 5.947E-16 | 5.941E-16 | 5.928E-16 | 5.876E-16 | 5.733E-16 | 5.560E-16 | 4.893E-16 | 4.074E-16 | 3.392E-16 | 2.823E-16 | 2.463E-16 | 2.351E-16 | 1.958E-16 | 1.630E-16 |
| totals | 9.195E-03 | 9.192E-03 | 9.186E-03 | 9.161E-03 | 9.093E-03 | 9.008E-03 | 8.662E-03 | 8.190E-03 | 7.744E-03 | 7.321E-03 | 7.022E-03 | 6.922E-03 | 6.545E-03 | 6.189E-03 |

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5 more years for cooling used fuel material light elements page 8

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 3.092E-07 | 3.091E-07 | 3.089E-07 | 3.080E-07 | 3.057E-07 | 3.029E-07 | 2.912E-07 | 2.753E-07 | 2.602E-07 | 2.460E-07 | 2.359E-07 | 2.325E-07 | 2.198E-07 | 2.078E-07 |
| be 10 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 |
| c 14 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.366E-09 | 8.365E-09 | 8.364E-09 | 8.363E-09 | 8.362E-09 | 8.362E-09 | 8.361E-09 | 8.360E-09 |
| na 22 | 9.841E-23 | 9.826E-23 | 9.794E-23 | 9.670E-23 | 9.331E-23 | 8.925E-23 | 7.410E-23 | 5.679E-23 | 4.352E-23 | 3.333E-23 | 2.733E-23 | 2.554E-23 | 1.957E-23 | 1.500E-23 |
| al 26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 |
| si 32 | 2.506E-24 | 2.506E-24 | 2.506E-24 | 2.506E-24 | 2.504E-24 | 2.502E-24 | 2.494E-24 | 2.483E-24 | 2.472E-24 | 2.461E-24 | 2.452E-24 | 2.449E-24 | 2.438E-24 | 2.427E-24 |
| p 32 | 3.095E-22 | 2.831E-22 | 2.325E-22 | 1.139E-22 | 3.361E-23 | 2.584E-23 | 2.534E-23 | 2.522E-23 | 2.511E-23 | 2.499E-23 | 2.491E-23 | 2.488E-23 | 2.477E-23 | 2.466E-23 |
| p 33 | 2.681E-21 | 2.538E-21 | 2.244E-21 | 1.390E-21 | 3.639E-22 | 6.860E-23 | 6.412E-26 | 2.957E-30 | 1.364E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 6.641E-19 | 6.536E-19 | 6.307E-19 | 5.491E-19 | 3.725E-19 | 2.297E-19 | 3.048E-20 | 1.692E-21 | 9.595E-23 | 5.174E-24 | 6.000E-25 | 2.872E-25 | 1.595E-26 | 8.853E-28 |
| cl 36 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 |
| ar 37 | 4.184E-21 | 4.022E-21 | 3.679E-21 | 2.602E-21 | 9.872E-22 | 2.954E-22 | 1.904E-24 | 1.393E-27 | 1.019E-30 | 7.308E-34 | 3.365E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 8.592E-20 | 8.591E-20 | 8.591E-20 | 8.590E-20 | 8.587E-20 | 8.583E-20 | 8.568E-20 | 8.546E-20 | 8.524E-20 | 8.502E-20 | 8.486E-20 | 8.480E-20 | 8.458E-20 | 8.437E-20 |
| ar 42 | 1.940E-25 | 1.940E-25 | 1.939E-25 | 1.937E-25 | 1.932E-25 | 1.925E-25 | 1.897E-25 | 1.857E-25 | 1.819E-25 | 1.781E-25 | 1.753E-25 | 1.744E-25 | 1.707E-25 | 1.672E-25 |
| k 40 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 | 2.886E-23 |
| k 42 | 1.426E-24 | 1.425E-24 | 1.425E-24 | 1.424E-24 | 1.420E-24 | 1.415E-24 | 1.394E-24 | 1.365E-24 | 1.336E-24 | 1.308E-24 | 1.288E-24 | 1.281E-24 | 1.255E-24 | 1.228E-24 |
| ca 41 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 | 1.303E-24 |
| ca 45 | 1.453E-18 | 1.441E-18 | 1.413E-18 | 1.312E-18 | 1.064E-18 | 8.207E-19 | 2.768E-19 | 5.840E-20 | 1.232E-20 | 2.589E-21 | 8.120E-22 | 5.463E-22 | 1.153E-22 | 2.432E-23 |
| sc 45m | 4.425E-24 | 4.387E-24 | 4.304E-24 | 3.994E-24 | 3.242E-24 | 2.499E-24 | 8.429E-25 | 1.778E-25 | 3.753E-26 | 7.885E-27 | 2.473E-27 | 1.664E-27 | 3.510E-28 | 7.407E-29 |
| sc 46 | 3.625E-16 | 3.566E-16 | 3.436E-16 | 2.973E-16 | 1.982E-16 | 1.197E-16 | 1.451E-17 | 7.087E-19 | 3.460E-20 | 1.676E-21 | 1.766E-22 | 8.182E-23 | 3.995E-24 | 1.951E-25 |
| v 48 | 2.707E-27 | 2.482E-27 | 2.042E-27 | 9.555E-28 | 1.140E-28 | 8.075E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| v 49 | 1.800E-22 | 1.792E-22 | 1.775E-22 | 1.711E-22 | 1.544E-22 | 1.358E-22 | 7.949E-23 | 3.693E-23 | 1.716E-23 | 7.953E-24 | 4.492E-24 | 3.695E-24 | 1.716E-24 | 7.973E-25 |
| cr 51 | 6.923E-20 | 6.585E-20 | 5.884E-20 | 3.798E-20 | 1.114E-20 | 2.422E-21 | 4.102E-24 | 4.430E-28 | 4.785E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 | 3.375E-28 |
| mn 54 | 1.398E-17 | 1.392E-17 | 1.378E-17 | 1.325E-17 | 1.189E-17 | 1.038E-17 | 5.891E-18 | 2.619E-18 | 1.164E-18 | 5.163E-19 | 2.822E-19 | 2.295E-19 | 1.020E-19 | 4.535E-20 |
| fe 55 | 3.075E-19 | 3.071E-19 | 3.061E-19 | 3.024E-19 | 2.924E-19 | 2.803E-19 | 2.350E-19 | 1.825E-19 | 1.418E-19 | 1.101E-19 | 9.122E-20 | 8.554E-20 | 6.646E-20 | 5.163E-20 |
| fe 59 | 8.509E-18 | 8.248E-18 | 7.689E-18 | 5.854E-18 | 2.729E-18 | 1.055E-18 | 1.986E-20 | 6.740E-23 | 2.287E-25 | 7.639E-28 | 1.104E-29 | 2.592E-30 | 8.795E-33 | 0.000E+00 |
| fe 60 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 | 2.405E-26 |
| co 56 | 1.594E-24 | 1.566E-24 | 1.504E-24 | 1.285E-24 | 8.281E-25 | 4.790E-25 | 4.857E-26 | 1.835E-27 | 6.935E-29 | 2.597E-30 | 2.261E-31 | 9.814E-32 | 3.708E-33 | 0.000E+00 |
| co 57 | 1.266E-20 | 1.260E-20 | 1.246E-20 | 1.191E-20 | 1.051E-20 | 8.998E-21 | 4.695E-21 | 1.851E-21 | 7.294E-22 | 2.868E-22 | 1.433E-22 | 1.130E-22 | 4.455E-23 | 1.756E-23 |
| co 58 | 2.017E-18 | 1.978E-18 | 1.893E-18 | 1.595E-18 | 9.877E-19 | 5.439E-19 | 4.489E-20 | 1.263E-21 | 3.556E-23 | 9.911E-25 | 6.927E-26 | 2.789E-26 | 7.850E-28 | 2.209E-29 |
| co 60 | 3.300E-15 | 3.298E-15 | 3.293E-15 | 3.272E-15 | 3.215E-15 | 3.145E-15 | 2.869E-15 | 2.516E-15 | 2.206E-15 | 1.934E-15 | 1.753E-15 | 1.696E-15 | 1.487E-15 | 1.304E-15 |
| co 60m | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 | 3.022E-26 |
| ni 59 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 | 3.937E-21 |
| ni 63 | 2.235E-19 | 2.235E-19 | 2.234E-19 | 2.234E-19 | 2.232E-19 | 2.229E-19 | 2.218E-19 | 2.203E-19 | 2.188E-19 | 2.173E-19 | 2.162E-19 | 2.158E-19 | 2.144E-19 | 2.129E-19 |
| zn 65 | 7.765E-20 | 7.721E-20 | 7.623E-20 | 7.253E-20 | 6.311E-20 | 5.306E-20 | 2.571E-20 | 9.113E-21 | 3.230E-21 | 1.142E-21 | 5.271E-22 | 4.047E-22 | 1.434E-22 | 5.084E-23 |
| sn119m | 1.142E-25 | 1.137E-25 | 1.125E-25 | 1.079E-25 | 9.612E-26 | 8.320E-26 | 4.551E-26 | 1.919E-26 | 8.093E-27 | 3.405E-27 | 1.789E-27 | 1.436E-27 | 6.055E-28 | 2.553E-28 |
| sn121 | 3.873E-24 | 3.873E-24 | 3.872E-24 | 3.869E-24 | 3.861E-24 | 3.851E-24 | 3.809E-24 | 3.749E-24 | 3.690E-24 | 3.632E-24 | 3.590E-24 | 3.575E-24 | 3.519E-24 | 3.464E-24 |
| sn121m | 1.637E-24 | 1.637E-24 | 1.636E-24 | 1.635E-24 | 1.632E-24 | 1.627E-24 | 1.610E-24 | 1.584E-24 | 1.560E-24 | 1.535E-24 | 1.517E-24 | 1.511E-24 | 1.487E-24 | 1.464E-24 |
| sn123 | 9.641E-27 | 9.538E-27 | 9.311E-27 | 8.476E-27 | 6.517E-27 | 4.698E-27 | 1.488E-27 | 4.688E-28 | 1.450E-28 | 4.420E-29 | 2.519E-29 | 1.994E-29 | 7.000E-30 | 0.000E+00 |
| sb124 | 3.477E-22 | 3.398E-22 | 3.226E-22 | 2.637E-22 | 1.500E-22 | 7.432E-23 | 3.944E-24 | 5.899E-26 | 8.822E-28 | 1.304E-29 | 5.691E-31 | 1.951E-31 | 2.917E-33 | 0.000E+00 |
| sb125 | 1.089E-23 | 1.088E-23 | 1.085E-23 | 1.072E-23 | 1.036E-23 | 9.935E-24 | 8.337E-24 | 6.485E-24 | 5.045E-24 | 3.922E-24 | 3.253E-24 | 3.051E-24 | 2.374E-24 | 1.847E-24 |
| te121 | 1.220E-24 | 1.209E-24 | 1.186E-24 | 1.102E-24 | 8.955E-25 | 6.921E-25 | 2.359E-25 | 5.053E-26 | 1.082E-26 | 2.309E-27 | 7.324E-28 | 4.945E-28 | 9.172E-34 | 0.000E+00 |
| te121m | 6.105E-25 | 6.054E-25 | 5.940E-25 | 5.517E-25 | 4.486E-25 | 3.468E-25 | 1.182E-25 | 2.532E-26 | 5.423E-27 | 1.157E-27 | 3.669E-28 | 2.478E-28 | 5.308E-29 | 1.137E-29 |
| te123m | 2.517E-20 | 2.488E-20 | 2.424E-20 | 2.189E-20 | 1.646E-20 | 1.155E-20 | 2.621E-21 | 3.139E-22 | 3.758E-23 | 4.473E-24 | 9.198E-25 | 5.356E-25 | 6.413E-26 | 7.678E-27 |
| te125m | 4.744E-20 | 4.631E-20 | 4.386E-20 | 3.551E-20 | 1.965E-20 | 9.407E-21 | 4.331E-22 | 5.703E-24 | 4.010E-25 | 2.626E-25 | 2.172E-25 | 2.037E-25 | 1.585E-25 | 1.233E-25 |
| te127 | 1.793E-22 | 1.771E-22 | 1.721E-22 | 1.539E-22 | 1.127E-22 | 7.649E-23 | 1.511E-23 | 1.483E-24 | 1.450E-25 | 1.420E-26 | 2.519E-27 | 1.394E-27 | 0.000E+00 | 0.000E+00 |
| te127m | 7.355E-23 | 7.262E-23 | 7.058E-23 | 6.314E-23 | 4.624E-23 | 3.137E-23 | 6.198E-24 | 6.085E-25 | 5.973E-26 | 5.826E-27 | 1.033E-27 | 5.719E-28 | 5.614E-29 | 5.511E-30 |
| te129 | 1.947E-26 | 1.868E-26 | 1.702E-26 | 1.187E-26 | 4.318E-27 | 1.227E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 1.566E-26 | 1.503E-26 | 1.370E-26 | 9.546E-27 | 3.474E-27 | 9.870E-28 | 5.125E-30 | 2.751E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 4.339E-23 | 4.239E-23 | 4.022E-23 | 3.279E-23 | 1.851E-23 | 9.085E-24 | 4.635E-25 | 6.550E-27 | 9.257E-29 | 1.293E-30 | 5.409E-32 | 1.827E-32 | 2.583E-34 | 0.000E+00 |
| i126 | 1.328E-26 | 1.193E-26 | 9.373E-27 | 3.668E-27 | 2.652E-28 | 1.008E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 1.441E-22 | 1.387E-22 | 1.273E-22 | 9.121E-23 | 3.588E-23 | 1.123E-23 | 8.739E-26 | 8.373E-29 | 8.022E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 9

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 1.291E-24 | 1.149E-24 | 8.825E-25 | 3.168E-25 | 1.799E-26 | 5.059E-28 | 1.662E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 5.015E-22 | 4.452E-22 | 3.404E-22 | 1.197E-22 | 6.364E-24 | 1.631E-25 | 1.948E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.680E-28 | 1.357E-28 | 8.383E-29 | 1.289E-29 | 6.825E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs134 | 7.226E-19 | 7.213E-19 | 7.183E-19 | 7.069E-19 | 6.758E-19 | 6.389E-19 | 5.055E-19 | 3.614E-19 | 2.584E-19 | 1.846E-19 | 1.438E-19 | 1.320E-19 | 9.439E-20 | 6.750E-20 |
| cs135 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 | 2.445E-27 |
| cs136 | 1.605E-26 | 1.445E-26 | 1.140E-26 | 4.535E-27 | 3.433E-28 | 1.381E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 7.079E-27 | 7.078E-27 | 7.076E-27 | 7.068E-27 | 7.047E-27 | 7.020E-27 | 6.908E-27 | 6.750E-27 | 6.597E-27 | 6.446E-27 | 6.336E-27 | 6.299E-27 | 6.156E-27 | 6.016E-27 |
| ba131 | 1.512E-21 | 1.340E-21 | 1.022E-21 | 3.559E-22 | 1.856E-23 | 4.697E-25 | 9.926E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 5.337E-20 | 5.335E-20 | 5.331E-20 | 5.314E-20 | 5.267E-20 | 5.209E-20 | 4.975E-20 | 4.658E-20 | 4.361E-20 | 4.082E-20 | 3.887E-20 | 3.822E-20 | 3.578E-20 | 3.350E-20 |
| ba137m | 2.471E-26 | 2.471E-26 | 2.470E-26 | 2.467E-26 | 2.460E-26 | 2.450E-26 | 2.411E-26 | 2.356E-26 | 2.302E-26 | 2.250E-26 | 2.212E-26 | 2.199E-26 | 2.149E-26 | 2.100E-26 |
| la137 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 |
| la138 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 | 6.208E-27 |
| ce139 | 1.437E-22 | 1.423E-22 | 1.391E-22 | 1.273E-22 | 9.950E-23 | 7.318E-23 | 2.026E-23 | 3.224E-24 | 5.130E-25 | 8.121E-26 | 2.064E-26 | 1.292E-26 | 2.056E-27 | 3.272E-28 |
| ce141 | 5.933E-25 | 5.686E-25 | 5.165E-25 | 3.557E-25 | 1.251E-25 | 3.407E-26 | 1.483E-28 | 6.181E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 1.706E-27 | 1.688E-27 | 1.647E-27 | 1.499E-27 | 1.151E-27 | 8.285E-28 | 2.096E-28 | 2.931E-29 | 4.098E-30 | 5.700E-31 | 1.316E-31 | 7.970E-32 | 1.114E-32 | 1.558E-33 |
| tm171 | 4.596E-25 | 4.587E-25 | 4.567E-25 | 4.488E-25 | 4.276E-25 | 4.026E-25 | 3.129E-25 | 2.181E-25 | 1.521E-25 | 1.059E-25 | 8.094E-26 | 7.383E-26 | 5.147E-26 | 3.588E-26 |
| lu172 | 2.775E-23 | 2.774E-23 | 2.770E-23 | 2.733E-23 | 2.602E-23 | 2.446E-23 | 1.870E-23 | 1.291E-23 | 8.914E-24 | 6.149E-24 | 4.665E-24 | 4.246E-24 | 2.931E-24 | 2.024E-24 |
| lu172m | 4.778E-25 | 4.768E-25 | 4.747E-25 | 4.663E-25 | 4.437E-25 | 4.170E-25 | 3.230E-25 | 2.223E-25 | 1.535E-25 | 1.059E-25 | 8.032E-26 | 7.309E-26 | 5.046E-26 | 3.484E-26 |
| lu173 | 9.152E-20 | 9.126E-20 | 9.070E-20 | 8.852E-20 | 8.271E-20 | 7.601E-20 | 5.339E-20 | 3.220E-20 | 1.942E-20 | 1.170E-20 | 8.026E-21 | 7.056E-21 | 4.255E-21 | 2.567E-21 |
| lu174 | 1.046E-19 | 1.046E-19 | 1.044E-19 | 1.036E-19 | 1.014E-19 | 9.851E-20 | 8.630E-20 | 7.038E-20 | 5.716E-20 | 4.635E-20 | 3.966E-20 | 3.760E-20 | 3.050E-20 | 2.474E-20 |
| lu174m | 3.160E-20 | 3.129E-20 | 3.061E-20 | 2.810E-20 | 2.212E-20 | 1.643E-20 | 4.731E-21 | 7.965E-22 | 1.341E-22 | 2.247E-23 | 5.955E-24 | 3.782E-24 | 6.367E-25 | 1.072E-25 |
| lu176 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 | 2.280E-26 |
| lu177 | 1.234E-19 | 1.223E-19 | 1.199E-19 | 1.112E-19 | 8.999E-20 | 6.914E-20 | 2.298E-20 | 4.747E-21 | 9.809E-22 | 2.018E-22 | 6.231E-23 | 4.169E-23 | 8.614E-24 | 1.780E-24 |
| lu177m | 7.546E-19 | 7.482E-19 | 7.337E-19 | 6.803E-19 | 5.505E-19 | 4.230E-19 | 1.406E-19 | 2.904E-20 | 6.000E-21 | 1.234E-21 | 3.811E-22 | 2.550E-22 | 5.269E-23 | 1.089E-23 |
| hf172 | 2.485E-24 | 2.480E-24 | 2.469E-24 | 2.425E-24 | 2.308E-24 | 2.169E-24 | 1.626E-24 | 1.156E-24 | 7.982E-25 | 5.506E-25 | 4.178E-25 | 3.801E-25 | 2.625E-25 | 1.812E-25 |
| hf175 | 4.060E-16 | 3.980E-16 | 3.807E-16 | 3.201E-16 | 1.970E-16 | 1.077E-16 | 8.622E-18 | 3.323E-19 | 6.256E-21 | 1.568E-22 | 1.129E-23 | 4.494E-24 | 1.211E-25 | 3.261E-27 |
| hf177m | 3.638E-18 | 3.607E-18 | 3.538E-18 | 3.280E-18 | 2.654E-18 | 2.039E-18 | 6.777E-19 | 1.400E-19 | 2.893E-20 | 5.951E-21 | 1.838E-21 | 1.230E-21 | 2.540E-22 | 5.249E-23 |
| hf181 | 4.520E-17 | 4.375E-17 | 4.064E-17 | 3.053E-17 | 1.370E-17 | 5.053E-18 | 7.810E-20 | 1.998E-22 | 5.112E-25 | 1.287E-27 | 1.506E-29 | 3.291E-30 | 8.420E-33 | 0.000E+00 |
| hf182 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 | 8.985E-24 |
| ta179 | 8.262E-23 | 8.244E-23 | 8.206E-23 | 8.058E-23 | 7.656E-23 | 7.184E-23 | 5.507E-23 | 3.764E-23 | 2.572E-23 | 1.756E-23 | 1.323E-23 | 1.200E-23 | 8.203E-24 | 5.606E-24 |
| ta182 | 5.662E-16 | 5.594E-16 | 5.444E-16 | 4.898E-16 | 3.643E-16 | 2.520E-16 | 5.400E-17 | 5.954E-18 | 6.565E-19 | 7.198E-20 | 1.395E-20 | 7.976E-21 | 9.193E-22 | 1.413E-22 |
| w181 | 1.825E-20 | 1.805E-20 | 1.759E-20 | 1.591E-20 | 1.202E-20 | 8.483E-21 | 1.973E-21 | 2.447E-22 | 3.034E-23 | 3.741E-24 | 7.896E-25 | 4.639E-25 | 5.752E-26 | 7.133E-27 |
| w185 | 1.711E-17 | 1.680E-17 | 1.611E-17 | 1.379E-17 | 8.722E-18 | 4.967E-18 | 4.720E-19 | 1.525E-20 | 5.595E-22 | 1.909E-23 | 1.550E-24 | 6.572E-25 | 2.263E-26 | 7.790E-28 |
| w188 | 2.068E-19 | 2.028E-19 | 1.939E-19 | 1.630E-19 | 1.002E-19 | 5.465E-20 | 4.340E-21 | 1.156E-22 | 3.078E-24 | 8.116E-26 | 5.444E-27 | 2.161E-27 | 5.756E-29 | 1.533E-30 |
| re183 | 1.631E-23 | 1.599E-23 | 1.529E-23 | 1.286E-23 | 7.915E-24 | 4.326E-24 | 3.463E-25 | 9.329E-27 | 2.513E-28 | 6.702E-30 | 4.534E-31 | 1.805E-31 | 4.863E-33 | 1.310E-34 |
| re184 | 8.217E-21 | 8.125E-21 | 7.924E-21 | 7.213E-21 | 5.674E-21 | 4.324E-21 | 1.498E-21 | 3.364E-22 | 7.529E-23 | 1.678E-23 | 5.480E-24 | 3.742E-24 | 8.404E-25 | 1.881E-25 |
| re184m | 4.265E-21 | 4.230E-21 | 4.153E-21 | 3.865E-21 | 3.161E-21 | 2.462E-21 | 8.650E-22 | 1.936E-22 | 4.332E-23 | 9.655E-24 | 3.164E-24 | 2.161E-24 | 4.835E-25 | 1.082E-25 |
| re186 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 | 5.600E-23 |
| re186m | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 | 2.241E-23 |
| re187 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 | 8.462E-28 |
| re188 | 1.727E-18 | 1.693E-18 

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| au195 | 5.183E-21 | 5.145E-21 | 5.059E-21 | 4.740E-21 | 3.949E-21 | 3.147E-21 | 1.217E-21 | 3.126E-22 | 8.027E-23 | 2.054E-23 | 7.456E-24 | 5.273E-24 | 1.354E-24 | 3.477E-25 |
| hg194 | 5.378E-27 | 5.378E-27 | 5.378E-27 | 5.378E-27 | 5.377E-27 | 5.375E-27 | 5.369E-27 | 5.361E-27 | 5.353E-27 | 5.344E-27 | 5.338E-27 | 5.336E-27 | 5.328E-27 | 5.319E-27 |
| hg203 | 2.989E-18 | 2.901E-18 | 2.713E-18 | 2.091E-18 | 1.009E-18 | 4.072E-19 | 9.168E-21 | 4.019E-23 | 1.762E-25 | 7.608E-28 | 1.330E-29 | 3.335E-30 | 1.462E-32 | 0.000E+00 |
| tl202 | 1.127E-26 | 1.007E-26 | 7.814E-27 | 2.917E-27 | 1.849E-28 | 6.051E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 9.455E-32 | 0.000E+00 | 0.000E+00 |
| tl204 | 8.405E-19 | 8.397E-19 | 8.378E-19 | 8.305E-19 | 8.103E-19 | 7.859E-19 | 6.915E-19 | 5.758E-19 | 4.795E-19 | 3.991E-19 | 3.482E-19 | 3.323E-19 | 2.767E-19 | 2.304E-19 |
| total | 3.176E-07 | 3.175E-07 | 3.173E-07 | 3.165E-07 | 3.141E-07 | 3.113E-07 | 2.996E-07 | 2.837E-07 | 2.686E-07 | 2.544E-07 | 2.443E-07 | 2.409E-07 | 2.282E-07 | 2.162E-07 |

1

5 more years for cooling used fuel material light elements page 11

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 3.092E-07 | 3.091E-07 | 3.089E-07 | 3.080E-07 | 3.057E-07 | 3.029E-07 | 2.912E-07 | 2.753E-07 | 2.602E-07 | 2.460E-07 | 2.359E-07 | 2.325E-07 | 2.198E-07 | 2.078E-07 |
| be | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 | 6.120E-11 |
| c | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.367E-09 | 8.366E-09 | 8.365E-09 | 8.364E-09 | 8.363E-09 | 8.362E-09 | 8.362E-09 | 8.361E-09 | 8.360E-09 |
| na | 9.841E-23 | 9.826E-23 | 9.794E-23 | 9.670E-23 | 9.331E-23 | 8.925E-23 | 7.410E-23 | 5.679E-23 | 4.352E-23 | 3.333E-23 | 2.733E-23 | 2.554E-23 | 1.957E-23 | 1.500E-23 |
| al | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 | 1.167E-26 |
| si | 2.506E-24 | 2.506E-24 | 2.506E-24 | 2.506E-24 | 2.504E-24 | 2.502E-24 | 2.494E-24 | 2.483E-24 | 2.472E-24 | 2.461E-24 | 2.452E-24 | 2.449E-24 | 2.438E-24 | 2.427E-24 |
| p | 2.990E-21 | 2.821E-21 | 2.476E-21 | 1.504E-21 | 3.975E-22 | 9.444E-23 | 2.540E-23 | 2.522E-23 | 2.511E-23 | 2.499E-23 | 2.491E-23 | 2.488E-23 | 2.477E-23 | 2.466E-23 |
| s | 6.641E-19 | 6.536E-19 | 6.307E-19 | 5.491E-19 | 3.725E-19 | 2.297E-19 | 3.048E-20 | 1.692E-21 | 9.395E-23 | 5.174E-24 | 6.000E-25 | 2.872E-25 | 1.595E-26 | 8.853E-28 |
| cl | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 | 3.951E-21 |
| ar | 9.010E-20 | 8.994E-20 | 8.959E-20 | 8.850E-20 | 8.686E-20 | 8.613E-20 | 8.568E-20 | 8.546E-20 | 8.524E-20 | 8.502E-20 | 8.486E-20 | 8.480E-20 | 8.458E-20 | 8.437E-20 |
| k | 3.029E-23 | 3.029E-23 | 3.029E-23 | 3.029E-23 | 3.028E-23 | 3.028E-23 | 3.026E-23 | 3.023E-23 | 3.020E-23 | 3.017E-23 | 3.015E-23 | 3.015E-23 | 3.012E-23 | 3.009E-23 |
| ca | 1.453E-18 | 1.441E-18 | 1.413E-18 | 1.312E-18 | 1.064E-18 | 8.207E-19 | 2.768E-19 | 5.840E-20 | 1.232E-20 | 2.590E-21 | 8.133E-22 | 5.476E-22 | 1.166E-22 | 2.562E-23 |
| sc | 3.625E-16 | 3.566E-16 | 3.436E-16 | 2.973E-16 | 1.982E-16 | 1.197E-16 | 2.451E-17 | 3.460E-18 | 4.922E-19 | 1.766E-22 | 8.182E-23 | 3.995E-24 | 1.951E-25 | 9.527E-27 |
| v | 1.800E-22 | 1.792E-22 | 1.775E-22 | 1.711E-22 | 1.544E-22 | 1.358E-22 | 7.949E-23 | 3.693E-23 | 1.716E-23 | 7.953E-24 | 4.492E-24 | 3.695E-24 | 1.716E-24 | 7.973E-25 |
| cr | 6.923E-20 | 6.585E-20 | 5.884E-20 | 3.798E-20 | 1.114E-20 | 2.422E-21 | 4.102E-24 | 4.430E-28 | 4.785E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 1.398E-17 | 1.392E-17 | 1.378E-17 | 1.325E-17 | 1.189E-17 | 1.038E-17 | 5.891E-18 | 2.619E-18 | 1.164E-18 | 5.163E-19 | 2.822E-19 | 2.295E-19 | 1.020E-19 | 4.535E-20 |
| fe | 8.816E-18 | 8.555E-18 | 7.995E-18 | 6.157E-18 | 3.021E-18 | 1.335E-18 | 2.548E-19 | 1.826E-19 | 1.418E-19 | 1.101E-19 | 9.122E-20 | 8.554E-20 | 6.646E-20 | 5.163E-20 |
| co | 3.303E-15 | 3.300E-15 | 3.295E-15 | 3.274E-15 | 3.216E-15 | 3.146E-15 | 2.869E-15 | 2.516E-15 | 2.206E-15 | 1.934E-15 | 1.753E-15 | 1.696E-15 | 1.487E-15 | 1.304E-15 |
| ni | 2.274E-19 | 2.274E-19 | 2.274E-19 | 2.273E-19 | 2.271E-19 | 2.268E-19 | 2.258E-19 | 2.243E-19 | 2.228E-19 | 2.213E-19 | 2.202E-19 | 2.198E-19 | 2.183E-19 | 2.169E-19 |
| zn | 7.765E-20 | 7.721E-20 | 7.623E-20 | 7.253E-20 | 6.311E-20 | 5.360E-20 | 2.571E-20 | 9.113E-21 | 3.230E-21 | 1.142E-21 | 5.271E-22 | 4.047E-22 | 1.434E-22 | 5.084E-23 |
| sn | 5.634E-24 | 5.633E-24 | 5.630E-24 | 5.621E-24 | 5.595E-24 | 5.566E-24 | 5.462E-24 | 5.353E-24 | 5.258E-24 | 5.171E-24 | 5.109E-24 | 5.088E-24 | 5.007E-24 | 4.929E-24 |
| sb | 3.586E-22 | 3.506E-22 | 3.334E-22 | 2.744E-22 | 1.604E-22 | 8.425E-23 | 1.228E-23 | 6.544E-24 | 5.046E-24 | 3.922E-24 | 3.253E-24 | 3.051E-24 | 2.374E-24 | 1.847E-24 |
| te | 7.287E-20 | 7.144E-20 | 6.834E-20 | 5.762E-20 | 3.627E-20 | 2.106E-20 | 3.076E-21 | 3.217E-22 | 3.820E-23 | 4.759E-24 | 1.142E-24 | 7.420E-25 | 2.227E-25 | 1.310E-25 |
| i | 4.341E-23 | 4.240E-23 | 4.023E-23 | 3.280E-23 | 1.851E-23 | 9.085E-24 | 4.635E-25 | 6.551E-27 | 9.356E-29 | 2.284E-30 | 1.045E-30 | 1.009E-30 | 9.911E-31 | 9.908E-31 |
| xe | 1.453E-22 | 1.398E-22 | 1.282E-22 | 9.153E-23 | 3.589E-23 | 1.123E-23 | 8.739E-26 | 8.373E-29 | 8.022E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 7.231E-19 | 7.218E-19 | 7.187E-19 | 7.070E-19 | 6.758E-19 | 6.389E-19 | 5.055E-19 | 3.614E-19 | 2.584E-19 | 1.846E-19 | 1.438E-19 | 1.320E-19 | 9.439E-20 | 6.750E-20 |
| ba | 5.488E-20 | 5.469E-20 | 5.433E-20 | 5.349E-20 | 5.269E-20 | 5.210E-20 | 4.975E-20 | 4.638E-20 | 4.361E-20 | 4.082E-20 | 3.887E-20 | 3.822E-20 | 3.578E-20 | 3.350E-20 |
| la | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 | 2.440E-21 |
| ce | 1.443E-22 | 1.428E-22 | 1.396E-22 | 1.277E-22 | 9.962E-23 | 7.321E-23 | 2.026E-23 | 3.224E-24 | 5.130E-25 | 8.121E-26 | 2.064E-26 | 1.292E-26 | 2.056E-27 | 3.272E-28 |
| tm | 4.613E-25 | 4.604E-25 | 4.583E-25 | 4.503E-25 | 4.288E-25 | 4.034E-25 | 3.131E-25 | 2.182E-25 | 1.521E-25 | 1.059E-25 | 8.094E-26 | 7.383E-26 | 5.147E-26 | 3.588E-26 |
| lu | 1.106E-18 | 1.098E-18 | 1.079E-18 | 1.012E-18 | 8.468E-19 | 6.831E-19 | 3.080E-19 | 1.372E-19 | 8.370E-20 | 5.951E-20 | 4.814E-20 | 4.496E-20 | 3.482E-20 | 2.732E-20 |
| hf | 4.548E-16 | 4.454E-16 | 4.249E-16 | 3.539E-16 | 2.134E-16 | 1.148E-16 | 9.378E-18 | 3.725E-19 | 3.520E-20 | 6.128E-21 | 1.858E-21 | 1.243E-21 | 2.634E-22 | 6.166E-23 |
| ta | 5.662E-16 | 5.594E-16 | 5.444E-16 | 4.898E-16 | 3.643E-16 | 2.520E-16 | 5.400E-17 | 5.954E-18 | 6.565E-19 | 7.200E-20 | 1.397E-20 | 7.988E-21 | 9.275E-22 | 1.469E-22 |
| w | 1.733E-17 | 1.702E-17 | 1.632E-17 | 1.389E-17 | 8.834E-18 | 5.030E-18 | 4.783E-19 | 1.661E-20 | 5.929E-22 | 2.291E-23 | 2.345E-24 | 1.123E-24 | 8.020E-26 | 7.913E-27 |
| re | 1.740E-18 | 1.706E-18 | 1.631E-18 | 1.372E-18 | 8.453E-19 | 4.632E-19 | 3.868E-20 | 1.574E-21 | 2.227E-22 | 1.055E-22 | 8.717E-23 | 8.433E-23 | 7.973E-23 | 7.870E-23 |
| os | 1.157E-19 | 1.140E-19 | 1.103E-19 | 9.686E-20 | 6.739E-20 | 4.290E-20 | 6.497E-21 | 4.418E-22 | 3.539E-23 | 7.507E-24 | 5.369E-24 | 5.092E-24 | 4.430E-24 | 3.940E-24 |
| ir | 1.041E-16 | 1.022E-16 | 9.797E-17 | 8.312E-17 | 5.247E-17 | 2.959E-17 | 2.700E-18 | 8.786E-20 | 2.967E-21 | 1.965E-22 | 1.033E-22 | 9.633E-23 | 8.327E-23 | 7.410E-23 |
| pt | 5.886E-19 | 5.885E-19 | 5.884E-19 | 5.880E-19 | 5.869E-19 | 5.856E-19 | 5.799E-19 | 5.720E-19 | 5.641E-19 | 5.563E-19 | 5.506E-19 | 5.487E-19 | 5.411E-19 | 5.337E-19 |
| au | 5.184E-21 | 5.145E-21 | 5.060E-21 | 4.741E-21 | 3.950E-21 | 3.147E-21 | 1.218E-21 | 3.132E-22 | 8.088E-23 | 2.115E-23 | 8.069E-24 | 5.886E-24 | 1.966E-24 | 9.581E-25 |
| hg | 2.989E-18 | 2.901E-18 | 2.713E-18 | 2.091E-18 | 1.009E-18 | 4.072E-19 | 9.168E-21 | 4.019E-23 | 1.815E-25 | 6.105E-27 | 5.351E-27 | 5.339E-27 | 5.328E-27 | 5.319E-27 |
| tl | 8.405E-19 | 8.397E-19 | 8.378E-19 | 8.305E-19 | 8.103E-19 | 7.859E-19 | 6.915E-19 | 5.758E-19 | 4.795E-19 | 3.991E-19 | 3.482E-19 | 3.323E-19 | 2.767E-19 | 2.304E-19 |
| totals | 3.176E-07 | 3.175E-07 | 3.173E-07 | 3.165E-07 | 3.141E-07 | 3.113E-07 | 2.996E-07 | 2.837E-07 | 2.686E-07 | 2.544E-07 | 2.443E-07 | 2.409E-07 | 2.282E-07 | 2.162E-07 |

1

5 more years for cooling used fuel material actinides page 12

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he 4 | 3.527E-02 | 3.532E-02 | 3.544E-02 | 3.590E-02 | 3.706E-02 | 3.829E-02 | 4.191E-02 | 4.526E-02 | 4.804E-02 | 5.070E-02 | 5.265E-02 | 5.331E-02 | 5.592E-02 | 5.851E-02 |
| li 6 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 | 3.472E-17 |
| li 7 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 |
| tl207 | 3.534E-18 | 3.533E-18 | 3.538E-18 | 3.605E-18 | 3.927E-18 | 4.363E-18 | 6.515E-18 | 9.140E-18 | 1.177E-17 | 1.440E-17 | 1.637E-17 | 1.671E-17 | 1.966E-17 | 2.230E-17 |
| tl208 | 5.475E-14 | 5.498E-14 | 5.510E-14 | 5.729E-14 | 6.559E-14 | 7.502E-14 | 1.175E-13 | 1.822E-13 | 2.453E-13 | 3.032E-13 | 3.418E-13 | 3.543E-13 | 3.967E-13 | 4.323E-13 |
| pb204 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 | 5.558E-15 |
| pb205 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.158E-17 | 2.159E-17 | 2.159E-17 | 2.159E-17 | 2.159E-17 |
| pb206 | 2.918E-14 | 2.930E-14 | 2.956E-14 | 3.058E-14 | 3.351E-14 | 3.731E-14 | 5.372E-14 | 7.755E-14 | 1.013E-13 | 1.252E-13 | 1.432E-13 | 1.494E-13 | 1.743E-13 | 2.003E-13 |
| pb207 | 1.064E-12 | 1.066E-12 | 1.069E-12 | 1.082E-12 | 1.121E-12 | 1.174E-12 | 1.463E-12 | 2.050E-12 | 2.839E-12 | 3.832E-12 | 4.701E-12 | 5.023E-12 | 6.414E-12 | 8.008E-12 |
| pb208 | 1.448E-08 | 1.458E-08 | 1.481E-08 | 1.574E-08 | 1.847E-08 | 2.233E-08 | 3.466E-08 | 5.402E-08 | 7.580E-08 | 1.563E-07 | 3.360E-07 | 4.654E-07 | 4.900E-07 | 6.277E-07 |
| pb209 | 2.833E-16 | 2.834E-16 | 2.833E-16 | 2.830E-16 | 2.829E-16 | 2.831E-16 | 2.843E-16 | 2.859E-16 | 2.877E-16 | 2.897E-16 | 2.913E-16 | 2.917E-16 | 2.943E-16 | 2.969E-16 |
| pb210 | 7.987E-13 | 7.986E-13 | 7.984E-13 | 7.976E-13 | 7.954E-13 | 7.929E-13 | 7.837E-13 | 7.762E-13 | 7.770E-13 | 7.879E-13 | 8.039E-13 | 8.111E-13 | 8.487E-13 | 9.031E-13 |
| pb211 | 2.734E-17 | 2.733E-17 | 2.737E-17 | 2.789E-17 | 3.038E-17 | 3.375E-17 | 5.040E-17 | 7.070E-17 | 9.103E-17 | 1.114E-16 | 1.266E-16 | 1.293E-16 | 1.521E-16 | 1.725E-16 |
| pb212 | 3.247E-11 | 3.245E-11 | 3.267E-11 | 3.397E-11 | 3.890E-11 | 4.449E-11 | 6.968E-11 | 1.080E-10 | 1.455E-10 | 1.798E-10 | 2.027E-10 | 2.101E-10 | 2.353E-10 | 2.564E-10 |
| bi208 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 | 2.296E-17 |
| bi209 | 2.040E-12 | 2.043E-12 | 2.050E-12 | 2.075E-12 | 2.146E-12 | 2.235E-12 | 2.605E-12 | 3.137E-12 | 3.672E-12 | 4.212E-12 | 4.616E-12 | 4.755E-12 | 5.302E-12 | 5.854E-12 |
| bi210m | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 | 3.282E-17 |
| bi210 | 4.940E-16 | 4.939E-16 | 4.937E-16 | 4.932E-16 | 4.919E-16 | 4.905E-16 | 4.847E-16 | 4.801E-16 | 4.806E-16 | 4.873E-16 | 4.972E-16 | 5.016E-16 | 5.249E-16 | 5.585E-16 |
| bi211 | 1.621E-18 | 1.620E-18 | 1.622E-18 | 1.653E-18 | 1.801E-18 | 2.001E-18 | 2.988E-18 | 4.191E-18 | 5.396E-18 | 6.605E-18 | 7.505E-18 | 7.662E-18 | 9.018E-18 | 1.022E-17 |
| bi212 | 3.080E-12 | 3.092E-12 | 3.099E-12 | 3.222E-12 | 3.689E-12 | 4.220E-12 | 6.610E-12 | 1.025E-11 | 1.380E-11 | 1.705E-11 | 1.922E-11 | 1.993E-11 | 2.231E-11 | 2.432E-11 |
| bi213 | 6.744E-17 | 6.745E-17 | 6.743E-17 | 6.737E-17 | 6.735E-17 | 6.740E-17 | 6.767E-17 | 6.805E-17 | 6.848E-17 | 6.896E-17 | 6.935E-17 | 6.944E-17 | 7.006E-17 | 7.069E-17 |
| po210 | 1.178E-14 | 1.180E-14 | 1.184E-14 | 1.199E-14 | 1.234E-14 | 1.261E-14 | 1.307E-14 | 1.311E-14 | 1.309E-14 | 1.318E-14 | 1.336E-14 | 1.345E-14 | 1.396E-14 | 1.473E-14 |
| po216 | 1.252E-16 | 1.252E-16 | 1.259E-16 | 1.310E-16 | 1.500E-16 | 1.716E-16 | 2.688E-16 | 4.167E-16 | 5.611E-16 | 6.935E-16 | 7.816E-16 | 8.103E-16 | 9.073E-16 | 9.888E-16 |
| rn220 | 4.891E-14 | 4.891E-14 | 4.916E-14 | 5.117E-14 | 5.859E-14 | 6.701E-14 | 1.050E-13 | 1.628E-13 | 2.192E-13 | 2.708E-13 | 3.053E-13 | 3.315E-13 | 3.544E-13 | 3.862E-13 |
| rn222 | 1.268E-16 | 1.269E-16 | 1.273E-16 | 1.304E-16 | 1.413E-16 | 1.541E-16 | 2.160E-16 | 3.297E-16 | 4.765E-16 | 6.606E-16 | 8.238E-16 | 8.851E-16 | 1.154E-15 | 1.471E-15 |
| fr221 | 7.522E-18 | 7.522E-18 | 7.520E-18 | 7.513E-18 | 7.511E-18 | 7.517E-18 | 7.547E-18 | 7.589E-18 | 7.637E-18 | 7.691E-18 | 7.734E-18 | 7.744E-18 | 7.814E-18 | 7.883E-18 |
| ra223 | 1.317E-14 | 1.317E-14 | 1.319E-14 | 1.344E-14 | 1.464E-14 | 1.626E-14 | 2.428E-14 | 3.407E-14 | 4.386E-14 | 5.369E-14 | 6.101E-14 | 6.228E-14 | 7.330E-14 | 8.311E-14 |
| ra224 | 2.832E-10 | 2.832E-10 | 2.847E-10 | 2.963E-10 | 3.393E-10 | 3.881E-10 | 6.078E-10 | 9.425E-10 | 1.269E-09 | 1.568E-09 | 1.768E-09 | 1.833E-09 | 2.052E-09 | 2.236E-09 |
| ra225 | 3.349E-14 | 3.349E-14 | 3.348E-14 | 3.348E-14 | 3.349E-14 | 3.351E-14 | 3.364E-14 | 3.383E-14 | 3.405E-14 | 3.429E-14 | 3.448E-14 | 3.453E-14 | 3.483E-14 | 3.514E-14 |
| ra226 | 1.973E-11 | 1.979E-11 | 1.992E-11 | 2.045E-11 | 2.198E-11 | 2.398E-11 | 3.361E-11 | 5.131E-11 | 7.414E-11 | 1.028E-10 | 1.282E-10 | 1.377E-10 | 1.796E-10 | 2.289E-10 |
| ra228 | 6.439E-16 | 6.445E-16 | 6.457E-16 | 6.506E-16 | 6.642E-16 | 6.809E-16 | 7.493E-16 | 8.434E-16 | 9.333E-16 | 1.020E-15 | 1.082E-15 | 1.103E-15 | 1.183E-15 | 1.261E-15 |
| ac225 | 2.250E-14 | 2.250E-14 | 2.249E-14 | 2.248E-14 | 2.247E-14 | 2.249E-14 | 2.258E-14 | 2.271E-14 | 2.285E-14 | 2.301E-14 | 2.317E-14 | 2.338E-14 | 2.359E-14 | 2.379E-14 |
| ac227 | 9.795E-12 | 9.833E-12 | 9.918E-12 | 1.025E-11 | 1.118E-11 | 1.233E-11 | 1.717E-11 | 2.409E-11 | 3.101E-11 | 3.795E-11 | 4.311E-11 | 4.488E-11 | 5.181E-11 | 5.874E-11 |
| th227 | 2.152E-14 | 2.161E-14 | 2.180E-14 | 2.257E-14 | 2.471E-14 | 2.739E-14 | 3.984E-14 | 5.589E-14 | 7.197E-14 | 8.809E-14 | 1.001E-13 | 1.028E-13 | 1.203E-13 | 1.364E-13 |
| th228 | 5.485E-08 | 5.514E-08 | 5.578E-08 | 5.831E-08 | 6.559E-08 | 7.504E-08 | 1.177E-07 | 1.826E-07 | 2.458E-07 | 3.037E-07 | 3.421E-07 | 3.543E-07 | 3.972E-07 | 4.329E-07 |
| th229 | 6.128E-09 | 6.129E-09 | 6.129E-09 | 6.130E-09 | 6.134E-09 | 6.139E-09 | 6.161E-09 | 6.195E-09 | 6.235E-09 | 6.279E-09 | 6.314E-09 | 6.326E-09 | 6.379E-09 | 6.435E-09 |
| th230 | 1.201E-06 | 1.203E-06 | 1.209E-06 | 1.230E-06 | 1.289E-06 | 1.364E-06 | 1.699E-06 | 2.235E-06 | 2.839E-06 | 3.511E-06 | 4.053E-06 | 4.247E-06 | 5.050E-06 | 5.918E-06 |
| th231 | 4.474E-11 | 4.474E-11 | 4.474E-11 | 4.474E-11 | 4.474E-11 | 4.474E-11 | 4.475E-11 | 4.477E-11 | 4.479E-11 | 4.481E-11 | 4.482E-11 | 4.483E-11 | 4.484E-11 | 4.486E-11 |
| th232 | 3.698E-06 | 3.698E-06 | 3.701E-06 | 3.708E-06 | 3.727E-06 | 3.751E-06 | 3.853E-06 | 3.994E-06 | 4.138E-06 | 4.282E-06 | 4.389E-06 | 4.426E-06 | 4.570E-06 | 4.715E-06 |
| th234 | 2.061E-07 | 2.061E-07 | 2.061E-07 | 2.061E-07 | 2.061E-07 | 2.061E-07 | 2.062E-07 | 2.061E-07 | 2.061E-07 | 2.061E-07 | 2.062E-07 | 2.061E-07 | 2.061E-07 | 2.061E-07 |
| pa230 | 3.756E-17 | 3.469E-17 | 2.899E-17 | 1.444E-17 | 2.050E-18 | 1.805E-19 | 6.995E-24 | 3.389E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 3.478E-07 | 3.478E-07 | 3.479E-07 | 3.485E-07 | 3.500E-07 | 3.518E-07 | 3.593E-07 | 3.700E-07 | 3.807E-07 | 3.914E-07 | 3.994E-07 | 4.021E-07 | 4.128E-07 | 4.235E-07 |
| pa232 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.321E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 | 2.320E-16 |
| pa233 | 9.899E-08 | 9.899E-08 | 9.899E-08 | 9.900E-08 | 9.902E-08 | 9.906E-08 | 9.928E-08 | 9.975E-08 | 1.003E-07 | 1.010E-07 | 1.015E-07 | 1.017E-07 | 1.027E-07 | 1.037E-07 |
| pa234m | 6.883E-12 | 6.883E-12 | 6.883E-12 | 6.883E-12 | 6.883E-12 | 6.883E-12 | 6.887E-12 | 6.883E-12 | 6.883E-12 | 6.883E-12 | 6.885E-12 | 6.883E-12 | 6.883E-12 | 6.883E-12 |
| pa234 | 3.819E-12 | 3.817E-12 | 3.820E-12 | 3.820E-12 | 3.819E-12 | 3.819E-12 | 3.822E-12 | 3.820E-12 | 3.820E-12 | 3.820E-12 | 3.821E-12 | 3.820E-12 | 3.820E-12 | 3.820E-12 |
| u230 | 8.377E-17 | 7.859E-17 | 6.806E-17 | 3.881E-17 | 7.951E-18 | 1.083E-18 | 2.351E-22 | 1.227E-27 | 6.400E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 7.274E-06 | 7.295E-06 | 7.341E-06 | 7.519E-06 | 8.005E-06 | 8.587E-06 | 1.076E-05 | 1.326E-05 | 1.518E-05 | 1.663E-05 | 1.748E-05 | 1.772E-05 | 1.853E-05 | 1.912E-05 |
| u233 | 6.730E-06 | 6.735E-06 | 6.747E-06 | 6.791E-06 | 6.916E-06 | 7.071E-06 | 7.721E-06 | 8.754E-06 | 9.791E-06 | 1.084E-05 | 1.155E-05 | 1.179E-05 | 1.285E-05 | 1.392E-05 |
| u234 | 1.562E-01 | 1.563E-01 | 1.566E-01 | 1.577E-01 | 1.607E-01 | 1.646E-01 | 1.812E-01 | 2.054E-01 | 2.296E-01 | 2.537E-01 | 2.715E-01 | 2.775E-01 | 3.012E-01 | 3.247E-01 |
| u235 | 1.100E+01 | 1.100E+01 | 1.100E+01 | 1.100E+01 | 1.100E+01 | 1.100E+01 | 1.101E+01 | 1.101E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.103E+01 | 1.103E+01 |
| u236 | 4.916E+00 | 4.916E+00 | 4.916E+00 | 4.916E+00 | 4.918E+00 | 4.919E+00 | 4.925E+00 | 4.934E+00 | 4.943E+00 | 4.952E+00 | 4.959E+00 | 4.961E+00 | 4.970E+00 | 4.979E+00 |

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5 more years for cooling used fuel material actinides page 13

0 nuclide concentrations, grams

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| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 1.668E-06 | 1.668E-06 | 1.667E-06 | 1.663E-06 | 1.652E-06 | 1.639E-06 | 1.584E-06 | 1.509E-06 | 1.438E-06 | 1.370E-06 | 1.321E-06 | 1.305E-06 | 1.243E-06 | 1.184E-06 |
| u238 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 | 1.419E+04 |
| u240 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 | 4.418E-14 |
| np235 | 3.805E-08 | 3.792E-08 | 3.762E-08 | 3.649E-08 | 3.349E-08 | 3.010E-08 | 1.927E-08 | 1.017E-08 | 5.372E-09 | 2.832E-09 | 1.759E-09 | 1.495E-09 | 7.895E-10 | 4.169E-10 |
| np236 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 | 4.996E-06 |
| np237 | 2.923E+00 | 2.923E+00 | 2.923E+00 | 2.924E+00 | 2.925E+00 | 2.926E+00 | 2.933E+00 | 2.945E+00 | 2.962E+00 | 2.982E+00 | 2.999E+00 | 3.005E+00 | 3.031E+00 | 3.061E+00 |
| np238 | 7.922E-09 | 7.922E-09 | 7.921E-09 | 7.920E-09 | 7.914E-09 | 7.908E-09 | 7.881E-09 | 7.842E-09 | 7.804E-09 | 7.765E-09 | 7.737E-09 | 7.727E-09 | 7.689E-09 | 7.652E-09 |
| np239 | 5.442E-06 | 5.442E-06 | 5.442E-06 | 5.442E-06 | 5.442E-06 | 5.442E-06 | 5.442E-06 | 5.441E-06 | 5.441E-06 | 5.440E-06 | 5.440E-06 | 5.440E-06 | 5.439E-06 | 5.439E-06 |
| np240m | 3.771E-16 | 3.774E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 | 3.771E-16 |
| np240 | 3.879E-18 | 3.883E-18 | 3.880E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 | 3.879E-18 |
| pu236 | 1.603E-05 | 1.601E-05 | 1.596E-05 | 1.578E-05 | 1.527E-05 | 1.467E-05 | 1.223E-05 | 9.717E-06 | 7.623E-06 | 5.980E-06 | 4.992E-06 | 4.693E-06 | 3.683E-06 | 2.890E-06 |
| pu237 | 2.407E-07 | 2.335E-07 | 2.181E-07 | 1.672E-07 | 7.943E-08 | 3.145E-08 | 6.542E-10 | 2.560E-12 | 1.002E-14 | 3.861E-17 | 6.204E-19 | 1.511E-19 | 5.913E-22 | 2.314E-24 |
| pu238 | 2.897E+00 | 2.900E+00 | 2.905E+00 | 2.923E+00 | 2.968E+00 | 3.012E+00 | 3.101E+00 | 3.119E+00 | 3.104E+00 | 3.082E+00 | 3.064E+00 | 3.058E+00 | 3.034E+00 | 3.011E+00 |
| pu239 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 | 1.557E+02 |
| pu240 | 8.576E+01 | 8.576E+01 | 8.576E+01 | 8.576E+01 | 8.578E+01 | 8.579E+01 | 8.586E+01 | 8.596E+01 | 8.605E+01 | 8.614E+01 | 8.620E+01 | 8.622E+01 | 8.631E+01 | 8.638E+01 |
| pu241 | 5.347E+01 | 5.346E+01 | 5.342E+01 | 5.330E+01 | 5.295E+01 | 5.253E+01 | 5.078E

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cm241 | 5.132E-10 | 4.920E-10 | 4.474E-10 | 3.091E-10 | 1.097E-10 | 3.023E-11 | 1.381E-13 | 6.169E-17 | 2.756E-20 | 1.206E-23 | 3.845E-26 | 5.387E-27 | 2.407E-30 | 1.075E-33 |
| cm242 | 2.881E-01 | 2.857E-01 | 2.802E-01 | 2.601E-01 | 2.112E-01 | 1.630E-01 | 5.515E-02 | 1.176E-02 | 2.576E-03 | 6.289E-04 | 2.722E-04 | 2.186E-04 | 1.314E-04 | 1.125E-04 |
| cm243 | 2.465E-02 | 2.465E-02 | 2.464E-02 | 2.461E-02 | 2.453E-02 | 2.444E-02 | 2.403E-02 | 2.347E-02 | 2.292E-02 | 2.238E-02 | 2.198E-02 | 2.185E-02 | 2.134E-02 | 2.083E-02 |
| cm244 | 2.967E+00 | 2.967E+00 | 2.965E+00 | 2.960E+00 | 2.945E+00 | 2.926E+00 | 2.849E+00 | 2.742E+00 | 2.639E+00 | 2.540E+00 | 2.468E+00 | 2.444E+00 | 2.353E+00 | 2.264E+00 |
| cm245 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.060E-01 | 3.059E-01 | 3.059E-01 | 3.059E-01 | 3.059E-01 | 3.059E-01 |
| cm246 | 2.814E-02 | 2.814E-02 | 2.814E-02 | 2.813E-02 | 2.813E-02 | 2.813E-02 | 2.813E-02 | 2.813E-02 | 2.812E-02 | 2.812E-02 | 2.812E-02 | 2.811E-02 | 2.811E-02 | 2.811E-02 |
| cm247 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 | 4.960E-04 |
| cm248 | 3.962E-05 | 3.962E-05 | 3.962E-05 | 3.962E-05 | 3.963E-05 | 3.963E-05 | 3.963E-05 | 3.964E-05 | 3.965E-05 | 3.965E-05 | 3.966E-05 | 3.966E-05 | 3.966E-05 | 3.966E-05 |
| cm250 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.749E-12 | 5.748E-12 | 5.748E-12 | 5.747E-12 | 5.747E-12 | 5.747E-12 | 5.746E-12 |
| bk247 | 2.765E-14 | 2.765E-14 | 2.765E-14 | 2.765E-14 | 2.765E-14 | 2.765E-14 | 2.764E-14 | 2.762E-14 | 2.761E-14 | 2.759E-14 | 2.758E-14 | 2.758E-14 | 2.757E-14 | 2.755E-14 |
| bk248 | 1.111E-12 | 1.110E-12 | 1.109E-12 | 1.105E-12 | 1.094E-12 | 1.080E-12 | 1.023E-12 | 9.472E-13 | 8.770E-13 | 8.119E-13 | 7.666E-13 | 7.517E-13 | 6.960E-13 | 6.444E-13 |
| bk249 | 3.900E-07 | 3.883E-07 | 3.845E-07 | 3.702E-07 | 3.329E-07 | 2.917E-07 | 1.679E-07 | 7.616E-08 | 3.454E-08 | 1.563E-08 | 8.673E-09 | 7.091E-09 | 3.216E-09 | 1.459E-09 |
| bk250 | 2.688E-16 | 2.675E-16 | 2.645E-16 | 2.531E-16 | 2.238E-16 | 1.920E-16 | 1.011E-16 | 4.040E-17 | 1.615E-17 | 6.447E-18 | 3.264E-18 | 2.588E-18 | 1.046E-18 | 4.299E-19 |
| cf248 | 7.866E-13 | 7.833E-13 | 7.760E-13 | 7.483E-13 | 6.759E-13 | 5.954E-13 | 3.504E-13 | 1.641E-13 | 7.686E-14 | 3.592E-14 | 2.041E-14 | 1.682E-14 | 7.878E-15 | 3.689E-15 |
| cf249 | 3.841E-07 | 3.858E-07 | 3.896E-07 | 4.038E-07 | 4.410E-07 | 4.821E-07 | 6.051E-07 | 6.956E-07 | 7.358E-07 | 7.532E-07 | 7.591E-07 | 7.603E-07 | 7.626E-07 | 7.629E-07 |
| cf250 | 2.260E-07 | 2.259E-07 | 2.258E-07 | 2.252E-07 | 2.236E-07 | 2.216E-07 | 2.136E-07 | 2.026E-07 | 1.921E-07 | 1.822E-07 | 1.751E-07 | 1.728E-07 | 1.639E-07 | 1.554E-07 |
| cf251 | 1.166E-07 | 1.166E-07 | 1.166E-07 | 1.166E-07 | 1.166E-07 | 1.166E-07 | 1.165E-07 | 1.165E-07 | 1.164E-07 | 1.163E-07 | 1.162E-07 | 1.162E-07 | 1.161E-07 | 1.160E-07 |
| cf252 | 4.841E-08 | 4.834E-08 | 4.819E-08 | 4.759E-08 | 4.594E-08 | 4.397E-08 | 3.662E-08 | 2.818E-08 | 2.169E-08 | 1.668E-08 | 1.372E-08 | 1.284E-08 | 9.879E-09 | 7.603E-09 |
| cf253 | 7.499E-15 | 6.937E-15 | 5.823E-15 | 2.947E-15 | 4.376E-16 | 4.074E-17 | 1.995E-21 | 1.351E-27 | 9.144E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 2.350E-13 | 2.297E-13 | 2.182E-13 | 1.785E-13 | 1.018E-13 | 5.062E-14 | 2.726E-15 | 4.163E-17 | 6.357E-19 | 9.597E-21 | 4.253E-22 | 1.465E-22 | 2.238E-24 | 3.417E-26 |
| es252 | 1.352E-16 | 1.348E-16 | 1.339E-16 | 1.305E-16 | 1.214E-16 | 1.110E-16 | 7.631E-17 | 4.463E-17 | 2.610E-17 | 1.524E-17 | 1.022E-17 | 8.915E-18 | 5.214E-18 | 3.050E-18 |
| es253 | 1.536E-13 | 1.441E-13 | 1.248E-13 | 7.107E-14 | 1.447E-14 | 1.947E-15 | 3.864E-19 | 1.712E-24 | 7.344E-30 | 3.045E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 5.623E-13 | 5.595E-13 | 5.532E-13 | 5.294E-13 | 4.681E-13 | 4.015E-13 | 2.115E-13 | 8.447E-14 | 3.374E-14 | 1.344E-14 | 6.785E-15 | 5.371E-15 | 2.145E-15 | 8.569E-16 |
| es255 | 1.417E-15 | 1.369E-15 | 1.265E-15 | 9.330E-16 | 3.974E-16 | 1.374E-16 | 1.619E-18 | 2.808E-21 | 4.872E-24 | 8.306E-27 | 7.279E-29 | 1.441E-29 | 2.500E-32 | 4.337E-35 |
| total | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 |

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5 more years for cooling used fuel material actinides page 14

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element concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 3.527E-02 | 3.532E-02 | 3.544E-02 | 3.590E-02 | 3.706E-02 | 3.829E-02 | 4.191E-02 | 4.526E-02 | 4.804E-02 | 5.070E-02 | 5.265E-02 | 5.331E-02 | 5.592E-02 | 5.851E-02 |
| li | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 | 4.175E-16 |
| tl | 5.476E-14 | 5.498E-14 | 5.510E-14 | 5.729E-14 | 6.560E-14 | 7.503E-14 | 1.175E-13 | 1.822E-13 | 2.454E-13 | 3.032E-13 | 3.418E-13 | 3.543E-13 | 3.967E-13 | 4.324E-13 |
| pb | 1.451E-08 | 1.461E-08 | 1.485E-08 | 1.577E-08 | 1.851E-08 | 2.238E-08 | 4.453E-08 | 9.413E-08 | 1.651E-07 | 2.565E-07 | 3.362E-07 | 3.656E-07 | 4.902E-07 | 6.279E-07 |
| bi | 5.120E-12 | 5.136E-12 | 5.149E-12 | 5.298E-12 | 5.836E-12 | 6.455E-12 | 9.215E-12 | 1.339E-11 | 1.747E-11 | 2.127E-11 | 2.384E-11 | 2.468E-11 | 2.762E-11 | 3.017E-11 |
| po | 1.190E-14 | 1.192E-14 | 1.196E-14 | 1.212E-14 | 1.249E-14 | 1.278E-14 | 1.334E-14 | 1.353E-14 | 1.365E-14 | 1.388E-14 | 1.415E-14 | 1.426E-14 | 1.487E-14 | 1.572E-14 |
| rn | 4.903E-14 | 4.904E-14 | 4.929E-14 | 5.130E-14 | 5.873E-14 | 6.717E-14 | 1.052E-13 | 1.631E-13 | 2.196E-13 | 2.715E-13 | 3.061E-13 | 3.173E-13 | 3.555E-13 | 3.876E-13 |
| fr | 7.777E-18 | 7.779E-18 | 7.778E-18 | 7.780E-18 | 7.803E-18 | 7.838E-18 | 7.994E-18 | 8.217E-18 | 8.445E-18 | 8.680E-18 | 8.857E-18 | 8.913E-18 | 9.163E-18 | 9.413E-18 |
| ra | 3.030E-10 | 3.030E-10 | 3.047E-10 | 3.168E-10 | 3.613E-10 | 4.121E-10 | 6.815E-10 | 9.939E-10 | 1.343E-09 | 1.671E-09 | 1.896E-09 | 1.970E-09 | 2.232E-09 | 2.465E-09 |
| ac | 9.818E-12 | 9.856E-12 | 9.941E-12 | 1.027E-11 | 1.120E-11 | 1.236E-11 | 1.715E-11 | 2.411E-11 | 3.103E-11 | 3.798E-11 | 4.314E-11 | 4.490E-11 | 5.183E-11 | 5.876E-11 |
| th | 5.166E-06 | 5.170E-06 | 5.177E-06 | 5.208E-06 | 5.294E-06 | 5.402E-06 | 5.880E-06 | 6.624E-06 | 7.434E-06 | 8.309E-06 | 8.997E-06 | 9.240E-06 | 1.023E-05 | 1.128E-05 |
| pa | 4.468E-07 | 4.468E-07 | 4.469E-07 | 4.475E-07 | 4.490E-07 | 4.509E-07 | 4.586E-07 | 4.697E-07 | 4.810E-07 | 4.924E-07 | 5.008E-07 | 5.038E-07 | 5.155E-07 | 5.272E-07 |
| u | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 | 1.421E+04 |
| np | 2.923E+00 | 2.923E+00 | 2.923E+00 | 2.924E+00 | 2.925E+00 | 2.926E+00 | 2.933E+00 | 2.945E+00 | 2.962E+00 | 2.982E+00 | 2.999E+00 | 3.005E+00 | 3.031E+00 | 3.061E+00 |
| pu | 3.198E+02 | 3.198E+02 | 3.197E+02 | 3.196E+02 | 3.193E+02 | 3.190E+02 | 3.174E+02 | 3.151E+02 | 3.129E+02 | 3.107E+02 | 3.092E+02 | 3.087E+02 | 3.068E+02 | 3.050E+02 |
| am | 1.053E+01 | 1.055E+01 | 1.058E+01 | 1.070E+01 | 1.105E+01 | 1.147E+01 | 1.321E+01 | 1.560E+01 | 1.787E+01 | 2.004E+01 | 2.158E+01 | 2.209E+01 | 2.404E+01 | 2.590E+01 |
| cm | 3.615E+00 | 3.612E+00 | 3.605E+00 | 3.579E+00 | 3.515E+00 | 3.448E+00 | 3.263E+00 | 3.112E+00 | 2.999E+00 | 2.897E+00 | 2.825E+00 | 2.801E+00 | 2.709E+00 | 2.620E+00 |
| bk | 3.900E-07 | 3.883E-07 | 3.845E-07 | 3.702E-07 | 3.329E-07 | 2.917E-07 | 1.679E-07 | 7.616E-08 | 3.454E-08 | 1.563E-08 | 8.674E-09 | 7.091E-09 | 3.217E-09 | 1.459E-09 |
| cf | 7.752E-07 | 7.767E-07 | 7.802E-07 | 7.932E-07 | 8.272E-07 | 8.643E-07 | 9.719E-07 | 1.043E-06 | 1.066E-06 | 1.068E-06 | 1.064E-06 | 1.062E-06 | 1.052E-06 | 1.042E-06 |
| es | 7.175E-13 | 7.051E-13 | 6.794E-13 | 6.016E-13 | 4.830E-13 | 4.037E-13 | 2.116E-13 | 8.452E-14 | 3.377E-14 | 1.346E-14 | 6.795E-15 | 5.379E-15 | 2.150E-15 | 8.600E-16 |
| totals | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 | 1.455E+04 |

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5 more years for cooling used fuel material actinides page 15

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg206 | 1.164E-18 | 1.164E-18 | 1.164E-18 | 1.163E-18 | 1.159E-18 | 1.156E-18 | 1.142E-18 | 1.131E-18 | 1.133E-18 | 1.149E-18 | 1.172E-18 | 1.182E-18 | 1.237E-18 | 1.316E-18 |
| tl206 | 8.211E-17 | 8.213E-17 | 8.210E-17 | 8.199E-17 | 8.176E-17 | 8.153E-17 | 8.057E-17 | 7.980E-17 | 7.988E-17 | 8.101E-17 | 8.265E-17 | 8.338E-17 | 8.724E-17 | 9.284E-17 |
| tl207 | 6.732E-10 | 6.731E-10 | 6.740E-10 | 6.868E-10 | 7.482E-10 | 8.312E-10 | 1.241E-09 | 1.741E-09 | 2.242E-09 | 2.744E-09 | 3.118E-09 | 3.183E-09 | 3.746E-09 | 4.247E-09 |
| tl208 | 1.622E-05 | 1.629E-05 | 1.632E-05 | 1.697E-05 | 1.943E-05 | 2.222E-05 | 3.481E-05 | 5.397E-05 | 7.267E-05 | 8.981E-05 | 1.012E-04 | 1.049E-04 | 1.175E-04 | 1.281E-04 |
| tl209 | 2.874E-11 | 2.874E-11 | 2.873E-11 | 2.871E-11 | 2.870E-11 | 2.872E-11 | 2.884E-11 | 2.900E-11 | 2.918E-11 | 2.939E-11 | 2.955E-11 | 2.959E-11 | 2.986E-11 | 3.012E-11 |
| tl210 | 4.098E-15 | 4.102E-15 | 4.116E-15 | 4.214E-15 | 4.565E-15 | 4.980E-15 | 6.982E-15 | 1.066E-14 | 1.540E-14 | 2.135E-14 | 2.662E-14 | 2.860E-14 | 3.730E-14 | 4.756E-14 |
| pb209 | 1.307E-09 | 1.307E-09 | 1.306E-09 | 1.305E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| pb210 | 6.127E-11 | 6.127E-11 | 6.125E-11 | 6.119E-11 | 6.102E-11 | 6.083E-11 | 6.012E-11 | 5.955E-11 | 5.961E-11 | 6.045E-11 | 6.167E-11 | 6.222E-11 | 6.511E-11 | 6.928E-11 |
| pb211 | 6.751E-10 | 6.750E-10 | 6.759E-10 | 6.887E-10 | 7.502E-10 | 8.335E-10 | 1.245E-09 | 1.746E-09 | 2.248E-09 | 2.752E-09 | 3.127E-09 | 3.192E-09 | 3.757E-09 | 4.259E-09 |
| pb212 | 4.513E-05 | 4.511E-05 | 4.540E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| pb214 | 1.951E-11 | 1.953E-11 | 1.959E-11 | 2.006E-11 | 2.173E-11 | 2.371E-11 | 3.324E-11 | 5.074E-11 | 7.331E-11 | 1.017E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.264E-10 |
| bi207 | 1.076E-18 | 1.076E-18 | 1.075E-18 | 1.074E-18 | 1.071E-18 | 1.067E-18 | 1.051E-18 | 1.028E-18 | 1.006E-18 | 9.839E-19 | 9.679E-19 | 9.625E-19 | 9.416E-19 | 9.211E-19 |
| bi210 | 6.131E-11 | 6.130E-11 | 6.128E-11 | 6.122E-11 | 6.105E-11 | 6.088E-11 | 6.016E-11 | 5.959E-11 | 5.965E-11 | 6.048E-11 | 6.171E-11 | 6.226E-11 | 6.514E-11 | 6.932E-11 |
| bi211 | 6.751E-10 | 6.750E-10 | 6.759E-10 | 6.887E-10 | 7.502E-10 | 8.335E-10 | 1.245E-09 | 1.746E-09 | 2.248E-09 | 2.752E-09 | 3.127E-09 | 3.192E-09 | 3.757E-09 | 4.259E-09 |
| bi212 | 4.513E-05 | 4.531E-05 | 4.541E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| bi213 | 1.306E-09 | 1.307E-09 | 1.306E-09 | 1.305E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| bi214 | 1.951E-11 | 1.953E-11 | 1.960E-11 | 2.007E-11 | 2.174E-11 | 2.371E-11 | 3.325E-11 | 5.075E-11 | 7.333E-11 | 1.017E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.265E-10 |
| po209 | 4.326E-18 | 4.326E-18 | 4.326E-18 | 4.324E-18 | 4.320E-18 | 4.316E-18 | 4.295E-18 | 4.266E-18 | 4.237E-18 | 4.208E-18 | 4.187E-18 | 4.180E-18 | 4.152E-18 | 4.124E-18 |
| po210 | 5.295E-11 | 5.303E-11 | 5.321E-11 | 5.389E-11 | 5.546E-11 | 5.669E-11 | 5.877E-11 | 5.895E-11 | 5.883E-11 | 5.927E-11 | 6.007E-11 | 6.045E-11 | 6.276E-11 | 6.621E-11 |
| po211 | 1.863E-12 | 1.863E-12 | 1.865E-12 | 1.901E-12 | 2.071E-12 | 2.301E-12 | 3.415E-12 | 4.819E-12 | 6.205E-12 | 7.594E-12 | 8.610E-12 | 8.629E-12 | 1.037E-11 | 1.176E-11 |
| po212 | 2.891E-05 | 2.903E-05 | 2.909E-05 | 3.025E-05 | 3.463E-05 | 3.961E-05 | 6.204E-05 | 9.620E-05 | 1.295E-04 | 1.601E-04 | 1.804E-04 | 1.871E-04 | 2.095E-04 | 2.283E-04 |
| po213 | 1.278E-09 | 1.278E-09 | 1.277E-09 | 1.276E-09 | 1.276E-09 | 1.277E-09 | 1.282E-09 | 1.289E-09 | 1.297E-09 | 1.307E-09 | 1.314E-09 | 1.316E-09 | 1.327E-09 | 1.339E-09 |
| po214 | 2.180E-11 | 2.168E-11 | 2.145E-11 | 2.112E-11 | 2.195E-11 | 2.374E-11 | 3.324E-11 | 5.074E-11 | 7.331E-11 | 1.016E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.264E-10 |
| po215 | 6.751E-10 | 6.750E-10 | 6.759E-10 | 6.887E-10 | 7.502E-10 | 8.335E-10 | 1.245E-09 | 1.746E-09 | 2.248E-09 | 2.752E-09 | 3.127E-09 | 3.192E-09 | 3.757E-09 | 4.259E-09 |
| po216 | 4.513E-05 | 4.513E-05 | 4.536E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| po218 | 1.951E-11 | 1.953E-11 | 1.960E-11 | 2.007E-11 | 2.174E-11 | 2.371E-11 | 3.325E-11 | 5.075E-11 | 7.333E-11 | 1.017E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.265E-10 |
| at217 | 1.306E-09 | 1.307E-09 | 1.306E-09 | 1.305E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| at218 | 3.903E-15 | 3.906E-15 | 3.920E-15 | 4.015E-15 | 4.348E-15 | 4.743E-15 | 6.649E-15 | 1.015E-14 | 1.467E-14 | 2.033E-14 | 2.536E-14 | 2.724E-14 | 3.552E-14 | 4.529E-14 |
| rn217 | 9.145E-14 | 9.147E-14 | 9.143E-14 | 9.135E-14 | 9.133E-14 | 9.140E-14 | 9.176E-14 | 9.228E-14 | 9.286E-14 | 9.352E-14 | 9.404E-14 | 9.416E-14 | 9.501E-14 | 9.585E-14 |
| rn218 | 2.289E-12 | 2.148E-12 | 1.860E-12 | 1.061E-12 | 2.173E-13 | 2.961E-14 | 1.308E-17 | 1.015E-17 | 1.467E-17 | 2.033E-17 | 2.536E-17 | 2.724E-17 | 3.552E-17 | 4.529E-17 |
| rn219 | 6.751E-10 | 6.750E-10 | 6.759E-10 | 6.887E-10 | 7.502E-10 | 8.335E-10 | 1.245E-09 | 1.746E-09 | 2.248E-09 | 2.752E-09 | 3.127E-09 | 3.192E-09 | 3.757E-09 | 4.259E-09 |
| rn220 | 4.513E-05 | 4.513E-05 | 4.536E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| rn222 | 1.951E-11 | 1.952E-11 | 1.959E-11 | 2.006E-11 | 2.174E-11 | 2.371E-11 | 3.325E-11 | 5.075E-11 | 7.333E-11 | 1.017E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.265E-10 |
| fr221 | 1.306E-09 | 1.307E-09 | 1.306E-09 | 1.305E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| fr223 | 9.782E-12 | 9.820E-12 | 9.905E-12 | 1.024E-11 | 1.116E-11 | 1.232E-11 | 1.714E-11 | 2.406E-11 | 3.097E-11 | 3.790E-11 | 4.306E-11 | 4.482E-11 | 5.174E-11 | 5.866E-11 |
| ra222 | 2.289E-12 | 2.148E-12 | 1.860E-12 | 1.061E-12 | 2.173E-13 | 2.961E-14 | 6.427E-18 | 3.396E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 6.751E-10 | 6.750E-10 | 6.759E-10 | 6.887E-10 | 7.502E-10 | 8.335E-10 | 1.245E-09 | 1.746E-09 | 2.248E-09 | 2.752E-09 | 3.127E-09 | 3.192E-09 | 3.757E-09 | 4.259E-09 |
| ra224 | 4.513E-05 | 4.513E-05 | 4.536E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| ra225 | 1.305E-09 | 1.305E-09 | 1.305E-09 | 1.304E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.346E-09 | 1.357E-09 | 1.369E-09 |
| ra226 | 1.951E-11 | 1.957E-11 | 1.971E-11 | 2.023E-11 | 2.174E-11 | 2.371E-11 | 3.325E-11 | 5.075E-11 | 7.333E-11 | 1.017E-10 | 1.268E-10 | 1.362E-10 | 1.776E-10 | 2.265E-10 |
| ra228 | 1.757E-13 | 1.758E-13 | 1.762E-13 | 1.775E-13 | 1.812E-13 | 1.858E-13 | 2.044E-13 | 2.301E-13 | 2.546E-13 | 2.782E-13 | 2.952E-13 | 3.009E-13 | 3.228E-13 | 3.440E-13 |
| ac225 | 1.306E-09 | 1.306E-09 | 1.305E-09 | 1.305E-09 | 1.306E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| ac226 | 4.220E-17 | 3.897E-17 | 3.258E-17 | 1.622E-17 | 2.304E-18 | 2.028E-19 | 7.859E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 7.089E-10 | 7.116E-10 | 7.178E-10 | 7.418E-10 | 8.089E-10 | 8.926E-10 | 1.242E-09 | 1.743E-09 | 2.244E-09 | 2.747E-09 | 3.120E-09 | 3.248E-09 | 3.749E-09 | 4.251E-09 |
| ac228 | 1.757E-13 | 1.758E-13 | 1.762E-13 | 1.775E-13 | 1.812E-13 | 1.858E-13 | 2.045E-13 | 2.301E-13 | 2.547E-13 | 2.783E-13 | 2.952E-13 | 3.009E-13 | 3.228E-13 | 3.440E-13 |
| th226 | 2.289E-12 | 2.148E-12 | 1.860E-12 | 1.061E-12 | 2.173E-13 | 2.961E-14 | 6.427E-18 | 3.396E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 6.629E-10 | 6.656E-10 | 6.717E-10 | 6.952E-10 | 7.614E-10 | 8.438E-10 | 1.227E-09 | 1.722E-09 | 2.217E-09 | 2.714E-09 | 3.083E-09 | 3.168E-09 | 3.705E-09 | 4.201E-09 |
| th228 | 4.500E-05 | 4.523E-05 | 4.576E-05 | 4.784E-05 | 5.381E-05 | 6.156E-05 | 9.660E-05 | 1.498E-04 | 2.017E-04 | 2.492E-04 | 2.807E-04 | 2.906E-04 | 3.259E-04 | 3.551E-04 |
| th229 | 1.304E-09 | 1.304E-09 | 1.304E-09 | 1.304E-09 | 1.305E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.343E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 |
| th230 | 2.477E-08 | 2.482E-08 | 2.493E-08 | 2.536E-08 | 2.659E-08 | 2.814E-08 | 3.505E-08 | 4.611E-08 | 5.856E-08 | 7.242E-08 | 8.362E-08 | 8.762E-08 | 1.042E-07 | 1.221E-07 |
| th231 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.380E-05 | 2.380E-05 | 2.381E-05 | 2.382E-05 | 2.383E-05 | 2.384E-05 | 2.384E-05 | 2.385E-05 | 2.386E-05 |
| th232 | 4.058E-13 | 4.059E-13 | 4.061E-13 | 4.068E-13 | 4.089E-13 | 4.116E-13 | 4.225E-13 | 4.382E-13 | 4.540E-13 | 4.698E-13 | 4.816E-13 | 4.856E-13 | 5.015E-13 | 5.174E-13 |

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5 more years for cooling used fuel material actinides page 16

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| th234 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.777E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.776E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 |
| pa230 | 1.226E-12 | 1.132E-12 | 9.464E-13 | 4.713E-13 | 6.692E-14 | 5.892E-15 | 2.283E-19 | 1.106E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 1.644E-08 | 1.644E-08 | 1.644E-08 | 1.647E-08 | 1.654E-08 | 1.663E-08 | 1.698E-08 | 1.748E-08 | 1.799E-08 | 1.850E-08 | 1.887E-08 | 1.900E-08 | 1.951E-08 | 2.002E-08 |
| pa232 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.899E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 | 9.898E-11 |
| pa233 | 2.057E-03 | 2.057E-03 | 2.057E-03 | 2.058E-03 | 2.058E-03 | 2.059E-03 | 2.063E-03 | 2.073E-03 | 2.085E-03 | 2.099E-03 | 2.109E-03 | 2.113E-03 | 2.134E-03 | 2.154E-03 |
| pa234m | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.777E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.776E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 |
| pa234 | 7.638E-06 | 7.634E-06 | 7.638E-06 | 7.639E-06 | 7.638E-06 | 7.638E-06 | 7.641E-06 | 7.638E-06 | 7.638E-06 | 7.638E-06 | 7.641E-06 | 7.638E-06 | 7.638E-06 | 7.638E-06 |
| u230 | 2.288E-12 | 2.146E-12 | 1.858E-12 | 1.060E-12 | 2.171E-13 | 2.958E-14 | 6.420E-18 | 3.350E-23 | 1.748E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 1.628E-04 | 1.632E-04 | 1.643E-04 | 1.682E-04 | 1.791E-04 | 1.921E-04 | 2.409E-04 | 2.968E-04 | 3.395E-04 | 3.721E-04 | 3.910E-04 | 3.966E-04 | 4.147E-04 | 4.279E-04 |
| u233 | 6.489E-08 | 6.494E-08 | 6.505E-08 | 6.548E-08 | 6.668E-08 | 6.818E-08 | 7.445E-08 | 8.440E-08 | 9.441E-08 | 1.045E-07 | 1.113E-07 | 1.137E-07 | 1.239E-07 | 1.342E-07 |
| u234 | 9.723E-04 | 9.731E-04 | 9.748E-04 | 9.816E-04 | 1.001E-03 | 1.025E-03 | 1.128E-03 | 1.279E-03 | 1.430E-03 | 1.580E-03 | 1.690E-03 | 1.728E-03 | 1.875E-03 | 2.021E-03 |
| u235 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.379E-05 | 2.380E-05 | 2.380E-05 | 2.381E-05 | 2.382E-05 | 2.383E-05 | 2.384E-05 | 2.384E-05 | 2.385E-05 | 2.386E-05 |
| u236 | 3.181E-04 | 3.181E-04 | 3.181E-04 | 3.181E-04 | 3.182E-04 | 3.183E-04 | 3.187E-04 | 3.193E-04 | 3.199E-04 | 3.204E-04 | 3.209E-04 | 3.210E-04 | 3.216E-04 | 3.222E-04 |
| u237 | 1.362E-01 | 1.362E-01 | 1.361E-01 | 1.358E-01 | 1.349E-01 | 1.338E-01 | 1.294E-01 | 1.232E-01 | 1.170E-01 | 1.108E-01 | 1.064E-01 | 1.050E-01 | 1.000E-01 | 9.470E-02 |
| u238 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 | 4.774E-03 |
| u240 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 | 4.093E-08 |
| np235 | 5.339E-05 | 5.321E-05 | 5.279E-05 | 5.120E-05 | 4.699E-05 | 4.224E-05 | 2.703E-05 | 1.428E-05 | 7.538E-06 | 3.973E-06 | 2.469E-06 | 2.098E-06 | 1.108E-06 | 5.850E-07 |
| np236 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 | 4.949E-08 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pu243 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 |
| pu244 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 | 4.098E-08 |
| pu246 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 |
| am241 | 1.430E+01 | 1.435E+01 | 1.446E+01 | 1.488E+01 | 1.606E+01 | 1.752E+01 | 2.350E+01 | 3.170E+01 | 3.949E+01 | 4.692E+01 | 5.221E+01 | 5.397E+01 | 6.067E+01 | 6.703E+01 |
| am242m | 4.475E-01 | 4.475E-01 | 4.474E-01 | 4.473E-01 | 4.470E-01 | 4.467E-01 | 4.451E-01 | 4.429E-01 | 4.408E-01 | 4.386E-01 | 4.370E-01 | 4.365E-01 | 4.343E-01 | 4.322E-01 |
| am242 | 4.454E-01 | 4.454E-01 | 4.454E-01 | 4.453E-01 | 4.450E-01 | 4.446E-01 | 4.431E-01 | 4.409E-01 | 4.388E-01 | 4.366E-01 | 4.350E-01 | 4.345E-01 | 4.323E-01 | 4.302E-01 |
| am243 | 1.263E+00 | 1.263E+00 | 1.263E+00 | 1.263E+00 | 1.263E+00 | 1.263E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 |
| am244 | 1.781E-10 | 1.780E-10 | 1.780E-10 | 1.772E-10 | 1.754E-10 | 1.731E-10 | 1.641E-10 | 1.519E-10 | 1.407E-10 | 1.302E-10 | 1.229E-10 | 1.205E-10 | 1.116E-10 | 1.033E-10 |
| am245 | 9.273E-09 | 9.233E-09 | 9.143E-09 | 8.803E-09 | 7.917E-09 | 6.937E-09 | 3.993E-09 | 1.811E-09 | 8.214E-10 | 3.717E-10 | 2.062E-10 | 1.686E-10 | 7.647E-11 | 3.469E-11 |
| am245m | 1.784E-13 | 1.786E-13 | 1.786E-13 | 1.785E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.784E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 | 1.783E-13 |
| cm240 | 8.291E-09 | 7.876E-09 | 7.017E-09 | 4.477E-09 | 1.273E-09 | 2.658E-10 | 3.815E-13 | 3.251E-17 | 2.770E-21 | 2.301E-25 | 2.134E-28 | 1.960E-29 | 0.000E+00 | 0.000E+00 |
| cm241 | 8.482E-06 | 8.131E-06 | 7.393E-06 | 5.108E-06 | 1.813E-06 | 4.996E-07 | 2.282E-09 | 1.020E-12 | 4.555E-16 | 1.993E-19 | 6.354E-22 | 8.903E-23 | 3.978E-26 | 1.777E-29 |
| cm242 | 9.544E+02 | 9.463E+02 | 9.284E+02 | 8.618E+02 | 6.997E+02 | 5.399E+02 | 1.827E+02 | 3.896E+01 | 8.533E+00 | 2.084E+00 | 9.017E-01 | 7.243E-01 | 4.353E-01 | 3.727E-01 |
| cm243 | 1.247E+00 | 1.247E+00 | 1.246E+00 | 1.245E+00 | 1.241E+00 | 1.236E+00 | 1.216E+00 | 1.187E+00 | 1.159E+00 | 1.132E+00 | 1.112E+00 | 1.105E+00 | 1.079E+00 | 1.054E+00 |
| cm244 | 2.402E+02 | 2.401E+02 | 2.400E+02 | 2.396E+02 | 2.383E+02 | 2.368E+02 | 2.306E+02 | 2.219E+02 | 2.136E+02 | 2.056E+02 | 1.998E+02 | 1.978E+02 | 1.904E+02 | 1.833E+02 |
| cm245 | 5.256E-02 | 5.256E-02 | 5.256E-02 | 5.256E-02 | 5.256E-02 | 5.256E-02 | 5.255E-02 | 5.255E-02 | 5.255E-02 | 5.254E-02 | 5.254E-02 | 5.254E-02 | 5.253E-02 | 5.253E-02 |
| cm246 | 8.594E-03 | 8.594E-03 | 8.594E-03 | 8.593E-03 | 8.593E-03 | 8.593E-03 | 8.592E-03 | 8.592E-03 | 8.590E-03 | 8.588E-03 | 8.588E-03 | 8.587E-03 | 8.586E-03 | 8.585E-03 |
| cm247 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 | 4.604E-08 |
| cm248 | 1.642E-07 | 1.642E-07 | 1.642E-07 | 1.642E-07 | 1.642E-07 | 1.642E-07 | 1.643E-07 | 1.643E-07 | 1.643E-07 | 1.643E-07 | 1.643E-07 | 1.643E-07 | 1.644E-07 | 1.644E-07 |
| cm249 | 6.756E-13 | 6.250E-13 | 5.246E-13 | 2.655E-13 | 3.943E-14 | 3.671E-15 | 1.797E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 9.909E-13 | 9.909E-13 | 9.909E-13 | 9.909E-13 | 9.909E-13 | 9.910E-13 | 9.909E-13 | 9.908E-13 | 9.908E-13 | 9.907E-13 | 9.906E-13 | 9.906E-13 | 9.905E-13 | 9.904E-13 |
| bk247 | 2.901E-14 | 2.901E-14 | 2.901E-14 | 2.901E-14 | 2.901E-14 | 2.901E-14 | 2.900E-14 | 2.898E-14 | 2.897E-14 | 2.895E-14 | 2.894E-14 | 2.894E-14 | 2.893E-14 | 2.891E-14 |

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5 more years for cooling used fuel material actinides page 17

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk248 | 1.781E-10 | 1.780E-10 | 1.778E-10 | 1.772E-10 | 1.754E-10 | 1.731E-10 | 1.640E-10 | 1.519E-10 | 1.406E-10 | 1.302E-10 | 1.229E-10 | 1.205E-10 | 1.116E-10 | 1.033E-10 |
| bk249 | 6.393E-04 | 6.366E-04 | 6.304E-04 | 6.070E-04 | 5.458E-04 | 4.783E-04 | 2.753E-04 | 1.249E-04 | 5.663E-05 | 2.563E-05 | 1.422E-05 | 1.162E-05 | 5.273E-06 | 2.391E-06 |
| bk250 | 1.050E-09 | 1.044E-09 | 1.033E-09 | 9.882E-10 | 8.736E-10 | 7.494E-10 | 3.948E-10 | 1.577E-10 | 6.306E-11 | 2.517E-11 | 1.274E-11 | 1.010E-11 | 4.083E-12 | 1.679E-12 |
| bk251 | 1.461E-12 | 1.411E-12 | 1.304E-12 | 9.616E-13 | 4.096E-13 | 1.416E-13 | 1.668E-15 | 2.894E-18 | 5.021E-21 | 8.561E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 1.242E-09 | 1.237E-09 | 1.226E-09 | 1.182E-09 | 1.067E-09 | 9.404E-10 | 5.535E-10 | 2.592E-10 | 1.214E-10 | 5.673E-11 | 3.223E-11 | 2.657E-11 | 1.244E-11 | 5.827E-12 |
| cf249 | 1.572E-06 | 1.579E-06 | 1.594E-06 | 1.653E-06 | 1.805E-06 | 1.973E-06 | 2.476E-06 | 2.846E-06 | 3.011E-06 | 3.082E-06 | 3.106E-06 | 3.111E-06 | 3.121E-06 | 3.122E-06 |
| cf250 | 2.472E-05 | 2.471E-05 | 2.469E-05 | 2.463E-05 | 2.446E-05 | 2.424E-05 | 2.336E-05 | 2.215E-05 | 2.101E-05 | 1.993E-05 | 1.915E-05 | 1.890E-05 | 1.792E-05 | 1.700E-05 |
| cf251 | 1.851E-07 | 1.851E-07 | 1.851E-07 | 1.851E-07 | 1.851E-07 | 1.850E-07 | 1.849E-07 | 1.848E-07 | 1.846E-07 | 1.845E-07 | 1.844E-07 | 1.844E-07 | 1.842E-07 | 1.841E-07 |
| cf252 | 2.598E-05 | 2.594E-05 | 2.586E-05 | 2.553E-05 | 2.465E-05 | 2.360E-05 | 1.965E-05 | 1.512E-05 | 1.164E-05 | 8.951E-06 | 7.364E-06 | 6.888E-06 | 5.301E-06 | 4.080E-06 |
| cf253 | 2.174E-10 | 2.011E-10 | 1.688E-10 | 8.543E-11 | 1.269E-11 | 1.181E-12 | 5.784E-17 | 3.916E-23 | 2.651E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 1.998E-09 | 1.953E-09 | 1.854E-09 | 1.518E-09 | 8.656E-10 | 4.303E-10 | 2.317E-11 | 3.539E-13 | 5.404E-15 | 8.158E-17 | 3.616E-18 | 1.246E-18 | 1.902E-20 | 2.905E-22 |
| es252 | 1.485E-13 | 1.481E-13 | 1.471E-13 | 1.434E-13 | 1.334E-13 | 1.220E-13 | 8.387E-14 | 4.905E-14 | 2.869E-14 | 1.675E-14 | 1.123E-14 | 9.798E-15 | 5.731E-15 | 3.352E-15 |
| es253 | 3.875E-09 | 3.635E-09 | 3.147E-09 | 1.793E-09 | 3.649E-10 | 4.910E-11 | 9.747E-15 | 4.320E-20 | 1.852E-25 | 7.679E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 1.049E-09 | 1.044E-09 | 1.032E-09 | 9.876E-10 | 8.731E-10 | 7.490E-10 | 3.945E-10 | 1.576E-10 | 6.295E-11 | 2.508E-11 | 1.266E-11 | 1.002E-11 | 4.002E-12 | 1.599E-12 |
| es255 | 1.824E-11 | 1.762E-11 | 1.629E-11 | 1.201E-11 | 5.115E-12 | 1.768E-12 | 2.083E-14 | 3.614E-17 | 6.271E-20 | 1.069E-22 | 9.370E-25 | 1.855E-25 | 3.218E-28 | 5.583E-31 |
| total | 6.846E+03 | 6.836E+03 | 6.815E+03 | 6.736E+03 | 6.538E+03 | 6.335E+03 | 5.797E+03 | 5.404E+03 | 5.135E+03 | 4.900E+03 | 4.737E+03 | 4.682E+03 | 4.475E+03 | 4.278E+03 |

1

5 more years for cooling used fuel material actinides page 18

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg | 1.164E-18 | 1.164E-18 | 1.164E-18 | 1.163E-18 | 1.159E-18 | 1.156E-18 | 1.142E-18 | 1.131E-18 | 1.133E-18 | 1.149E-18 | 1.172E-18 | 1.182E-18 | 1.237E-18 | 1.316E-18 |
| tl | 1.622E-05 | 1.629E-05 | 1.632E-05 | 1.697E-05 | 1.943E-05 | 2.222E-05 | 3.481E-05 | 5.397E-05 | 7.268E-05 | 8.982E-05 | 1.012E-04 | 1.049E-04 | 1.175E-04 | 1.281E-04 |
| pb | 4.513E-05 | 4.511E-05 | 4.541E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.686E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| bi | 4.513E-05 | 4.532E-05 | 4.541E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.686E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| po | 7.404E-05 | 7.416E-05 | 7.446E-05 | 7.747E-05 | 8.869E-05 | 1.014E-04 | 1.589E-04 | 2.464E-04 | 3.318E-04 | 4.100E-04 | 4.621E-04 | 4.791E-04 | 5.364E-04 | 5.846E-04 |
| at | 1.306E-09 | 1.307E-09 | 1.306E-09 | 1.305E-09 | 1.306E-09 | 1.306E-09 | 1.311E-09 | 1.318E-09 | 1.327E-09 | 1.336E-09 | 1.345E-09 | 1.357E-09 | 1.369E-09 | 1.369E-09 |
| rn | 4.513E-05 | 4.513E-05 | 4.537E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.685E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| fr | 1.316E-09 | 1.316E-09 | 1.316E-09 | 1.315E-09 | 1.316E-09 | 1.318E-09 | 1.328E-09 | 1.342E-09 | 1.358E-09 | 1.374E-09 | 1.387E-09 | 1.390E-09 | 1.409E-09 | 1.428E-09 |
| ra | 4.513E-05 | 4.513E-05 | 4.536E-05 | 4.722E-05 | 5.406E-05 | 6.183E-05 | 9.686E-05 | 1.502E-04 | 2.022E-04 | 2.499E-04 | 2.817E-04 | 2.920E-04 | 3.270E-04 | 3.563E-04 |
| ac | 2.016E-09 | 2.018E-09 | 2.024E-09 | 2.047E-09 | 2.114E-09 | 2.198E-09 | 2.554E-09 | 3.062E-09 | 3.571E-09 | 4.083E-09 | 4.464E-09 | 4.593E-09 | 5.107E-09 | 5.620E-09 |
| th | 4.842E-03 | 4.843E-03 | 4.843E-03 | 4.845E-03 | 4.851E-03 | 4.859E-03 | 4.897E-03 | 4.947E-03 | 4.999E-03 | 5.047E-03 | 5.080E-03 | 5.088E-03 | 5.124E-03 | 5.153E-03 |
| pa | 6.839E-03 | 6.839E-03 | 6.839E-03 | 6.839E-03 | 6.839E-03 | 6.840E-03 | 6.848E-03 | 6.855E-03 | 6.866E-03 | 6.880E-03 | 6.892E-03 | 6.895E-03 | 6.915E-03 | 6.936E-03 |
| u | 1.425E-01 | 1.424E-01 | 1.424E-01 | 1.421E-01 | 1.412E-01 | 1.402E-01 | 1.358E-01 | 1.299E-01 | 1.243E-01 | 1.189E-01 | 1.151E-01 | 1.138E-01 | 1.089E-01 | 1.043E-01 |
| np | 1.267E+00 | 1.267E+00 | 1.267E+00 | 1.267E+00 | 1.267E+00 | 1.267E+00 | 1.267E+00 | 1.266E+00 | 1.266E+00 | 1.266E+00 | 1.266E+00 | 1.266E+00 | 1.266E+00 | 1.266E+00 |
| pu | 5.632E+03 | 5.630E+03 | 5.627E+03 | 5.615E+03 | 5.579E+03 | 5.536E+03 | 5.356E+03 | 5.107E+03 | 4.869E+03 | 4.641E+03 | 4.479E+03 | 4.425E+03 | 4.219E+03 | 4.023E+03 |
| am | 1.645E+01 | 1.650E+01 | 1.661E+01 | 1.703E+01 | 1.822E+01 | 1.968E+01 | 2.565E+01 | 3.384E+01 | 4.164E+01 | 4.906E+01 | 5.434E+01 | 5.610E+01 | 6.280E+01 | 6.916E+01 |
| cm | 1.196E+03 | 1.188E+03 | 1.170E+03 | 1.103E+03 | 9.394E+02 | 7.780E+02 | 4.146E+02 | 2.621E+02 | 2.234E+02 | 2.088E+02 | 2.019E+02 | 1.997E+02 | 1.920E+02 | 1.848E+02 |
| bk | 6.393E-04 | 6.366E-04 | 6.304E-04 | 6.070E-04 | 5.458E-04 | 4.783E-04 | 2.753E-04 | 1.249E-04 | 5.663E-05 | 2.563E-05 | 1.422E-05 | 1.163E-05 | 5.273E-06 | 2.392E-06 |
| cf | 5.245E-05 | 5.242E-05 | 5.233E-05 | 5.201E-05 | 5.110E-05 | 5.000E-05 | 4.567E-05 | 4.031E-05 | 3.585E-05 | 3.214E-05 | 2.981E-05 | 2.908E-05 | 2.653E-05 | 2.438E-05 |
| es | 4.942E-09 | 4.696E-09 | 4.195E-09 | 2.792E-09 | 1.243E-09 | 8.000E-10 | 3.946E-10 | 1.576E-10 | 6.297E-11 | 2.510E-11 | 1.267E-11 | 1.003E-11 | 4.008E-12 | 1.602E-12 |
| totals | 6.846E+03 | 6.836E+03 | 6.815E+03 | 6.736E+03 | 6.538E+03 | 6.335E+03 | 5.797E+03 | 5.404E+03 | 5.135E+03 | 4.900E+03 | 4.737E+03 | 4.682E+03 | 4.475E+03 | 4.278E+03 |

1

5 more years for cooling used fuel material actinides page 19

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl206 | 2.627E-19 | 2.628E-19 | 2.626E-19 | 2.623E-19 | 2.616E-19 | 2.608E-19 | 2.578E-19 | 2.553E-19 | 2.556E-19 | 2.591E-19 | 2.644E-19 | 2.668E-19 | 2.791E-19 | 2.970E-19 |
| tl207 | 1.972E-12 | 1.971E-12 | 1.974E-12 | 2.011E-12 | 2.191E-12 | 2.434E-12 | 3.635E-12 | 5.099E-12 | 6.565E-12 | 7.936E-12 | 9.322E-12 | 1.097E-11 | 1.244E-11 | 1.244E-11 |
| tl208 | 3.823E-07 | 3.839E-07 | 3.847E-07 | 4.000E-07 | 4.580E-07 | 5.238E-07 | 8.205E-07 | 1.272E-06 | 1.713E-06 | 2.117E-06 | 2.386E-06 | 2.474E-06 | 2.770E-06 | 3.019E-06 |
| tl209 | 4.812E-13 | 4.813E-13 | 4.811E-13 | 4.807E-13 | 4.806E-13 | 4.809E-13 | 4.829E-13 | 4.856E-13 | 4.887E-13 | 4.921E-13 | 4.949E-13 | 4.955E-13 | 4.999E-13 | 5.044E-13 |
| tl210 | 9.218E-17 | 9.226E-17 | 9.257E-17 | 9.478E-17 | 1.027E-16 | 1.120E-16 | 1.570E-16 | 2.397E-16 | 3.464E-16 | 4.802E-16 | 5.989E-16 | 6.434E-16 | 8.390E-16 | 1.070E-15 |
| pb209 | 1.528E-12 | 1.529E-12 | 1.528E-12 | 1.527E-12 | 1.526E-12 | 1.527E-12 | 1.534E-12 | 1.542E-12 | 1.552E-12 | 1.563E-12 | 1.572E-12 | 1.574E-12 | 1.588E-12 | 1.602E-12 |
| pb210 | 1.613E-14 | 1.612E-14 | 1.612E-14 | 1.610E-14 | 1.606E-14 | 1.601E-14 | 1.582E-14 | 1.567E-14 | 1.569E-14 | 1.591E-14 | 1.623E-14 | 1.638E-14 | 1.713E-14 | 1.823E-14 |
| pb211 | 2.054E-12 | 2.053E-12 | 2.056E-12 | 2.095E-12 | 2.282E-12 | 2.536E-12 | 3.786E-12 | 5.311E-12 | 6.838E-12 | 8.370E-12 | 9.511E-12 | 9.710E-12 | 1.143E-11 | 1.296E-11 |
| pb212 | 8.411E-08 | 8.407E-08 | 8.463E-08 | 8.801E-08 | 1.008E-07 | 1.152E-07 | 1.805E-07 | 2.799E-07 | 3.769E-07 | 4.658E-07 | 5.250E-07 | 5.443E-07 | 6.094E-07 | 6.642E-07 |
| pb214 | 6.082E-14 | 6.087E-14 | 6.108E-14 | 6.253E-14 | 6.775E-14 | 7.390E-14 | 1.036E-13 | 1.581E-13 | 2.285E-13 | 3.168E-13 | 3.951E-13 | 4.245E-13 | 5.335E-13 | 7.057E-13 |
| bi207 | 1.052E-20 | 1.052E-20 | 1.051E-20 | 1.050E-20 | 1.047E-20 | 1.043E-20 | 1.027E-20 | 1.005E-20 | 9.833E-21 | 9.619E-21 | 9.463E-21 | 9.410E-21 | 9.205E-21 | 9.006E-21 |
| bi210 | 1.415E-13 | 1.414E-13 | 1.414E-13 | 1.412E-13 | 1.409E-13 | 1.405E-13 | 1.388E-13 | 1.375E-13 | 1.376E-13 | 1.396E-13 | 1.424E-13 | 1.436E-13 | 1.503E-13 | 1.599E-13 |
| bi211 | 2.693E-11 | 2.693E-11 | 2.696E-11 | 2.748E-11 | 2.993E-11 | 3.325E-11 | 4.965E-11 | 6.965E-11 | 8.968E-11 | 1.098E-10 | 1.247E-10 | 1.273E-10 | 1.499E-10 | 1.699E-10 |
| bi212 | 7.557E-07 | 7.588E-07 | 7.604E-07 | 7.907E-07 | 9.053E-07 | 1.035E-06 | 1.622E-06 | 2.515E-06 | 3.386E-06 | 4.185E-06 | 4.717E-06 | 4.890E-06 | 5.476E-06 | 5.967E-06 |
| bi213 | 5.363E-12 | 5.364E-12 | 5.362E-12 | 5.357E-12 | 5.356E-12 | 5.360E-12 | 5.381E-12 | 5.412E-12 | 5.446E-12 | 5.484E-12 | 5.515E-12 | 5.522E-12 | 5.572E-12 | 5.621E-12 |
| bi214 | 2.472E-13 | 2.475E-13 | 2.483E-13 | 2.542E-13 | 2.754E-13 | 3.005E-13 | 4.212E-13 | 6.430E-13 | 9.290E-13 | 1.288E-12 | 1.606E-12 | 1.726E-12 | 2.250E-12 | 2.869E-12 |
| po209 | 1.271E-19 | 1.271E-19 | 1.271E-19 | 1.271E-19 | 1.269E-19 | 1.268E-19 | 1.262E-19 | 1.253E-19 | 1.245E-19 | 1.236E-19 | 1.228E-19 | 1.220E-19 | 1.212E-19 | 1.212E-19 |
| po210 | 1.696E-12 | 1.699E-12 | 1.705E-12 | 1.727E-12 | 1.777E-12 | 1.817E-12 | 1.883E-12 | 1.889E-12 | 1.885E-12 | 1.899E-12 | 1.925E-12 | 1.937E-12 | 2.011E-12 | 2.121E-12 |
| po211 | 8.385E-14 | 8.384E-14 | 8.395E-14 | 8.555E-14 | 9.318E-14 | 1.035E-13 | 1.546E-13 | 2.169E-13 | 2.792E-13 | 3.418E-13 | 3.883E-13 | 3.965E-13 | 4.666E-13 | 5.290E-13 |
| po212 | 1.534E-06 | 1.540E-06 | 1.543E-06 | 1.605E-06 | 1.837E-06 | 2.102E-06 | 3.292E-06 | 5.104E-06 | 6.873E-06 | 8.493E-06 | 9.573E-06 | 9.924E-06 | 1.111E-05 | 1.211E-05 |
| po213 | 6.463E-11 | 6.464E-11 | 6.462E-11 | 6.456E-11 | 6.455E-11 | 6.459E-11 | 6.485E-11 | 6.522E-11 | 6.563E-11 | 6.609E-11 | 6.646E-11 | 6.654E-11 | 6.714E-11 | 6.774E-11 |
| po214 | 1.012E-12 | 1.006E-12 | 9.959E-13 | 9.804E-13 | 1.019E-12 | 1.102E-12 | 1.543E-12 | 2.355E-12 | 3.403E-12 | 4.718E-12 | 5.884E-12 | 6.321E-12 | 8.242E-12 | 1.051E-11 |
| po215 | 3.012E-11 | 3.011E-11 | 3.015E-11 | 3.072E-11 | 3.347E-11 | 3.718E-11 | 5.552E-11 | 7.789E-11 | 1.003E-10 | 1.227E-10 | 1.395E-10 | 1.424E-10 | 1.676E-10 | 1.900E-10 |
| po216 | 1.847E-06 | 1.856E-06 | 1.932E-06 | 2.212E-06 | 2.530E-06 | 2.963E-06 | 4.146E-06 | 6.275E-06 | 8.275E-06 | 1.023E-05 | 1.195E-05 | 1.338E-05 | 1.458E-05 | 1.558E-05 |
| po218 | 7.069E-13 | 7.076E-13 | 7.100E-13 | 7.269E-13 | 7.875E-13 | 8.591E-13 | 1.204E-12 | 1.838E-12 | 2.656E-12 | 3.683E-12 | 4.593E-12 | 4.934E-12 | 6.434E-12 | 8.203E-12 |
| at217 | 5.571E-11 | 5.572E-11 | 5.570E-11 | 5.565E-11 | 5.564E-11 | 5.568E-11 | 5.590E-11 | 5.622E-11 | 5.657E-11 | 5.697E-11 | 5.729E-11 | 5.736E-11 | 5.788E-11 | 5.839E-11 |
| at218 | 1.589E-16 | 1.590E-16 | 1.595E-16 | 1.633E-16 | 1.770E-16 | 1.930E-16 | 2.706E-16 | 4.131E-16 | 5.969E-16 | 8.276E-16 | 1.032E-15 | 1.109E-15 | 1.446E-15 | 1.843E-15 |
| rn217 | 4.274E-15 | 4.274E-15 | 4.273E-15 | 4.269E-15 | 4.268E-15 | 4.271E-15 | 4.288E-15 | 4.312E-15 | 4.340E-15 | 4.370E-15 | 4.395E-15 | 4.400E-15 | 4.440E-15 | 4.479E-15 |
| rn218 | 9.850E-14 | 9.244E-14 | 8.005E-14 | 4.566E-14 | 9.352E-15 | 1.274E-15 | 5.627E-19 | 4.368E-19 | 6.311E-19 | 8.750E-19 | 1.091E-18 | 1.172E-18 | 1.529E-18 | 1.949E-18 |
| rn219 | 2.778E-11 | 2.778E-11 | 2.781E-11 | 2.834E-11 | 3.088E-11 | 3.430E-11 | 5.122E-11 | 7.185E-11 | 9.252E-11 | 1.132E-10 | 1.287E-10 | 1.314E-10 | 1.546E-10 | 1.753E-10 |
| rn220 | 1.713E-06 | 1.713E-06 | 1.722E-06 | 1.792E-06 | 2.052E-06 | 2.347E-06 | 3.676E-06 | 5.699E-06 | 7.674E-06 | 9.484E-06 | 1.069E-05 | 1.108E-05 | 1.241E-05 | 1.352E-05 |
| rn222 | 6.464E-13 | 6.468E-13 | 6.491E-13 | 6.647E-13 | 7.201E-13 | 7.856E-13 | 1.101E-12 | 1.681E-12 | 2.429E-12 | 3.368E-12 | 4.200E-12 | 4.512E-12 | 5.884E-12 | 7.501E-12 |
| fr221 | 5.040E-11 | 5.041E-11 | 5.039E-11 | 5.035E-11 | 5.034E-11 | 5.037E-11 | 5.057E-11 | 5.086E-11 | 5.118E-11 | 5.154E-11 | 5.183E-11 | 5.189E-11 | 5.236E-11 | 5.283E-11 |
| fr223 | 2.436E-14 | 2.445E-14 | 2.466E-14 | 2.549E-14 | 2.779E-14 | 3.067E-14 | 4.269E-14 | 5.989E-14 | 7.711E-14 | 9.437E-14 | 1.072E-13 | 1.116E-13 | 1.288E-13 | 1.461E-13 |
| ra222 | 9.056E-14 | 8.499E-14 | 7.360E-14 | 4.198E-14 | 8.598E-15 | 1.171E-15 | 2.543E-19 | 1.344E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 2.388E-11 | 2.388E-11 | 2.391E-11 | 2.437E-11 | 2.654E-11 | 2.949E-11 | 4.403E-11 | 6.177E-11 | 7.953E-11 | 9.735E-11 | 1.106E-10 | 1.129E-10 | 1.329E-10 | 1.507E-10 |
| ra224 | 1.548E-06 | 1.548E-06 | 1.556E-06 | 1.620E-06 | 1.854E-06 | 2.121E-06 | 3.322E-06 | 5.152E-06 | 6.937E-06 | 8.572E-06 | 9.662E-06 | 1.002E-05 | 1.122E-05 | 1.222E-05 |
| ra225 | 9.158E-13 | 9.157E-13 | 9.156E-13 | 9.158E-13 | 9.165E-13 | 9.175E-13 | 9.225E-13 | 9.252E-13 | 9.313E-13 | 9.376E-13 | 9.429E-13 | 9.443E-13 | 9.526E-13 | 9.610E-13 |
| ra226 | 5.633E-13 | 5.650E-13 | 5.689E-13 | 5.839E-13 | 6.275E-13 | 6.846E-13 | 9.597E-13 | 1.465E-12 | 2.117E-12 | 2.935E-12 | 3.660E-12 | 3.932E-12 | 5.127E-12 | 6.537E-12 |
| ra228 | 1.115E-17 | 1.116E-17 | 1.119E-17 | 1.127E-17 | 1.150E-17 | 1.179E-17 | 1.298E-17 | 1.461E-17 | 1.617E-17 | 1.767E-17 | 1.874E-17 | 1.910E-17 | 2.049E-17 | 2.184E-17 |
| ac225 | 4.594E-11 | 4.594E-11 | 4.592E-11 | 4.589E-11 | 4.588E-11 | 4.591E-11 | 4.610E-11 | 4.636E-11 | 4.665E-11 | 4.698E-11 | 4.724E-11 | 4.730E-11 | 4.773E-11 | 4.815E-11 |
| ac226 | 1.055E-19 | 9.739E-20 | 8.141E-20 | 4.055E-20 | 5.757E-21 | 5.068E-22 | 1.964E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 3.605E-13 | 3.619E-13 | 3.650E-13 | 3.772E-13 | 4.114E-13 | 4.539E-13 | 6.318E-13 | 8.865E-13 | 1.141E-12 | 1.397E-12 | 1.587E-12 | 1.652E-12 | 1.907E-12 | 2.162E-12 |
| ac228 | 1.357E-15 | 1.358E-15 | 1.361E-15 | 1.371E-15 | 1.400E-15 | 1.435E-15 | 1.579E-15 | 1.777E-15 | 1.967E-15 | 2.149E-15 | 2.280E-15 | 2.324E-15 | 2.493E-15 | 2.657E-15 |
| th226 | 8.747E-14 | 8.209E-14 | 7.109E-14 | 4.054E-14 | 8.305E-15 | 1.132E-15 | 2.456E-19 | 1.298E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 2.446E-11 | 2.456E-11 | 2.479E-11 | 2.565E-11 | 2.810E-11 | 3.114E-11 | 4.529E-11 | 6.354E-11 | 8.181E-11 | 1.001E-10 | 1.138E-10 | 1.161E-10 | 1.367E-10 | 1.550E-10 |
| th228 | 1.473E-06 | 1.481E-06 | 1.498E-06 | 1.566E-06 | 1.761E-06 | 2.015E-06 | 3.162E-06 | 4.904E-06 | 6.601E-06 | 8.156E-06 | 9.187E-06 | 9.514E-06 | 1.067E-05 | 1.162E-05 |
| th229 | 4.061E-11 | 4.061E-11 | 4.062E-11 | 4.063E-11 | 4.065E-11 | 4.068E-11 | 4.083E-11 | 4.106E-11 | 4.132E-11 | 4.161E-11 | 4.184E-11 | 4.192E-11 | 4.227E-11 | 4.265E-11 |
| th230 | 6.989E-10 | 7.003E-10 | 7.034E-10 | 7.156E-10 | 7.501E-10 | 7.940E-10 | 9.889E-10 | 1.301E-09 | 1.652E-09 | 2.043E-09 | 2.359E-09 | 2.472E-09 | 2.939E-09 | 3.444E-09 |
| th231 | 2.331E-08 | 2.331E-08 | 2.331E-08 | 2.331E-08 | 2.331E-08 | 2.332E-08 | 2.332E-08 | 2.333E-08 | 2.334E-08 | 2.335E-08 | 2.336E-08 | 2.336E-08 | 2.337E-08 | 2.338E-08 |
| th232 | 9.811E-15 | 9.813E-15 | 9.818E-15 | 9.836E-15 | 9.887E-15 | 9.951E-15 | 1.022E-14 | 1.060E-14 | 1.098E-14 | 1.136E-14 | 1.164E-14 | 1.174E-14 | 1.213E-14 | 1.251E-14 |
| th234 | 1.882E-06 | 1.882E-06 | 1.882E-06 | 1.882E-06 | 1.882E-06 | 1.882E-06 | 1.883E-06 | 1.882E-06 | 1.882E-06 | 1.882E-06 | 1.883E-06 | 1.882E-06 | 1.882E-06 | 1.882E-06 |

1

5 more years for cooling used fuel material actinides page 20

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 5.333E-15 | 4.925E-15 | 4.117E-15 | 2.050E-15 | 2.911E-16 | 2.563E-17 | 9.932E-22 | 4.811E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 4.949E-10 | 4.950E-10 | 4.952E-10 | 4.960E-10 | 4.981E-10 | 5.007E-10 | 5.113E-10 | 5.265E-10 | 5.417E-10 | 5.570E-10 | 5.684E-10 | 5.723E-10 | 5.875E-10 | 6.028E-10 |
| pa232 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 | 6.436E-13 |
| pa233 | 5.056E-06 | 5.056E-06 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 2.490E-04 | 2.489E-04 | 2.488E-04 | 2.482E-04 | 2.466E-04 | 2.446E-04 | 2.365E-04 | 2.253E-04 | 2.146E-04 | 2.044E-04 | 1.972E-04 | 1.948E-04 | 1.855E-04 | 1.768E-04 |
| u238 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 | 1.207E-04 |
| u240 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 | 3.253E-11 |
| np235 | 5.129E-09 | 5.111E-09 | 5.071E-09 | 4.918E-09 | 4.514E-09 | 4.057E-09 | 2.597E-09 | 1.371E-09 | 7.240E-10 | 3.816E-10 | 2.371E-10 | 2.015E-10 | 1.064E-10 | 5.619E-11 |
| np236 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 | 1.150E-10 |
| np237 | 6.031E-05 | 6.031E-05 | 6.031E-05 | 6.032E-05 | 6.033E-05 | 6.036E-05 | 6.050E-05 | 6.076E-05 | 6.110E-05 | 6.151E-05 | 6.186E-05 | 6.199E-05 | 6.253E-05 | 6.314E-05 |
| np238 | 1.017E-05 | 1.017E-05 | 1.017E-05 | 1.017E-05 | 1.016E-05 | 1.015E-05 | 1.012E-05 | 1.007E-05 | 1.002E-05 | 9.969E-06 | 9.933E-06 | 9.920E-06 | 9.872E-06 | 9.823E-06 |
| np239 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.032E-03 | 3.031E-03 | 3.031E-03 | 3.031E-03 | 3.031E-03 | 3.031E-03 | 3.030E-03 |
| np240m | 2.367E-10 | 2.369E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 | 2.367E-10 |
| np240 | 4.805E-13 | 4.809E-13 | 4.806E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 | 4.805E-13 |
| pu236 | 2.959E-04 | 2.955E-04 | 2.946E-04 | 2.912E-04 | 2.819E-04 | 2.707E-04 | 2.285E-04 | 1.793E-04 | 1.407E-04 | 1.104E-04 | 9.213E-05 | 8.661E-05 | 6.797E-05 | 5.334E-05 |
| pu237 | 1.170E-06 | 1.135E-06 | 1.060E-06 | 8.128E-07 | 3.862E-07 | 1.529E-07 | 3.181E-09 | 1.245E-11 | 4.871E-14 | 1.877E-16 | 3.016E-18 | 7.347E-19 | 2.875E-21 | 1.125E-23 |
| pu238 | 1.645E+00 | 1.646E+00 | 1.649E+00 | 1.660E+00 | 1.685E+00 | 1.710E+00 | 1.761E+00 | 1.771E+00 | 1.762E+00 | 1.750E+00 | 1.740E+00 | 1.736E+00 | 1.723E+00 | 1.709E+00 |
| pu239 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.004E-01 | 3.003E-01 | 3.003E-01 | 3.003E-01 | 3.003E-01 | 3.003E-01 |
| pu240 | 6.064E-01 | 6.064E-01 | 6.064E-01 | 6.065E-01 | 6.066E-01 | 6.067E-01 | 6.072E-01 | 6.079E-01 | 6.085E-01 | 6.091E-01 | 6.096E-01 | 6.097E-01 | 6.103E-01 | 6.109E-01 |
| pu241 | 1.763E-01 | 1.762E-01 | 1.761E-01 | 1.757E-01 | 1.746E-01 | 1.732E-01 | 1.674E-01 | 1.595E-01 | 1.519E-01 | 1.447E-01 | 1.396E-01 | 1.379E-01 | 1.314E-01 | 1.251E-01 |
| pu242 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 | 2.563E-03 |
| pu243 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 | 5.249E-11 |
| pu244 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 | 1.185E-09 |
| pu246 | 2.572E-16 | 2.572E-16 | 2.572E-16 | 2.572E-16 | 2.572E-16 | 2.572E-16 | 2.572E-16 | 2.571E-16 | 2.571E-16 | 2.571E-16 | 2.571E-16 | 2.571E-16 | 2.570E-16 | 2.570E-16 |
| am241 | 4.770E-01 | 4.786E-01 | 4.822E-01 | 4.964E-01 | 5.358E-01 | 5.846E-01 | 7.840E-01 | 1.057E+00 | 1.318E+00 | 1.565E+00 | 1.742E+00 | 1.800E+00 | 2.024E+00 | 2.236E+00 |
| am242m | 1.853E-04 | 1.853E-04 | 1.853E-04 | 1.853E-04 | 1.851E-04 | 1.850E-04 | 1.843E-04 | 1.834E-04 | 1.825E-04 | 1.816E-04 | 1.810E-04 | 1.808E-04 | 1.799E-04 | 1.790E-04 |
| am242 | 5.181E-04 | 5.181E-04 | 5.180E-04 | 5.179E-04 | 5.176E-04 | 5.171E-04 | 5.154E-04 | 5.128E-04 | 5.103E-04 | 5.078E-04 | 5.060E-04 | 5.053E-04 | 5.029E-04 | 5.004E-04 |
| am243 | 4.067E-02 | 4.067E-02 | 4.067E-02 | 4.067E-02 | 4.067E-02 | 4.067E-02 | 4.067E-02 | 4.066E-02 | 4.066E-02 | 4.066E-02 | 4.065E-02 | 4.065E-02 | 4.065E-02 | 4.064E-02 |
| am244 | 1.187E-12 | 1.186E-12 | 1.186E-12 | 1.181E-12 | 1.169E-12 | 1.154E-12 | 1.095E-12 | 1.012E-12 | 9.372E-13 | 8.675E-13 | 8.192E-13 | 7.437E-13 | 6.886E-13 | 6.286E-13 |
| am245 | 1.740E-11 | 1.733E-11 | 1.716E-11 | 1.652E-11 | 1.486E-11 | 1.302E-11 | 7.494E-12 | 3.399E-12 | 1.542E-12 | 6.977E-13 | 3.871E-13 | 3.164E-13 | 1.435E-13 | 6.510E-14 |
| am246m | 1.559E-15 | 1.561E-15 | 1.560E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.558E-15 | 1.558E-15 | 1.558E-15 | 1.558E-15 | 1.558E-15 | 1.558E-15 | 1.558E-15 |
| cm240 | 3.145E-10 | 2.987E-10 | 2.661E-10 | 1.698E-10 | 4.827E-11 | 1.008E-11 | 1.447E-14 | 1.233E-18 | 1.051E-22 | 8.726E-27 | 8.094E-30 | 7.435E-31 | 0.000E+00 | 0.000E+00 |
| cm241 | 3.412E-08 | 3.271E-08 | 2.975E-08 | 2.055E-08 | 7.296E-09 | 2.010E-09 | 9.181E-12 | 4.102E-15 | 1.833E-18 | 8.017E-22 | 2.557E-24 | 3.582E-25 | 1.600E-28 | 7.150E-32 |
| cm242 | 3.516E+01 | 3.487E+01 | 3.420E+01 | 3.175E+01 | 2.578E+01 | 1.989E+01 | 6.731E+00 | 1.435E+00 | 3.144E-01 | 7.677E-02 | 3.322E-02 | 2.669E-02 | 1.604E-02 | 1.373E-02 |
| cm243 | 4.566E-02 | 4.565E-02 | 4.564E-02 | 4.559E-02 | 4.544E-02 | 4.526E-02 | 4.452E-02 | 4.347E-02 | 4.245E-02 | 4.144E-02 | 4.072E-02 | 4.047E-02 | 3.952E-02 | 3.859E-02 |
| cm244 | 8.401E+00 | 8.399E+00 | 8.391E+00 | 8.380E+00 | 8.337E+00 | 8.284E+00 | 8.066E+00 | 7.763E+00 | 7.472E+00 | 7.191E+00 | 6.988E+00 | 6.921E+00 | 6.661E+00 | 6.411E+00 |
| cm245 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.761E-03 | 1.760E-03 | 1.760E-03 | 1.760E-03 | 1.760E-03 | 1.760E-03 |
| cm246 | 2.812E-04 | 2.812E-04 | 2.812E-04 | 2.812E-04 | 2.812E-04 | 2.812E-04 | 2.811E-04 | 2.811E-04 | 2.811E-04 | 2.810E-04 | 2.810E-04 | 2.810E-04 | 2.809E-04 | 2.809E-04 |
| cm247 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 | 1.461E-09 |
| cm248 | 4.601E-09 | 4.601E-09 | 4.601E-09 | 4.601E-09 | 4.601E-09 | 4.601E-09 | 4.602E-09 | 4.603E-09 | 4.604E-09 | 4.604E-09 | 4.605E-09 | 4.605E-09 | 4.605E-09 | 4.605E-09 |
| cm249 | 1.196E-15 | 1.106E-15 | 9.287E-16 | 4.700E-16 | 6.980E-17 | 6.499E-18 | 3.182E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 8.309E-13 | 8.309E-13 | 8.309E-13 | 8.309E-13 | 8.309E-13 | 8.309E-13 | 8.309E-13 | 8.308E-13 | 8.308E-13 | 8.307E-13 | 8.307E-13 | 8.306E-13 | 8.306E-13 | 8.305E-13 |
| bk247 | 1.009E-15 | 1.009E-15 | 1.009E-15 | 1.009E-15 | 1.008E-15 | 1.008E-15 | 1.008E-15 | 1.008E-15 | 1.007E-15 | 1.007E-15 | 1.006E-15 | 1.006E-15 | 1.005E-15 | 1.005E-15 |
| bk248 | 6.095E-12 | 6.092E-12 | 6.086E-12 | 6.064E-12 | 6.002E-12 | 5.925E-12 | 5.615E-12 | 5.199E-12 | 4.813E-12 | 4.456E-12 | 4.207E-12 | 4.125E-12 | 3.820E-12 | 3.536E-12 |

1

5 more years for cooling used fuel material actinides page 21

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 1.231E-07 | 1.225E-07 | 1.213E-07 | 1.168E-07 | 1.051E-07 | 9.205E-08 | 5.298E-08 | 2.403E-08 | 1.090E-08 | 4.933E-09 | 2.737E-09 | 2.237E-09 | 1.015E-09 | 4.603E-10 |
| bk250 | 7.407E-12 | 7.370E-12 | 7.287E-12 | 6.973E-12 | 6.165E-12 | 5.289E-12 | 2.788E-12 | 1.113E-12 | 4.450E-13 | 1.776E-13 | 8.992E-14 | 7.129E-14 | 2.881E-14 | 1.185E-14 |
| bk251 | 3.716E-15 | 3.588E-15 | 3.318E-15 | 2.446E-15 | 1.042E-15 | 3.602E-16 | 4.244E-18 | 7.363E-21 | 1.277E-23 | 2.178E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 4.686E-11 | 4.666E-11 | 4.623E-11 | 4.458E-11 | 4.026E-11 | 3.547E-11 | 2.088E-11 | 9.777E-12 | 4.578E-12 | 2.140E-12 | 1.216E-12 | 1.002E-12 | 4.693E-13 | 2.198E-13 |
| cf249 | 5.842E-08 | 5.868E-08 | 5.925E-08 | 6.142E-08 | 6.707E-08 | 7.331E-08 | 9.203E-08 | 1.058E-07 | 1.119E-07 | 1.146E-07 | 1.154E-07 | 1.156E-07 | 1.160E-07 | 1.160E-07 |
| cf250 | 8.969E-07 | 8.967E-07 | 8.961E-07 | 8.938E-07 | 8.875E-07 | 8.797E-07 | 8.477E-07 | 8.040E-07 | 7.625E-07 | 7.231E-07 | 6.951E-07 | 6.858E-07 | 6.504E-07 | 6.169E-07 |
| cf251 | 6.758E-09 | 6.758E-09 | 6.758E-09 | 6.758E-09 | 6.757E-09 | 6.756E-09 | 6.753E-09 | 6.748E-09 | 6.742E-09 | 6.737E-09 | 6.733E-09 | 6.732E-09 | 6.727E-09 | 6.722E-09 |
| cf252 | 1.881E-06 | 1.878E-06 | 1.872E-06 | 1.849E-06 | 1.785E-06 | 1.709E-06 | 1.423E-06 | 1.095E-06 | 8.428E-07 | 6.482E-07 | 5.332E-07 | 4.988E-07 | 3.839E-07 | 2.954E-07 |
| cf253 | 1.468E-13 | 1.358E-13 | 1.140E-13 | 5.767E-14 | 8.565E-15 | 7.974E-16 | 3.905E-20 | 2.644E-26 | 1.790E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 2.361E-09 | 2.308E-09 | 2.192E-09 | 1.794E-09 | 1.023E-09 | 5.087E-10 | 2.739E-11 | 4.183E-13 | 6.387E-15 | 9.643E-17 | 4.274E-18 | 1.472E-18 | 2.249E-20 | 3.434E-22 |
| es252 | 4.813E-15 | 4.799E-15 | 4.767E-15 | 4.646E-15 | 4.323E-15 | 3.953E-15 | 2.717E-15 | 1.589E-15 | 9.295E-16 | 5.428E-16 | 3.640E-16 | 3.175E-16 | 1.857E-16 | 1.086E-16 |
| es253 | 1.548E-10 | 1.452E-10 | 1.257E-10 | 7.163E-11 | 1.458E-11 | 1.962E-12 | 3.895E-16 | 1.726E-21 | 7.402E-27 | 3.069E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 4.087E-11 | 4.067E-11 | 4.021E-11 | 3.848E-11 | 3.402E-11 | 2.918E-11 | 1.537E-11 | 6.140E-12 | 2.453E-12 | 9.772E-13 | 4.932E-13 | 3.903E-13 | 1.559E-13 | 6.228E-14 |
| es255 | 5.576E-14 | 7.317E-14 | 6.765E-14 | 4.988E-14 | 2.125E-14 | 7.344E-15 | 8.654E-17 | 1.501E-19 | 2.605E-22 | 4.441E-25 | 3.892E-27 | 7.704E-28 | 1.337E-30 | 2.319E-33 |
| total | 4.686E+01 | 4.657E+01 | 4.591E+01 | 4.347E+01 | 3.751E+01 | 3.164E+01 | 1.851E+01 | 1.319E+01 | 1.202E+01 | 1.173E+01 | 1.164E+01 | 1.162E+01 | 1.155E+01 | 1.149E+01 |

1

5 more years for cooling used fuel material actinides page 22

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 3.823E-07 | 3.839E-07 | 3.847E-07 | 4.000E-07 | 4.580E-07 | 5.238E-07 | 8.205E-07 | 1.272E-06 | 1.713E-06 | 2.117E-06 | 2.386E-06 | 2.474E-06 | 2.770E-06 | 3.019E-06 |
| pb | 8.411E-08 | 8.408E-08 | 8.463E-08 | 8.801E-08 | 1.008E-07 | 1.153E-07 | 1.805E-07 | 2.799E-07 | 3.769E-07 | 4.658E-07 | 5.250E-07 | 5.443E-07 | 6.095E-07 | 6.642E-07 |
| bi | 7.557E-07 | 7.589E-07 | 7.605E-07 | 7.908E-07 | 9.053E-07 | 1.035E-06 | 1.622E-06 | 2.515E-06 | 3.386E-06 | 4.185E-06 | 4.717E-06 | 4.890E-06 | 5.476E-06 | 5.967E-06 |
| po | 3.381E-06 | 3.387E-06 | 3.400E-06 | 3.537E-06 | 4.050E-06 | 4.632E-06 | 7.256E-06 | 1.125E-05 | 1.515E-05 | 1.872E-05 | 2.110E-05 | 2.187E-05 | 2.449E-05 | 2.669E-05 |
| at | 5.571E-11 | 5.572E-11 | 5.570E-11 | 5.565E-11 | 5.564E-11 | 5.568E-11 | 5.590E-11 | 5.622E-11 | 5.657E-11 | 5.697E-11 | 5.729E-11 | 5.736E-11 | 5.788E-11 | 5.839E-11 |
| rn | 1.713E-06 | 1.713E-06 | 1.722E-06 | 1.792E-06 | 2.052E-06 | 2.347E-06 | 3.676E-06 | 5.699E-06 | 7.674E-06 | 9.484E-06 | 1.069E-05 | 1.108E-05 | 1.241E-05 | 1.352E-05 |
| fr | 5.043E-11 | 5.043E-11 | 5.041E-11 | 5.037E-11 | 5.036E-11 | 5.040E-11 | 5.062E-11 | 5.092E-11 | 5.126E-11 | 5.163E-11 | 5.194E-11 | 5.200E-11 | 5.249E-11 | 5.297E-11 |
| ra | 1.548E-06 | 1.548E-06 | 1.556E-06 | 1.620E-06 | 1.854E-06 | 2.121E-06 | 3.323E-06 | 5.152E-06 | 6.937E-06 | 8.572E-06 | 9.662E-06 | 1.002E-05 | 1.122E-05 | 1.222E-05 |
| ac | 4.630E-11 | 4.630E-11 | 4.629E-11 | 4.627E-11 | 4.629E-11 | 4.637E-11 | 4.673E-11 | 4.725E-11 | 4.779E-11 | 4.838E-11 | 4.883E-11 | 4.895E-11 | 4.964E-11 | 5.032E-11 |
| th | 3.379E-06 | 3.387E-06 | 3.404E-06 | 3.472E-06 | 3.668E-06 | 3.922E-06 | 5.070E-06 | 6.811E-06 | 8.508E-06 | 1.006E-05 | 1.110E-05 | 1.142E-05 | 1.258E-05 | 1.353E-05 |
| pa | 2.858E-05 | 2.858E-05 | 2.858E-05 | 2.859E-05 | 2.859E-05 | 2.859E-05 | 2.859E-05 | 2.862E-05 | 2.865E-05 | 2.869E-05 | 2.872E-05 | 2.872E-05 | 2.882E-05 | 2.888E-05 |
| u | 4.122E-04 | 4.122E-04 | 4.121E-04 | 4.118E-04 | 4.111E-04 | 4.103E-04 | 4.067E-04 | 4.016E-04 | 3.967E-04 | 3.919E-04 | 3.884E-04 | 3.873E-04 | 3.829E-04 | 3.788E-04 |
| np | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 | 3.103E-03 |
| pu | 2.731E+00 | 2.732E+00 | 2.735E+00 | 2.745E+00 | 2.770E+00 | 2.793E+00 | 2.839E+00 | 2.842E+00 | 2.826E+00 | 2.807E+00 | 2.792E+00 | 2.787E+00 | 2.767E+00 | 2.748E+00 |
| am | 5.183E-01 | 5.200E-01 | 5.236E-01 | 5.378E-01 | 5.772E-01 | 6.260E-01 | 8.254E-01 | 1.099E+00 | 1.359E+00 | 1.607E+00 | 1.783E+00 | 1.842E+00 | 2.065E+00 | 2.278E+00 |
| cm | 4.361E+01 | 4.331E+01 | 4.265E+01 | 4.018E+01 | 3.416E+01 | 2.822E+01 | 1.484E+01 | 9.244E+00 | 7.831E+00 | 7.311E+00 | 7.064E+00 | 6.990E+00 | 6.719E+00 | 6.465E+00 |
| bk | 1.231E-07 | 1.225E-07 | 1.213E-07 | 1.168E-07 | 1.051E-07 | 9.206E-08 | 5.299E-08 | 2.404E-08 | 1.090E-08 | 4.938E-09 | 2.741E-09 | 2.242E-09 | 1.019E-09 | 4.638E-10 |
| cf | 2.846E-06 | 2.843E-06 | 2.837E-06 | 2.813E-06 | 2.748E-06 | 2.669E-06 | 2.370E-06 | 2.012E-06 | 1.724E-06 | 1.493E-06 | 1.351E-06 | 1.307E-06 | 1.157E-06 | 1.035E-06 |
| es | 1.958E-10 | 1.860E-10 | 1.660E-10 | 1.102E-10 | 4.863E-11 | 3.116E-11 | 1.537E-11 | 6.141E-12 | 2.453E-12 | 9.777E-13 | 4.935E-13 | 3.907E-13 | 1.561E-13 | 6.239E-14 |
| totals | 4.686E+01 | 4.657E+01 | 4.591E+01 | 4.347E+01 | 3.751E+01 | 3.164E+01 | 1.851E+01 | 1.319E+01 | 1.202E+01 | 1.173E+01 | 1.164E+01 | 1.162E+01 | 1.155E+01 | 1.149E+01 |

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5 more years for cooling used fuel material fission products page 23

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.023E-03 | 1.023E-03 | 1.022E-03 | 1.019E-03 | 1.012E-03 | 1.002E-03 | 9.635E-04 | 9.108E-04 | 8.610E-04 | 8.138E-04 | 7.804E-04 | 7.693E-04 | 7.273E-04 | 6.875E-04 |
| he 3 | 5.634E-05 | 5.666E-05 | 5.737E-05 | 6.012E-05 | 6.778E-05 | 7.724E-05 | 1.158E-04 | 1.685E-04 | 2.183E-04 | 2.655E-04 | 2.989E-04 | 3.100E-04 | 3.521E-04 | 3.918E-04 |
| he 4 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 | 2.169E-02 |
| cu 65 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 | 7.320E-09 |
| zn 66 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 | 2.349E-06 |
| zn 67 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 | 6.623E-06 |
| zn 68 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 | 1.286E-05 |
| ga 69 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 | 2.428E-05 |
| zn 70 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 | 5.589E-05 |
| ge 70 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 | 3.253E-07 |
| ga 71 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 | 1.029E-04 |
| ge 71 | 3.050E-17 | 2.702E-17 | 2.057E-17 | 7.117E-18 | 3.646E-19 | 9.020E-21 | 1.735E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 72 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 | 2.460E-04 |
| ge 73 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 | 5.052E-04 |
| ge 73m | 1.521E-19 | 1.495E-19 | 1.438E-19 | 1.237E-19 | 8.100E-20 | 4.784E-20 | 5.285E-21 | 2.267E-22 | 9.710E-24 | 4.122E-25 | 3.940E-26 | 1.765E-26 | 7.559E-28 | 3.387E-29 |
| as 73 | 2.115E-12 | 2.079E-12 | 2.000E-12 | 1.719E-12 | 1.126E-12 | 6.652E-13 | 7.362E-14 | 3.153E-15 | 1.350E-16 | 5.731E-18 | 5.477E-19 | 2.454E-19 | 1.051E-20 | 4.501E-22 |
| ge 74 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 | 1.189E-03 |
| as 74 | 5.728E-14 | 5.298E-14 | 4.445E-14 | 2.246E-14 | 3.321E-15 | 3.076E-16 | 1.473E-20 | 9.657E-27 | 6.332E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 74 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 | 5.272E-09 |
| as 75 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 | 2.341E-03 |
| se 75 | 1.360E-10 | 1.344E-10 | 1.310E-10 | 1.183E-10 | 8.913E-11 | 6.262E-11 | 1.432E-11 | 1.732E-12 | 2.096E-13 | 2.522E-14 | 5.226E-15 | 3.051E-15 | 3.691E-16 | 4.466E-17 |
| ge 76 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 | 5.303E-03 |
| se 76 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 |
| se 77 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 | 1.228E-02 |
| se 78 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 | 3.578E-02 |
| kr 78 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 | 2.709E-15 |
| se 79 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 | 7.521E-02 |
| br 79 | 4.117E-05 | 4.117E-05 | 4.117E-05 | 4.118E-05 | 4.121E-05 | 4.124E-05 | 4.136E-05 | 4.154E-05 | 4.171E-05 | 4.189E-05 | 4.202E-05 | 4.207E-05 | 4.224E-05 | 4.242E-05 |
| se 80 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 | 1.747E-01 |
| kr 80 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 | 7.224E-06 |
| br 81 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 |
| kr 81 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 | 6.179E-07 |
| se 82 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 | 4.621E-01 |
| kr 82 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 | 1.384E-02 |
| kr 83 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 | 5.160E-01 |
| kr 83m | 6.344E-13 | 6.243E-13 | 6.021E-13 | 5.230E-13 | 3.527E-13 | 2.160E-13 | 2.779E-14 | 1.476E-15 | 7.844E-17 | 4.134E-18 | 4.639E-19 | 2.196E-19 | 1.167E-20 | 6.199E-22 |
| kr 83 | 9.648E-10 | 9.494E-10 | 9.157E-10 | 7.955E-10 | 5.364E-10 | 3.285E-10 | 4.226E-11 | 2.245E-12 | 1.193E-13 | 6.287E-15 | 7.056E-16 | 3.340E-16 | 1.775E-17 | 9.428E-19 |
| kr 84 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 | 1.262E+00 |
| rb 84 | 1.527E-09 | 1.464E-09 | 1.331E-09 | 9.197E-10 | 3.267E-10 | 9.009E-11 | 4.128E-13 | 1.853E-16 | 8.319E-20 | 3.656E-23 | 1.170E-25 | 1.641E-26 | 7.367E-30 | 3.307E-33 |
| sr 84 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 | 1.201E-07 |
| kr 85 | 2.531E-01 | 2.530E-01 | 2.528E-01 | 2.520E-01 | 2.498E-01 | 2.472E-01 | 2.363E-

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 89 | 4.246E+00 | 4.246E+00 | 4.247E+00 | 4.248E+00 | 4.252E+00 | 4.253E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 | 4.255E+00 |
| y 89m | 3.195E-12 | 3.108E-12 | 2.922E-12 | 2.299E-12 | 1.174E-12 | 5.083E-13 | 1.538E-14 | 1.029E-16 | 6.886E-19 | 4.545E-21 | 1.089E-22 | 3.041E-23 | 2.035E-25 | 1.362E-27 |
| sr 90 | 4.957E+00 | 4.957E+00 | 4.955E+00 | 4.949E+00 | 4.933E+00 | 4.914E+00 | 4.832E+00 | 4.717E+00 | 4.605E+00 | 4.495E+00 | 4.415E+00 | 4.388E+00 | 4.284E+00 | 4.182E+00 |
| y 90 | 1.257E-03 | 1.257E-03 | 1.257E-03 | 1.255E-03 | 1.251E-03 | 1.246E-03 | 1.226E-03 | 1.197E-03 | 1.168E-03 | 1.140E-03 | 1.120E-03 | 1.113E-03 | 1.087E-03 | 1.061E-03 |
| zr 90 | 2.769E-01 | 2.775E-01 | 2.790E-01 | 2.847E-01 | 3.007E-01 | 3.205E-01 | 4.024E-01 | 5.173E-01 | 6.295E-01 | 7.393E-01 | 8.192E-01 | 8.462E-01 | 9.505E-01 | 1.052E+00 |
| y 91 | 2.471E-02 | 2.413E-02 | 2.288E-02 | 1.860E-02 | 1.041E-02 | 5.052E-03 | 2.493E-04 | 3.263E-06 | 4.322E-08 | 5.657E-10 | 2.255E-11 | 7.494E-12 | 9.926E-14 | 1.315E-15 |
| zr 91 | 6.167E+00 | 6.167E+00 | 6.169E+00 | 6.173E+00 | 6.181E+00 | 6.187E+00 | 6.191E+00 | 6.192E+00 | 6.192E+00 | 6.192E+00 | 6.192E+00 | 6.192E+00 | 6.192E+00 | 6.192E+00 |
| nb 91 | 1.351E-10 | 1.351E-10 | 1.351E-10 | 1.351E-10 | 1.351E-10 | 1.351E-10 | 1.350E-10 | 1.349E-10 | 1.347E-10 | 1.346E-10 | 1.345E-10 | 1.344E-10 | 1.343E-10 | 1.342E-10 |
| nb 91m | 1.104E-16 | 1.079E-16 | 1.026E-16 | 8.402E-17 | 4.809E-17 | 2.400E-17 | 1.315E-18 | 2.059E-20 | 3.222E-22 | 4.987E-24 | 2.251E-25 | 7.806E-26 | 1.222E-27 | 1.913E-29 |
| zr 92 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 | 7.458E+00 |
| nb 92 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 | 1.169E-08 |
| nb 92m | 1.193E-19 | 1.040E-19 | 7.650E-20 | 2.316E-20 | 8.155E-22 | 1.265E-23 | 3.462E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo 92 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 | 9.408E-14 |
| zr 93 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 | 9.150E+00 |
| nb 93 | 1.438E-06 | 1.440E-06 | 1.446E-06 | 1.469E-06 | 1.536E-06 | 1.623E-06 | 2.032E-06 | 2.745E-06 | 3.602E-06 | 4.600E-06 | 5.428E-06 | 5.728E-06 | 6.983E-06 | 8.359E-06 |
| nb 93m | 8.643E-06 | 8.663E-06 | 8.708E-06 | 8.883E-06 | 9.373E-06 | 9.979E-06 | 1.246E-05 | 1.589E-05 | 1.918E-05 | 2.233E-05 | 2.459E-05 | 2.535E-05 | 2.824E-05 | 3.100E-05 |
| mo 93 | 6.288E-09 | 6.288E-09 | 6.288E-09 | 6.288E-09 | 6.287E-09 | 6.287E-09 | 6.286E-09 | 6.285E-09 | 6.284E-09 | 6.283E-09 | 6.282E-09 | 6.282E-09 | 6.281E-09 | 6.280E-09 |
| zr 94 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 | 1.046E+01 |
| nb 94 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.460E-05 | 4.459E-05 | 4.459E-05 | 4.459E-05 | 4.459E-05 | 4.459E-05 | 4.459E-05 |
| mo 94 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 | 2.102E-04 |
| zr 95 | 6.527E-02 | 6.387E-02 | 6.084E-02 | 5.034E-02 | 2.962E-02 | 1.530E-02 | 5.883E-04 | 1.862E-06 | 3.581E-07 | 6.813E-09 | 3.586E-10 | 1.310E-10 | 2.520E-12 | 4.846E-14 |
| nb 95 | 7.362E-02 | 7.213E-02 | 6.889E-02 | 5.753E-02 | 3.450E-02 | 1.808E-02 | 1.164E-03 | 2.314E-05 | 4.457E-07 | 8.477E-09 | 4.330E-10 | 1.580E-10 | 3.133E-12 | 6.032E-14 |
| nb 95m | 4.212E-05 | 4.122E-05 | 3.926E-05 | 3.249E-05 | 1.912E-05 | 9.876E-06 | 6.248E-07 | 1.202E-08 | 2.311E-10 | 4.397E-12 | 2.314E-13 | 8.456E-14 | 1.626E-15 | 3.128E-17 |
| mo 95 | 1.081E+01 | 1.081E+01 | 1.082E+01 | 1.084E+01 | 1.088E+01 | 1.091E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 | 1.095E+01 |
| tc 95 | 9.566E-20 | 9.351E-20 | 8.885E-20 | 7.283E-20 | 4.173E-20 | 2.087E-20 | 1.151E-21 | 1.819E-23 | 2.874E-25 | 4.491E-27 | 2.042E-28 | 7.097E-29 | 1.121E-30 | 0.000E+00 |
| tc 95m | 1.780E-16 | 1.740E-16 | 1.653E-16 | 1.355E-16 | 7.765E-17 | 3.883E-17 | 2.142E-18 | 3.384E-20 | 5.348E-22 | 8.356E-24 | 3.799E-25 | 1.321E-25 | 2.087E-27 | 3.298E-29 |
| zr 96 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 | 1.224E+01 |
| mo 96 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 | 7.003E-01 |
| ru 96 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 | 2.599E-15 |
| mo 97 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 |
| tc 97 | 1.479E-07 | 1.480E-07 | 1.480E-07 | 1.482E-07 | 1.485E-07 | 1.488E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 | 1.493E-07 |
| tc 97m | 1.474E-09 | 1.452E-09 | 1.403E-09 | 1.228E-09 | 8.452E-10 | 5.311E-10 | 7.614E-11 | 4.723E-12 | 2.929E-13 | 1.803E-14 | 2.271E-15 | 1.118E-15 | 6.936E-17 | 4.302E-18 |
| mo 98 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 | 1.448E+01 |
| tc 98 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 | 1.535E-04 |
| ru 98 | 2.655E-08 | 2.655E-08 | 2.665E-08 | 2.655E-08 | 2.656E-08 | 2.656E-08 | 2.658E-08 | 2.660E-08 | 2.663E-08 | 2.665E-08 | 2.667E-08 | 2.668E-08 | 2.670E-08 | 2.673E-08 |
| tc 99 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 |
| ru 99 | 5.727E-04 | 5.730E-04 | 5.735E-04 | 5.756E-04 | 5.815E-04 | 5.888E-04 | 6.194E-04 | 6.633E-04 | 7.071E-04 | 7.510E-04 | 7.837E-04 | 7.949E-04 | 8.387E-04 | 8.825E-04 |
| mo100 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 | 1.704E+01 |
| ru100 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 | 2.447E+00 |
| ru101 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 | 1.466E+01 |
| rh101 | 7.760E-09 | 7.751E-09 | 7.731E-09 | 7.654E-09 | 7.441E-09 | 7.184E-09 | 6.205E-09 | 5.030E-09 | 4.077E-09 | 3.304E-09 | 2.825E-09 | 2.678E-09 | 2.171E-09 | 1.760E-09 |
| ru102 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 | 1.715E+01 |
| rh102 | 1.178E-05 | 1.170E-05 | 1.153E-05 | 1.087E-05 | 9.229E-06 | 7.528E-06 | 3.214E-06 | 9.534E-07 | 2.855E-07 | 8.740E-08 | 3.770E-08 | 2.866E-08 | 1.083E-08 | 5.167E-09 |
| rh102m | 2.717E-05 | 2.714E-05 | 2.708E-05 | 2.684E-05 | 2.618E-05 | 2.538E-05 | 2.230E-05 | 1.853E-05 | 1.540E-05 | 1.279E-05 | 1.114E-05 | 1.063E-05 | 8.834E-06 | 7.341E-06 |
| pd102 | 1.279E-05 | 1.280E-05 | 1.284E-05 | 1.299E-05 | 1.335E-05 | 1.372E-05 | 1.467E-05 | 1.517E-05 | 1.532E-05 | 1.537E-05 | 1.538E-05 | 1.538E-05 | 1.538E-05 | 1.539E-05 |
| ru103 | 1.224E-02 | 1.182E-02 | 1.091E-02 | 8.012E-03 | 3.372E-03 | 1.148E-03 | 1.271E-05 | 2.016E-08 | 3.198E-11 | 4.984E-14 | 4.086E-16 | 7.906E-17 | 1.254E-19 | 1.989E-22 |
| rh103 | 1.165E+01 | 1.165E+01 | 1.165E+01 | 1.166E+01 | 1.166E+01 | 1.166E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 |
| rh103m | 1.202E-05 | 1.161E-05 | 1.072E-05 | 7.869E-06 | 3.312E-06 | 1.128E-06 | 1.248E-08 | 1.980E-11 | 3.141E-14 | 4.895E-17 | 4.013E-19 | 7.765E-20 | 1.232E-22 | 1.954E-25 |
| pd103 | 1.145E-10 | 1.055E-10 | 8.785E-11 | 4.302E-11 | 5.828E-12 | 4.839E-13 | 1.469E-17 | 5.014E-24 | 1.711E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ru104 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 | 1.600E+01 |
| pd104 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 | 6.139E+00 |
| pd105 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 | 1.269E+01 |

1



0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag105 | 1.658E-16 | 1.603E-16 | 1.487E-16 | 1.108E-16 | 4.868E-17 | 1.748E-17 | 2.418E-19 | 5.277E-22 | 1.152E-24 | 2.471E-27 | 2.569E-29 | 5.393E-30 | 1.177E-32 | 2.568E-35 |
| ru106 | 3.101E+00 | 3.090E+00 | 3.064E+00 | 2.966E+00 | 2.707E+00 | 2.416E+00 | 1.502E+00 | 7.604E-01 | 3.850E-01 | 1.946E-01 | 1.172E-01 | 9.854E-02 | 4.990E-02 | 2.527E-02 |
| rh106 | 2.903E-06 | 2.892E-06 | 2.868E-06 | 2.776E-06 | 2.534E-06 | 2.261E-06 | 1.406E-06 | 7.118E-07 | 3.604E-07 | 1.822E-07 | 1.097E-07 | 9.225E-08 | 4.671E-08 | 2.365E-08 |
| pd106 | 1.051E+01 | 1.053E+01 | 1.055E+01 | 1.065E+01 | 1.091E+01 | 1.120E+01 | 1.211E+01 | 1.286E+01 | 1.323E+01 | 1.342E+01 | 1.350E+01 | 1.352E+01 | 1.357E+01 | 1.359E+01 |
| cd106 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 | 4.486E-15 |
| pd107 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 | 8.355E+00 |
| ag107 | 1.890E-06 | 1.895E-06 | 1.906E-06 | 1.949E-06 | 2.069E-06 | 2.217E-06 | 2.839E-06 | 3.730E-06 | 4.620E-06 | 5.513E-06 | 6.177E-06 | 6.403E-06 | 7.294E-06 | 8.184E-06 |
| pd108 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 | 5.824E+00 |
| ag108 | 8.851E-15 | 8.851E-15 | 8.850E-15 | 8.850E-15 | 8.848E-15 | 8.846E-15 | 8.836E-15 | 8.822E-15 | 8.808E-15 | 8.794E-15 | 8.784E-15 | 8.780E-15 | 8.766E-15 | 8.752E-15 |
| ag108m | 9.838E-06 | 9.838E-06 | 9.838E-06 | 9.837E-06 | 9.835E-06 | 9.833E-06 | 9.822E-06 | 9.806E-06 | 9.791E-06 | 9.775E-06 | 9.764E-06 | 9.760E-06 | 9.744E-06 | 9.729E-06 |
| cd108 | 2.114E-05 | 2.114E-05 | 2.114E-05 | 2.114E-05 | 2.114E-05 | 2.114E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 | 2.115E-05 |
| ag109 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 |
| ag109m | 3.157E-12 | 3.148E-12 | 3.127E-12 | 3.046E-12 | 2.829E-12 | 2.582E-12 | 1.760E-12 | 1.017E-12 | 5.878E-13 | 3.392E-13 | 2.254E-13 | 1.960E-13 | 1.133E-13 | 6.546E-14 |
| cd109 | 3.178E-06 | 3.169E-06 | 3.147E-06 | 3.066E-06 | 2.848E-06 | 2.599E-06 | 1.772E-06 | 1.024E-06 | 5.917E-07 | 3.414E-07 | 2.269E-07 | 1.973E-07 | 1.140E-07 | 6.589E-08 |
| pd110 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 | 1.932E+00 |
| ag110 | 3.225E-10 | 3.207E-10 | 3.167E-10 | 3.017E-10 | 2.633E-10 | 2.223E-10 | 1.096E-10 | 3.979E-11 | 1.445E-11 | 5.232E-12 | 2.459E-12 | 1.900E-12 | 6.899E-13 | 2.505E-13 |
| ag110m | 2.080E-02 | 2.069E-02 | 2.043E-02 | 1.946E-02 | 1.699E-02 | 1.434E-02 | 7.067E-03 | 2.566E-03 | 9.319E-04 | 3.375E-04 | 1.586E-04 | 1.225E-04 | 4.450E-05 | 1.616E-05 |
| cd110 | 2.131E+00 | 2.131E+00 | 2.132E+00 | 2.133E+00 | 2.135E+00 | 2.138E+00 | 2.145E+00 | 2.149E+00 | 2.151E+00 | 2.152E+00 | 2.152E+00 | 2.152E+00 | 2.152E+00 | 2.152E+00 |
| ag111 | 1.840E-12 | 1.528E-12 | 1.005E-12 | 1.973E-13 | 2.066E-15 | 7.085E-18 | 3.520E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd111 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 | 9.329E-01 |
| cd112 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 | 4.429E-01 |
| sn112 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 | 3.796E-11 |
| cd113 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 | 4.079E-03 |
| cd113m | 5.940E-05 | 5.938E-05 | 5.934E-05 | 5.920E-05 | 5.882E-05 | 5.833E-05 | 5.637E-05 | 5.366E-05 | 5.109E-05 | 4.864E-05 | 4.689E-05 | 4.630E-05 | 4.408E-05 | 4.197E-05 |
| in113 | 8.617E-06 | 8.633E-06 | 8.669E-06 | 8.809E-06 | 9.197E-06 | 9.677E-06 | 1.164E-05 | 1.434E-05 | 1.691E-05 | 1.936E-05 | 2.111E-05 | 2.169E-05 | 2.391E-05 | 2.602E-05 |
| in113m | 5.870E-16 | 5.799E-16 | 5.644E-16 | 5.080E-16 | 3.782E-16 | 2.619E-16 | 5.638E-17 | 6.258E-18 | 6.946E-19 | 7.663E-20 | 1.489E-20 | 8.505E-21 | 9.440E-22 | 1.048E-22 |
| sn113 | 9.773E-13 | 9.656E-13 | 9.398E-13 | 8.458E-13 | 6.296E-13 | 4.360E-13 | 9.388E-14 | 1.042E-14 | 1.156E-15 | 1.276E-16 | 2.480E-17 | 1.416E-17 | 1.572E-18 | 1.745E-19 |
| cd114 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 | 4.727E-01 |
| in114 | 6.958E-14 | 6.766E-14 | 6.353E-14 | 4.972E-14 | 2.504E-14 | 1.066E-14 | 3.001E-16 | 1.811E-18 | 1.093E-20 | 6.506E-23 | 1.444E-24 | 3.927E-25 | 2.370E-27 | 1.430E-29 |
| in114m | 4.279E-09 | 4.160E-09 | 3.906E-09 | 3.058E-09 | 1.540E-09 | 6.555E-10 | 1.845E-11 | 1.114E-13 | 6.722E-16 | 4.001E-18 | 8.878E-20 | 2.415E-20 | 1.457E-22 | 8.796E-25 |
| sn114 | 1.955E-06 | 1.955E-06 | 1.955E-06 | 1.956E-06 | 1.958E-06 | 1.958E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 | 1.959E-06 |
| cd115m | 1.253E-05 | 1.215E-05 | 1.133E-05 | 8.628E-06 | 4.026E-06 | 1.559E-06 | 2.952E-08 | 1.010E-10 | 3.455E-13 | 1.164E-15 | 1.692E-17 | 3.982E-18 | 1.362E-20 | 4.661E-23 |
| in115 | 4.175E-02 | 4.175E-02 | 4.175E-02 | 4.175E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 |
| in115m | 5.586E-12 | 5.418E-12 | 5.049E-12 | 3.845E-12 | 1.794E-12 | 6.947E-13 | 1.316E-14 | 4.501E-17 | 1.540E-19 | 5.187E-22 | 7.540E-24 | 1.775E-24 | 6.071E-27 | 2.077E-29 |
| sn115 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 | 6.860E-03 |
| cd116 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 | 1.554E-01 |
| sn116 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 | 5.975E-02 |
| sn117 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 | 1.383E-01 |
| sn117m | 1.198E-10 | 1.082E-10 | 8.603E-11 | 3.526E-11 | 2.902E-12 | 1.296E-13 | 2.938E-19 | 2.449E-27 | 2.041E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn118 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 | 1.244E-01 |
| sn119 | 1.177E-01 | 1.177E-01 | 1.177E-01 | 1.178E-01 | 1.179E-01 | 1.180E-01 | 1.183E-01 | 1.185E-01 | 1.186E-01 | 1.186E-01 | 1.187E-01 | 1.187E-01 | 1.187E-01 | 1.187E-01 |
| sn119m | 9.414E-04 | 9.369E-04 | 9.270E-04 | 8.894E-04 | 7.921E-04 | 6.856E-04 | 3.751E-04 | 1.582E-04 | 6.669E-05 | 2.806E-05 | 1.474E-05 | 1.183E-05 | 4.989E-06 | 2.104E-06 |
| sn120 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 | 1.196E-01 |
| te120 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 | 3.871E-11 |
| sn121 | 5.567E-07 | 5.566E-07 | 5.565E-07 | 5.561E-07 | 5.549E-07 | 5.534E-07 | 5.474E-07 | 5.388E-07 | 5.304E-07 | 5.220E-07 | 5.159E-07 | 5.139E-07 | 5.058E-07 | 4.977E-07 |
| sn121m | 1.021E-02 | 1.021E-02 | 1.021E-02 | 1.020E-02 | 1.018E-02 | 1.015E-02 | 1.004E-02 | 9.884E-03 | 9.729E-03 | 9.577E-03 | 9.465E-03 | 9.427E-03 | 9.279E-03 | 9.134E-03 |
| sb121 | 1.151E-01 | 1.151E-01 | 1.151E-01 | 1.151E-01 | 1.151E-01 | 1.151E-01 | 1.152E-01 | 1.154E-01 | 1.155E-01 | 1.157E-01 | 1.158E-01 | 1.158E-01 | 1.160E-01 | 1.161E-01 |
| te121 | 5.604E-10 | 5.557E-10 | 5.452E-10 | 5.062E-10 | 4.116E-10 | 3.181E-10 | 1.084E-10 | 2.322E-11 | 4.974E-12 | 1.061E-12 | 3.366E-13 | 2.273E-13 | 4.869E-14 | 1.043E-14 |
| te121m | 4.782E-09 | 4.742E-09 | 4.653E-09 | 4.321E-09 | 3.514E-09 | 2.716E-09 | 9.257E-10 | 1.983E-10 | 4.248E-11 | 9.060E-12 | 2.874E-12 | 1.941E-12 | 4.157E-13 | 8.905E-14 |
| sn122 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 | 1.570E-01 |
| te122 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 | 1.157E-02 |
| sn123 | 1.082E-03 | 1.070E-03 | 1.045E-03 | 9.512E-04 | 7.313E-04 | 5.272E-04 | 1.342E-04 | 1.894E-05 | 2.673E-06 | 3.751E-07 | 8.718E-08 | 5.293E-08 | 7.470E-09 | 1.054E-09 |

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sb123 | 1.516E-01 | 1.516E-01 | 1.516E-01 | 1.517E-01 | 1.519E-01 | 1.521E-01 | 1.525E-01 | 1.527E-01 | 1.527E-01 | 1.527E-01 | 1.527E-01 | 1.527E-01 | 1.527E-01 | 1.527E-01 |
| te123 | 1.478E-04 | 1.479E-04 | 1.481E-04 | 1.488E-04 | 1.505E-04 | 1.521E-04 | 1.549E-04 | 1.556E-04 | 1.557E-04 | 1.557E-04 | 1.557E-04 | 1.557E-04 | 1.557E-04 | 1.557E-04 |
| te123m | 7.853E-06 | 7.762E-06 | 7.562E-06 | 6.830E-06 | 5.137E-06 | 3.603E-06 | 8.178E-07 | 9.792E-08 | 1.172E-08 | 1.396E-09 | 2.870E-10 | 1.671E-10 | 2.001E-11 | 2.396E-12 |
| sn124 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 | 2.483E-01 |
| sb124 | 7.029E-05 | 6.869E-05 | 6.522E-05 | 5.332E-05 | 3.033E-05 | 1.502E-05 | 7.974E-07 | 1.193E-08 | 1.783E-10 | 2.637E-12 | 1.151E-13 | 3.943E-14 | 5.898E-16 | 8.820E-18 |
| te124 | 8.278E-03 | 8.280E-03 | 8.283E-03 | 8.295E-03 | 8.318E-03 | 8.333E-03 | 8.347E-03 | 8.348E-03 | 8.348E-03 | 8.348E-03 | 8.348E-03 | 8.348E-03 | 8.348E-03 | 8.348E-03 |
| xe124 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 | 2.695E-15 |
| sn125 | 5.248E-11 | 4.545E-11 | 3.289E-11 | 9.344E-12 | 2.757E-13 | 3.432E-15 | 3.737E-23 | 1.495E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 1.945E-02 | 1.942E-02 | 1.936E-02 | 1.913E-02 | 1.850E-02 | 1.774E-02 | 1.482E-02 | 1.158E-02 | 9.008E-03 | 7.003E-03 | 5.808E-03 | 5.448E-03 | 4.228E-03 | 3.297E-03 |
| te125 | 1.345E-01 | 1.348E-01 | 1.354E-01 | 1.377E-01 | 1.441E-01 | 1.519E-01 | 1.808E-01 | 2.143E-01 | 2.404E-01 | 2.607E-01 | 2.728E-01 | 2.765E-01 | 2.887E-01 | 2.983E-01 |
| te125m | 2.698E-03 | 2.694E-03 | 2.687E-03 | 2.657E-03 | 2.574E-03 | 2.471E-03 | 2.076E-03 | 1.615E-03 | 1.257E-03 | 9.769E-04 | 8.102E-04 | 7.600E-04 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te129m | 1.629E-04 | 1.563E-04 | 1.425E-04 | 9.929E-05 | 3.613E-05 | 1.027E-05 | 5.330E-08 | 2.862E-11 | 1.536E-14 | 8.079E-18 | 2.954E-20 | 4.337E-21 | 2.329E-24 | 1.250E-27 |
| i129 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 | 3.888E+00 |
| xe129 | 8.834E-04 | 8.834E-04 | 8.834E-04 | 8.834E-04 | 8.835E-04 | 8.835E-04 | 8.836E-04 | 8.838E-04 | 8.840E-04 | 8.841E-04 | 8.843E-04 | 8.843E-04 | 8.845E-04 | 8.846E-04 |
| xe129m | 2.564E-14 | 2.193E-14 | 1.543E-14 | 3.938E-15 | 8.593E-17 | 7.349E-19 | 1.666E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te130 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 | 7.512E+00 |
| xe130 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 | 1.647E-01 |
| i131 | 1.199E-10 | 1.008E-10 | 6.837E-11 | 1.508E-11 | 2.190E-13 | 1.128E-15 | 3.069E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 | 7.954E+00 |
| xe131m | 4.901E-09 | 4.360E-09 | 3.351E-09 | 1.203E-09 | 6.833E-11 | 1.922E-12 | 6.315E-19 | 3.313E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.287E-16 | 1.116E-16 | 8.093E-17 | 2.320E-17 | 7.036E-19 | 9.162E-21 | 1.921E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 2.495E-19 | 2.211E-19 | 1.686E-19 | 5.872E-20 | 3.068E-21 | 7.751E-23 | 1.638E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe132 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 | 2.208E+01 |
| cs132 | 2.635E-17 | 2.128E-17 | 1.315E-17 | 2.023E-18 | 1.071E-20 | 1.570E-23 | 2.237E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba132 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 | 4.353E-06 |
| xe133 | 2.946E-15 | 2.261E-15 | 1.247E-15 | 1.234E-16 | 1.896E-19 | 5.962E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs133 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 | 1.949E+01 |
| ba133 | 3.303E-06 | 3.301E-06 | 3.299E-06 | 3.288E-06 | 3.259E-06 | 3.224E-06 | 3.079E-06 | 2.882E-06 | 2.699E-06 | 2.526E-06 | 2.405E-06 | 2.365E-06 | 2.214E-06 | 2.073E-06 |
| xe134 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 | 2.651E+01 |
| cs134 | 2.264E+00 | 2.259E+00 | 2.250E+00 | 2.214E+00 | 2.117E+00 | 2.001E+00 | 1.583E+00 | 1.132E+00 | 8.095E-01 | 5.783E-01 | 4.504E-01 | 4.135E-01 | 2.957E-01 | 2.114E-01 |
| ba134 | 1.697E+00 | 1.701E+00 | 1.711E+00 | 1.746E+00 | 1.844E+00 | 1.959E+00 | 2.377E+00 | 2.829E+00 | 3.151E+00 | 3.382E+00 | 3.510E+00 | 3.547E+00 | 3.665E+00 | 3.749E+00 |
| cs135 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 | 8.617E+00 |
| ba135 | 8.736E-03 | 8.736E-03 | 8.736E-03 | 8.736E-03 | 8.736E-03 | 8.737E-03 | 8.738E-03 | 8.741E-03 | 8.744E-03 | 8.746E-03 | 8.748E-03 | 8.749E-03 | 8.751E-03 | 8.754E-03 |
| xe136 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 | 4.179E+01 |
| cs136 | 4.396E-08 | 3.957E-08 | 3.122E-08 | 1.242E-08 | 9.402E-10 | 3.783E-11 | 5.556E-17 | 2.486E-25 | 1.112E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 | 5.887E-01 |
| ba136m | 1.320E-15 | 1.188E-15 | 9.377E-16 | 3.730E-16 | 2.824E-17 | 1.136E-18 | 1.669E-24 | 7.467E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.182E+01 | 2.182E+01 | 2.181E+01 | 2.179E+01 | 2.172E+01 | 2.164E+01 | 2.129E+01 | 2.081E+01 | 2.033E+01 | 1.987E+01 | 1.953E+01 | 1.942E+01 | 1.897E+01 | 1.854E+01 |

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5 more years for cooling used fuel material fission products page 27

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba137 | 1.146E+00 | 1.149E+00 | 1.155E+00 | 1.179E+00 | 1.246E+00 | 1.330E+00 | 1.675E+00 | 2.160E+00 | 2.633E+00 | 3.098E+00 | 3.436E+00 | 3.550E+00 | 3.992E+00 | 4.424E+00 |
| ba137m | 3.333E-06 | 3.333E-06 | 3.332E-06 | 3.328E-06 | 3.318E-06 | 3.305E-06 | 3.252E-06 | 3.178E-06 | 3.106E-06 | 3.035E-06 | 2.983E-06 | 2.966E-06 | 2.898E-06 | 2.832E-06 |
| la137 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 | 6.369E-06 |
| ba138 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 | 2.186E+01 |
| la138 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 | 3.812E-04 |
| ce138 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 | 1.534E-07 |
| la139 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 |
| ce139 | 2.267E-05 | 2.245E-05 | 2.194E-05 | 2.009E-05 | 1.570E-05 | 1.155E-05 | 3.197E-06 | 5.087E-07 | 8.094E-08 | 1.281E-08 | 3.257E-09 | 2.039E-09 | 3.244E-10 | 1.162E-11 |
| ba140 | 6.550E-07 | 5.876E-07 | 4.601E-07 | 1.777E-07 | 1.239E-08 | 4.500E-10 | 4.305E-16 | 1.043E-24 | 2.526E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 9.928E-08 | 8.905E-08 | 6.973E-08 | 2.699E-08 | 1.878E-09 | 6.820E-11 | 6.525E-17 | 1.581E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce140 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 | 2.085E+01 |
| ce141 | 4.369E-03 | 4.187E-03 | 3.804E-03 | 2.619E-03 | 9.213E-04 | 2.509E-04 | 1.092E-06 | 4.551E-10 | 1.897E-13 | 7.743E-17 | 2.345E-19 | 3.228E-20 | 1.346E-23 | 5.610E-27 |
| pr141 | 1.838E+01 | 1.838E+01 | 1.838E+01 | 1.838E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 |
| ce142 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 | 1.801E+01 |
| nd142 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 | 3.328E+01 |
| pr143 | 1.377E-06 | 1.243E-06 | 9.879E-07 | 4.041E-07 | 3.307E-08 | 1.466E-09 | 3.232E-15 | 2.585E-23 | 2.067E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd143 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 |
| pm143 | 2.405E-14 | 2.393E-14 | 2.365E-14 | 2.259E-14 | 1.987E-14 | 1.694E-14 | 8.695E-15 | 3.347E-15 | 1.288E-15 | 4.946E-16 | 2.428E-16 | 1.904E-16 | 7.328E-17 | 2.821E-17 |
| ce144 | 2.708E+00 | 2.695E+00 | 2.666E+00 | 2.554E+00 | 2.267E+00 | 1.955E+00 | 1.051E+00 | 4.325E-01 | 1.780E-01 | 7.305E-02 | 3.769E-02 | 3.006E-02 | 1.237E-02 | 5.089E-03 |
| pr144 | 1.141E-04 | 1.135E-04 | 1.123E-04 | 1.076E-04 | 9.551E-05 | 8.234E-05 | 4.427E-05 | 1.822E-05 | 7.496E-06 | 3.077E-06 | 1.588E-06 | 1.266E-06 | 5.210E-07 | 2.144E-07 |
| pr144m | 4.538E-07 | 4.516E-07 | 4.467E-07 | 4.281E-07 | 3.799E-07 | 3.275E-07 | 1.761E-07 | 7.247E-08 | 2.982E-08 | 1.224E-08 | 6.316E-09 | 5.037E-09 | 2.073E-09 | 8.528E-10 |
| nd144 | 1.567E+01 | 1.568E+01 | 1.571E+01 | 1.582E+01 | 1.611E+01 | 1.642E+01 | 1.732E+01 | 1.794E+01 | 1.820E+01 | 1.830E+01 | 1.834E+01 | 1.835E+01 | 1.836E+01 | 1.837E+01 |
| pm144 | 7.221E-12 | 7.193E-12 | 7.132E-12 | 6.897E-12 | 6.281E-12 | 5.591E-12 | 3.436E-12 | 1.711E-12 | 8.523E-13 | 4.237E-13 | 2.521E-13 | 2.111E-13 | 1.051E-13 | 5.236E-14 |
| sm144 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 | 8.118E-13 |
| nd145 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 | 1.004E+01 |
| pm145 | 4.920E-07 | 4.919E-07 | 4.917E-07 | 4.910E-07 | 4.888E-07 | 4.860E-07 | 4.742E-07 | 4.570E-07 | 4.399E-07 | 4.232E-07 | 4.112E-07 | 4.071E-07 | 3.915E-07 | 3.765E-07 |
| sm145 | 4.283E-09 | 4.266E-09 | 4.227E-09 | 4.079E-09 | 3.691E-09 | 3.259E-09 | 1.938E-09 | 9.208E-10 | 4.375E-10 | 2.075E-10 | 1.192E-10 | 9.858E-11 | 4.684E-11 | 2.226E-11 |
| nd146 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 | 1.148E+01 |
| pm146 | 4.640E-06 | 4.637E-06 | 4.630E-06 | 4.602E-06 | 4.525E-06 | 4.432E-06 | 4.060E-06 | 3.582E-06 | 3.160E-06 | 2.787E-06 | 2.539E-06 | 2.459E-06 | 2.170E-06 | 1.914E-06 |
| sm146 | 4.433E-05 | 4.433E-05 | 4.433E-05 | 4.434E-05 | 4.437E-05 | 4.440E-05 | 4.453E-05 | 4.469E-05 | 4.483E-05 | 4.496E-05 | 4.504E-05 | 4.507E-05 | 4.517E-05 | 4.526E-05 |
| nd147 | 2.781E-08 | 2.451E-08 | 1.845E-08 | 6.112E-09 | 2.772E-10 | 5.894E-12 | 6.014E-19 | 5.918E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.280E+00 | 2.276E+00 | 2.269E+00 | 2.240E+00 | 2.162E+00 | 2.069E+00 | 1.720E+00 | 1.321E+00 | 1.015E+00 | 7.786E-01 | 6.395E-01 | 5.979E-01 | 4.592E-01 | 3.526E-01 |
| sm147 | 1.472E+00 | 1.475E+00 | 1.482E+00 | 1.511E+00 | 1.589E+00 | 1.682E+00 | 2.031E+00 | 2.430E+00 | 2.737E+00 | 2.973E+00 | 3.112E+00 | 3.153E+00 | 3.292E+00 | 3.399E+00 |
| eu147 | 7.305E-20 | 6.896E-20 | 6.059E-20 | 3.663E-20 | 8.949E-21 | 1.548E-21 | 1.011E-24 | 2.789E-29 | 7.695E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd148 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 | 6.624E+00 |
| pm148 | 3.618E-06 | 3.499E-06 | 3.244E-06 | 2.419E-06 | 1.062E-06 | 3.820E-07 | 5.278E-09 | 1.152E-11 | 2.513E-14 | 5.393E-17 | 5.608E-19 | 1.177E-19 | 2.568E-22 | 5.605E-25 |
| pm148m | 5.765E-04 | 5.575E-04 | 5.169E-04 | 3.853E-04 | 1.693E-04 | 6.080E-05 | 8.409E-07 | 1.835E-09 | 4.004E-12 | 8.593E-15 | 8.935E-17 | 1.875E-17 | 4.092E-20 | 8.930E-23 |
| sm148 | 2.746E+00 | 2.746E+00 | 2.746E+00 | 2.746E+00 | 2.746E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 | 2.747E+00 |
| sm149 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 | 7.070E-02 |
| eu149 | 7.896E-13 | 7.779E-13 | 7.523E-13 | 6.604E-13 | 4.585E-13 | 2.911E-13 | 4.361E-14 | 2.880E-15 | 1.902E-16 | 1.247E-17 | 1.645E-18 | 8.233E-19 | 5.437E-20 | 3.590E-21 |
| nd150 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 | 3.886E+00 |
| sm150 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 | 5.709E+00 |
| sm151 | 2.977E-01 | 2.977E-01 | 2.977E-01 | 2.976E-01 | 2.973E-01 | 2.969E-01 | 2.953E-01 | 2.930E-01 | 2.908E-01 | 2.886E-01 | 2.869E-01 | 2.863E-01 | 2.842E-01 | 2.820E-01 |
| eu151 | 1.929E-03 | 1.941E-03 | 1.970E-03 | 2.079E-03 | 2.387E-03 | 2.769E-03 | 4.367E-03 | 6.425E-03 | 8.473E-03 | 1.111E-02 | 1.276E-02 | 1.322E-02 | 1.552E-02 | 1.769E-02 |
| gd151 | 8.529E-10 | 8.434E-10 | 8.225E-10 | 7.458E-10 | 5.671E-10 | 4.033E-10 | 9.695E-11 | 1.260E-11 | 1.638E-12 | 2.117E-13 | 4.629E-14 | 2.752E-14 | 3.578E-15 | 4.650E-16 |
| sm152 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 | 1.943E+00 |
| eu152 | 3.482E-04 | 3.481E-04 | 3.479E-04 | 3.471E-04 | 3.447E-04 | 3.417E-04 | 3.297E-04 | 3.133E-04 | 2.977E-04 | 2.828E-04 | 2.722E-04 | 2.687E-04 | 2.553E-04 | 2.425E-04 |
| gd152 | 7.480E-04 | 7.481E-04 | 7.481E-04 | 7.484E-04 | 7.490E-04 | 7.498E-04 | 7.532E-04 | 7.578E-04 | 7.621E-04 | 7.663E-04 | 7.692E-04 | 7.702E-04 | 7.740E-04 | 7.775E-04 |
| eu153 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 | 2.745E+00 |
| gd153 | 3.134E-05 | 3.116E-05 | 3.076E-05 | 2.924E-05 | 2.539E-05 | 2.130E-05 | 1.021E-05 | 3.564E-06 | 1.244E-06 | 4.331E-07 | 1.977E-07 | 1.512E-07 | 5.277E-08 | 1.842E-08 |
| sm154 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 | 1.108E+00 |
| eu154 | 7.805E-01 | 7.802E-01 | 7.794E-01 | 7.764E-01 | 7.680E-01 | 7.578E-01 | 7.163E-01 | 6.609E-01 | 6.097E-01 | 5.624E-01 | 5.297E-01 | 5.189E-01 | 4.788E-01 | 4.417E-01 |

1

5 more years for cooling used fuel material fission products page 28

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gd154 | 1.200E-01 | 1.204E-01 | 1.211E-01 | 1.241E-01 | 1.325E-01 | 1.428E-01 | 1.842E-01 | 2.396E-01 | 2.907E-01 | 3.380E-01 | 3.708E-01 | 3.816E-01 | 4.217E-01 | 4.587E-01 |
| eu155 | 1.990E-01 | 1.989E-01 | 1.985E-01 | 1.971E-01 | 1.933E-01 | 1.886E-01 | 1.704E-01 | 1.473E-01 | 1.273E-01 | 1.100E-01 | 9.867E-02 | 9.508E-02 | 8.218E-02 | 7.104E-02 |
| gd155 | 2.276E-02 | 2.292E-02 | 2.328E-02 | 2.466E-02 | 2.848E-02 | 3.313E-02 | 5.139E-02 | 7.450E-02 | 9.447E-02 | 1.118E-01 | 1.231E-01 | 1.267E-01 | 1.396E-01 | 1.507E-01 |
| eu156 | 1.706E-06 | 1.558E-06 | 1.268E-06 | 5.708E-07 | 6.101E-08 | 3.771E-09 | 3.334E-14 | 1.947E-21 | 1.138E-28 | 6.348E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| gd156 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 | 2.536E+00 |
| dy156 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 | 4.320E-14 |
| gd157 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 | 4.455E-03 |
| tb157 | 9.324E-09 | 9.323E-09 | 9.322E-09 | 9.318E-09 | 9.305E-09 | 9.290E-09 | 9.227E-09 | 9.138E-09 | 9.049E-09 | 8.961E-09 | 8.896E-09 | 8.874E-09 | 8.788E-09 | 8.702E-09 |
| gd158 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 | 6.719E-01 |
| tb158 | 1.363E-06 | 1.363E-06 | 1.363E-06 | 1.363E-06 | 1.362E-06 | 1.361E-06 | 1.357E-06 | 1.352E-06 | 1.347E-06 | 1.342E-06 | 1.338E-06 | 1.337E-06 | 1.331E-06 | 1.326E-06 |
| dy158 | 1.749E-09 | 1.754E-09 | 1.764E-09 | 1.806E-09 | 1.923E-09 | 2.068E-09 | 2.675E-09 | 3.540E-09 | 4.402E-09 | 5.263E-09 | 5.901E-09 | 6.119E-09 | 6.971E-09 | 7.820E-09 |
| tb159 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 |
| dy159 | 3.955E-09 | 3.918E-09 | 3.834E-09 | 3.525E-09 | 2.786E-09 | 2.079E-09 | 6.113E-10 | 1.060E-10 | 1.838E-11 | 3.172E-12 | 8.597E-13 | 5.501E-13 | 9.540E-14 | 1.654E-14 |
| gd160 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 | 4.337E-02 |
| tb160 | 3.096E-04 | 3.037E-04 | 2.909E-04 | 2.459E-04 | 1.537E-04 | 8.567E-05 | 7.432E-06 | 2.246E-07 | 6.786E-09 | 2.031E-10 | 1.497E-11 | 6.137E-12 | 1.855E-13 | 5.604E-15 |
| dy160 | 1.345E-02 | 1.345E-02 | 1.347E-02 | 1.351E-02 | 1.360E-02 | 1.367E-02 | 1.375E-02 | 1.376E-02 | 1.376E-02 | 1.376E-02 | 1.376E-02 | 1.376E-02 | 1.376E-02 | 1.376E-02 |
| tb161 | 1.067E-14 | 8.729E-15 | 5.556E-15 | 9.593E-16 | 7.016E-18 | 1.538E-20 | 1.179E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| dy161 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 | 1.622E-02 |
| dy162 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 | 1.029E-02 |
| er162 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 | 4.588E-14 |
| dy163 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 | 8.906E-03 |
| ho163 | 2.706E-09 | 2.706E-09 | 2.706E-09 | 2.706E-09 | 2.706E-09 | 2.706E-09 | 2.706E-09 | 2.705E-09 | 2.705E-09 | 2.705E-09 | 2.704E-09 | 2.704E-09 | 2.704E-09 | 2.703E-09 |
| dy164 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 | 3.310E-03 |
| er164 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 | 4.799E-08 |
| ho165 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 | 4.111E-03 |
| ho166m | 9.369E-06 | 9.369E-06 | 9.369E-06 | 9.368E-06 | 9.368E-06 | 9.367E-06 | 9.363E-06 | 9.357E-06 | 9.352E-06 | 9.347E-06 | 9.343E-06 | 9.341E-06 | 9.336E-06 | 9.330E-06 |
| er166 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 | 1.362E-03 |
| er167 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 | 6.075E-05 |
| er168 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 | 1.992E-04 |
| tm168 | 1.564E-11 | 1.541E-11 | 1.490E-11 | 1.308E-11 | 9.081E-12 | 5.767E-12 | 8.638E-13 | 5.704E-14 | 3.767E-15 | 2.469E-16 | 3.259E-17 | 1.631E-17 | 1.077E-18 | 7.111E-20 |
| yb168 | 2.737E-14 | 2.739E-14 | 2.744E-14 | 2.767E-14 | 2.802E-14 | 2.836E-14 | 2.885E-14 | 2.893E-14 | 2.893E-14 | 2.893E-14 | 2.893E-14 | 2.893E-14 | 2.893E-14 | 2.893E-14 |
| er169 | 9.369E-15 | 8.084E-15 | 5.799E-15 | 1.594E-15 | 4.285E-17 | 4.751E-19 | 3.188E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm169 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 | 1.394E-05 |
| yb169 | 8.472E-14 | 8.113E-14 | 7.360E-14 | 5.039E-14 | 1.744E-14 | 4.657E-15 | 1.865E-17 | 6.900E-21 | 2.554E-24 | 9.248E-28 | 2.563E-30 | 3.422E-31 | 1.266E-34 | 0.000E+00 |
| er170 | 9.985E-06 | 9.985E-06 | 9.985E-06 | 9.985E-06 | 9.985E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 | 9.986E-06 |
| tm170 | 8.805E-07 | 8.710E-07 | 8.501E-07 | 7.736E-07 | 5.941E-07 | 4.276E-07 | 1.082E-07 | 1.513E-08 | 2.115E-09 | 2.941E-10 | 6.790E-11 | 4.113E-11 | 5.751E-12 | 8.042E-13 |
| yb170 | 1.055E-05 | 1.056E-05 | 1.058E-05 | 1.066E-05 | 1.084E-05 | 1.101E-05 | 1.132E-05 | 1.142E-05 | 1.143E-05 | 1.143E-05 | 1.143E-05 | 1.143E-05 | 1.143E-05 | 1.143E-05 |
| tm171 | 2.708E-06 | 2.703E-06 | 2.691E-06 | 2.645E-06 | 2.520E-06 | 2.373E-06 | 1.844E-06 | 1.285E-06 | 8.961E-07 | 6.241E-07 | 4.769E-07 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| br | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 | 3.176E-01 |
| kr | 3.900E+00 | 3.900E+00 | 3.900E+00 | 3.899E+00 | 3.897E+00 | 3.894E+00 | 3.883E+00 | 3.869E+00 | 3.855E+00 | 3.842E+00 | 3.833E+00 | 3.830E+00 | 3.818E+00 | 3.808E+00 |
| rb | 3.459E+00 | 3.459E+00 | 3.459E+00 | 3.460E+00 | 3.462E+00 | 3.465E+00 | 3.476E+00 | 3.490E+00 | 5.504E+00 | 5.517E+00 | 5.526E+00 | 5.529E+00 | 5.541E+00 | 5.551E+00 |
| sr | 8.198E+00 | 8.198E+00 | 8.196E+00 | 8.188E+00 | 8.169E+00 | 8.147E+00 | 8.064E+00 | 7.949E+00 | 7.837E+00 | 7.727E+00 | 7.647E+00 | 7.620E+00 | 7.516E+00 | 7.414E+00 |
| y | 4.272E+00 | 4.271E+00 | 4.271E+00 | 4.268E+00 | 4.263E+00 | 4.260E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 | 4.256E+00 |
| zr | 4.582E+01 | 4.582E+01 | 4.582E+01 | 4.582E+01 | 4.582E+01 | 4.583E+01 | 4.591E+01 | 4.602E+01 | 4.613E+01 | 4.624E+01 | 4.632E+01 | 4.635E+01 | 4.645E+01 | 4.656E+01 |
| nb | 7.372E-02 | 7.223E-02 | 6.898E-02 | 5.762E-02 | 3.457E-02 | 1.814E-02 | 1.223E-03 | 8.640E-05 | 6.783E-05 | 7.155E-05 | 7.463E-05 | 7.568E-05 | 7.982E-05 | 8.396E-05 |
| mo | 5.626E+01 | 5.626E+01 | 5.627E+01 | 5.629E+01 | 5.633E+01 | 5.636E+01 | 5.639E+01 | 5.640E+01 | 5.640E+01 | 5.640E+01 | 5.640E+01 | 5.640E+01 | 5.640E+01 | 5.640E+01 |
| tc | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 | 1.336E+01 |
| ru | 5.337E+01 | 5.336E+01 | 5.333E+01 | 5.323E+01 | 5.297E+01 | 5.265E+01 | 5.176E+01 | 5.102E+01 | 5.064E+01 | 5.045E+01 | 5.037E+01 | 5.035E+01 | 5.031E+01 | 5.028E+01 |
| rh | 1.165E+01 | 1.165E+01 | 1.165E+01 | 1.166E+01 | 1.166E+01 | 1.166E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 | 1.167E+01 |
| pd | 4.545E+01 | 4.547E+01 | 4.549E+01 | 4.559E+01 | 4.585E+01 | 4.614E+01 | 4.705E+01 | 4.779E+01 | 4.817E+01 | 4.836E+01 | 4.844E+01 | 4.846E+01 | 4.851E+01 | 4.853E+01 |
| ag | 2.799E+00 | 2.799E+00 | 2.798E+00 | 2.797E+00 | 2.795E+00 | 2.792E+00 | 2.785E+00 | 2.780E+00 | 2.779E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 | 2.778E+00 |
| cd | 4.139E+00 | 4.139E+00 | 4.140E+00 | 4.141E+00 | 4.143E+00 | 4.146E+00 | 4.153E+00 | 4.158E+00 | 4.159E+00 | 4.160E+00 | 4.160E+00 | 4.160E+00 | 4.160E+00 | 4.160E+00 |
| in | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.176E-02 | 4.177E-02 | 4.177E-02 | 4.177E-02 | 4.178E-02 | 4.178E-02 | 4.178E-02 | 4.178E-02 | 4.178E-02 | 4.178E-02 | 4.179E-02 |
| sn | 1.557E+00 | 1.557E+00 | 1.557E+00 | 1.557E+00 | 1.556E+00 | 1.556E+00 | 1.556E+00 | 1.555E+00 | 1.555E+00 | 1.555E+00 | 1.555E+00 | 1.555E+00 | 1.555E+00 | 1.555E+00 |
| sb | 4.612E-01 | 4.610E-01 | 4.604E-01 | 4.582E-01 | 4.521E-01 | 4.447E-01 | 4.166E-01 | 3.838E-01 | 3.583E-01 | 3.384E-01 | 3.266E-01 | 3.230E-01 | 3.111E-01 | 3.018E-01 |
| te | 9.912E+00 | 9.913E+00 | 9.913E+00 | 9.915E+00 | 9.921E+00 | 9.927E+00 | 9.955E+00 | 9.987E+00 | 1.001E+01 | 1.003E+01 | 1.005E+01 | 1.005E+01 | 1.006E+01 | 1.007E+01 |
| i | 5.089E+00 | 5.089E+00 | 5.089E+00 | 5.090E+00 | 5.091E+00 | 5.091E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 | 5.093E+00 |
| xe | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 | 9.862E+01 |
| cs | 5.219E+01 | 5.218E+01 | 5.217E+01 | 5.211E+01 | 5.194E+01 | 5.174E+01 | 5.098E+01 | 5.004E+01 | 4.925E+01 | 4.855E+01 | 4.809E+01 | 4.794E+01 | 4.738E+01 | 4.686E+01 |
| ba | 2.530E+01 | 2.530E+01 | 2.532E+01 | 2.538E+01 | 2.554E+01 | 2.574E+01 | 2.651E+01 | 2.744E+01 | 2.824E+01 | 2.893E+01 | 2.940E+01 | 2.955E+01 | 3.011E+01 | 3.063E+01 |
| la | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 | 2.026E+01 |
| ce | 4.157E+01 | 4.156E+01 | 4.153E+01 | 4.142E+01 | 4.113E+01 | 4.082E+01 | 3.991E+01 | 3.930E+01 | 3.904E+01 | 3.894E+01 | 3.890E+01 | 3.889E+01 | 3.887E+01 | 3.887E+01 |
| pr | 1.838E+01 | 1.838E+01 | 1.838E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 | 1.839E+01 |
| nd | 6.079E+01 | 6.080E+01 | 6.083E+01 | 6.094E+01 | 6.123E+01 | 6.154E+01 | 6.245E+01 | 6.306E+01 | 6.332E+01 | 6.342E+01 | 6.346E+01 | 6.347E+01 | 6.348E+01 | 6.349E+01 |
| pm | 2.280E+00 | 2.277E+00 | 2.269E+00 | 2.241E+00 | 2.163E+00 | 2.069E+00 | 1.720E+00 | 1.321E+00 | 1.015E+00 | 7.786E-01 | 6.395E-01 | 5.979E-01 | 4.592E-01 | 3.526E-01 |
| sm | 1.335E+01 | 1.335E+01 | 1.336E+01 | 1.339E+01 | 1.346E+01 | 1.356E+01 | 1.390E+01 | 1.430E+01 | 1.461E+01 | 1.484E+01 | 1.498E+01 | 1.502E+01 | 1.515E+01 | 1.526E+01 |
| eu | 3.727E+00 | 3.727E+00 | 3.721E+00 | 3.709E+00 | 3.695E+00 | 3.637E+00 | 3.560E+00 | 3.492E+00 | 3.429E+00 | 3.387E+00 | 3.373E+00 | 3.322E+00 | 3.276E+00 |
| gd | 3.399E+00 | 3.399E+00 | 3.401E+00 | 3.405E+00 | 3.417E+00 | 3.432E+00 | 3.492E+00 | 3.570E+00 | 3.641E+00 | 3.706E+00 | 3.750E+00 | 3.764E+00 | 3.817E+00 | 3.866E+00 |
| tb | 9.692E-02 | 9.691E-02 | 9.690E-02 | 9.686E-02 | 9.676E-02 | 9.670E-02 | 9.662E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 | 9.661E-02 |
| dy | 5.217E-02 | 5.217E-02 | 5.219E-02 | 5.223E-02 | 5.232E-02 | 5.239E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 | 5.248E-02 |
| ho | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 | 4.120E-03 |
| er | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 | 1.632E-03 |
| tm | 1.753E-05 | 1.752E-05 | 1.748E-05 | 1.736E-05 | 1.706E-05 | 1.674E-05 | 1.589E-05 | 1.524E-05 | 1.484E-05 | 1.457E-05 | 1.442E-05 | 1.438E-05 | 1.424E-05 | 1.415E-05 |
| yb | 2.128E-05 | 2.129E-05 | 2.132E-05 | 2.145E-05 | 2.175E-05 | 2.206E-05 | 2.291E-05 | 2.356E-05 | 2.397E-05 | 2.424E-05 | 2.439E-05 | 2.443E-05 | 2.456E-05 | 2.465E-05 |
| totals | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 | 6.109E+02 |



nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 9.900E+00 | 9.897E+00 | 9.890E+00 | 9.863E+00 | 9.789E+00 | 9.697E+00 | 9.324E+00 | 8.814E+00 | 8.332E+00 | 7.875E+00 | 7.552E+00 | 7.445E+00 | 7.038E+00 | 6.653E+00 |
| ga 68 | 3.080E-17 | 3.064E-17 | 3.029E-17 | 2.896E-17 | 2.555E-17 | 2.186E-17 | 1.138E-17 | 4.475E-18 | 1.759E-18 | 6.897E-19 | 3.439E-19 | 2.711E-19 | 1.066E-19 | 4.189E-20 |
| ge 68 | 3.079E-17 | 3.063E-17 | 3.028E-17 | 2.896E-17 | 2.555E-17 | 2.186E-17 | 1.138E-17 | 4.474E-18 | 1.759E-18 | 6.896E-19 | 3.439E-19 | 2.710E-19 | 1.065E-19 | 4.188E-20 |
| ge 71 | 4.910E-12 | 4.349E-12 | 3.311E-12 | 1.146E-12 | 5.868E-14 | 1.452E-15 | 2.793E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 4.713E-08 | 4.632E-08 | 4.456E-08 | 3.831E-08 | 2.510E-08 | 1.482E-08 | 1.641E-09 | 7.026E-11 | 3.009E-12 | 1.277E-13 | 1.221E-14 | 5.469E-15 | 2.342E-16 | 1.003E-17 |
| as 73 | 4.713E-08 | 4.632E-08 | 4.456E-08 | 3.831E-08 | 2.510E-08 | 1.482E-08 | 1.641E-09 | 7.026E-11 | 3.009E-12 | 1.277E-13 | 1.221E-14 | 5.469E-15 | 2.342E-16 | 1.003E-17 |
| as 74 | 5.690E-09 | 5.263E-09 | 4.416E-09 | 2.231E-09 | 3.299E-10 | 3.055E-11 | 1.463E-15 | 9.593E-22 | 6.291E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 1.977E-06 | 1.954E-06 | 1.904E-06 | 1.721E-06 | 1.296E-06 | 9.105E-07 | 2.082E-07 | 2.519E-08 | 3.048E-09 | 3.666E-10 | 7.598E-11 | 4.436E-11 | 5.367E-12 | 6.494E-13 |
| se 79 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 |
| kr 81 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 | 1.191E-08 |
| kr 83m | 1.309E-05 | 1.289E-05 | 1.243E-05 | 1.080E-05 | 7.280E-06 | 4.458E-06 | 5.736E-07 | 3.047E-08 | 1.619E-09 | 8.533E-11 | 9.576E-12 | 4.533E-12 | 2.408E-13 | 1.280E-14 |
| kr 83 | 1.762E-05 | 1.734E-05 | 1.672E-05 | 1.452E-05 | 9.795E-06 | 5.997E-06 | 7.717E-07 | 4.100E-08 | 2.178E-09 | 1.148E-10 | 1.288E-11 | 6.099E-12 | 3.240E-13 | 1.721E-14 |
| kr 84 | 7.234E-05 | 6.935E-05 | 6.306E-05 | 4.358E-05 | 1.548E-05 | 4.269E-06 | 1.956E-08 | 8.781E-12 | 3.942E-15 | 1.732E-18 | 5.544E-21 | 7.777E-22 | 3.491E-25 | 1.567E-28 |
| kr 85 | 9.900E+01 | 9.897E+01 | 9.889E+01 | 9.858E+01 | 9.774E+01 | 9.669E+01 | 9.244E+01 | 8.667E+01 | 8.126E+01 | 7.618E+01 | 7.261E+01 | 7.143E+01 | 6.698E+01 | 6.280E+01 |
| sr 85 | 6.203E-06 | 6.071E-06 | 5.786E-06 | 4.799E-06 | 2.842E-06 | 1.481E-06 | 9.695E-08 | 1.959E-09 | 3.957E-11 | 7.910E-13 | 4.319E-14 | 1.598E-14 | 3.229E-16 | 6.523E-18 |
| sr 86 | 3.600E-03 | 3.342E-03 | 2.827E-03 | 1.474E-03 | 2.381E-04 | 2.461E-05 | 1.866E-09 | 2.363E-15 | 2.992E-21 | 3.650E-27 | 1.470E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 |
| y 88 | 6.121E-03 | 6.042E-03 | 5.868E-03 | 5.237E-03 | 3.808E-03 | 2.562E-03 | 4.882E-04 | 4.552E-05 | 4.244E-06 | 3.931E-07 | 6.707E-08 | 3.664E-08 | 3.416E-09 | 3.185E-10 |
| zr 88 | 1.699E-09 | 1.671E-09 | 1.601E-09 | 1.392E-09 | 9.263E-10 | 5.579E-10 | 6.701E-11 | 3.226E-12 | 1.553E-13 | 7.415E-15 | 7.733E-16 | 3.570E-16 | 1.719E-17 | 8.274E-19 |
| sr 89 | 2.683E+02 | 2.611E+02 | 2.454E+02 | 1.931E+02 | 9.857E+01 | 4.269E+01 | 1.292E+00 | 8.644E-03 | 5.784E-05 | 3.817E-07 | 9.148E-09 | 2.554E-09 | 1.709E-11 | 1.144E-13 |
| y 89m | 2.587E-02 | 2.517E-02 | 2.366E-02 | 1.861E-02 | 9.502E-03 | 4.116E-03 | 1.245E-04 | 8.333E-07 | 5.576E-09 | 3.680E-11 | 8.819E-13 | 2.462E-13 | 1.648E-15 | 1.103E-17 |
| sr 90 | 6.843E+02 | 6.842E+02 | 6.840E+02 | 6.832E+02 | 6.810E+02 | 6.782E+02 | 6.669E+02 | 6.511E+02 | 6.356E+02 | 6.205E+02 | 6.094E+02 | 6.057E+02 | 5.913E+02 | 5.772E+02 |
| y 90 | 6.844E+02 | 6.843E+02 | 6.841E+02 | 6.834E+02 | 6.812E+02 | 6.784E+02 | 6.671E+02 | 6.512E+02 | 6.358E+02 | 6.206E+02 | 6.096E+02 | 6.059E+02 | 5.915E+02 | 5.774E+02 |
| y 91 | 6.063E+02 | 5.921E+02 | 5.614E+02 | 4.562E+02 | 2.553E+02 | 1.240E+02 | 6.043E+00 | 8.005E-02 | 1.060E-03 | 1.388E-05 | 5.533E-07 | 1.839E-07 | 2.435E-09 | 3.226E-11 |
| nb 91 | 7.811E-10 | 7.811E-10 | 7.811E-10 | 7.810E-10 | 7.809E-10 | 7.808E-10 | 7.803E-10 | 7.795E-10 | 7.787E-10 | 7.779E-10 | 7.773E-10 | 7.771E-10 | 7.763E-10 | 7.755E-10 |
| nb 91m | 2.605E-12 | 2.546E-12 | 2.419E-12 | 1.982E-12 | 1.134E-12 | 5.662E-13 | 3.102E-14 | 4.856E-16 | 7.601E-18 | 1.176E-19 | 5.310E-21 | 1.841E-21 | 2.882E-23 | 4.511E-25 |
| nb 92 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 | 1.310E-12 |
| nb 92m | 1.668E-14 | 1.455E-14 | 1.070E-14 | 3.239E-15 | 1.141E-16 | 1.770E-18 | 4.843E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 |
| nb 93m | 2.061E-03 | 2.065E-03 | 2.076E-03 | 2.118E-03 | 2.235E-03 | 2.379E-03 | 2.972E-03 | 3.789E-03 | 4.573E-03 | 5.325E-03 | 5.864E-03 | 6.044E-03 | 6.732E-03 | 7.392E-03 |
| mo 93 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.044E-09 | 6.043E-09 | 6.042E-09 | 6.041E-09 | 6.040E-09 | 6.040E-09 | 6.039E-09 | 6.038E-09 |
| nb 94 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.359E-06 | 8.358E-06 | 8.358E-06 | 8.358E-06 | 8.358E-06 | 8.358E-06 | 8.357E-06 |
| zr 95 | 1.402E+03 | 1.372E+03 | 1.306E+03 | 1.081E+03 | 6.360E+02 | 3.286E+02 | 2.079E+01 | 3.998E-01 | 7.690E-03 | 1.463E-04 | 7.700E-06 | 2.814E-06 | 5.411E-08 | 1.041E-09 |
| nb 95 | 2.893E+03 | 2.835E+03 | 2.707E+03 | 2.261E+03 | 1.356E+03 | 7.105E+02 | 4.573E+01 | 9.095E-01 | 1.751E-02 | 3.331E-04 | 1.702E-05 | 6.208E-06 | 1.231E-07 | 2.370E-09 |
| nb 95m | 1.605E+01 | 1.570E+01 | 1.496E+01 | 1.237E+01 | 7.282E+00 | 3.762E+00 | 2.380E-01 | 4.577E-03 | 8.803E-05 | 1.675E-06 | 8.815E-08 | 3.221E-08 | 6.195E-10 | 1.191E-11 |
| tc 95 | 1.578E-13 | 1.543E-13 | 1.466E-13 | 1.202E-13 | 6.886E-14 | 3.443E-14 | 1.899E-15 | 3.001E-17 | 4.742E-19 | 7.410E-21 | 3.369E-22 | 1.171E-22 | 1.851E-24 | 0.000E+00 |
| tc 95m | 4.013E-12 | 3.922E-12 | 3.727E-12 | 3.055E-12 | 1.751E-12 | 8.753E-13 | 4.827E-14 | 7.629E-16 | 1.206E-17 | 1.884E-19 | 8.564E-21 | 2.977E-21 | 4.704E-23 | 7.434E-25 |
| zr 96 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 | 2.280E-15 |
| tc 97 | 1.296E-10 | 1.296E-10 | 1.296E-10 | 1.298E-10 | 1.301E-10 | 1.304E-10 | 1.307E-10 | 1.308E-10 | 1.308E-10 | 1.308E-10 | 1.308E-10 | 1.308E-10 | 1.308E-10 | 1.308E-10 |
| tc 97m | 2.181E-05 | 2.148E-05 | 2.076E-05 | 1.817E-05 | 1.251E-05 | 7.860E-06 | 1.127E-06 | 6.989E-08 | 4.335E-09 | 2.668E-10 | 3.361E-11 | 1.655E-11 | 1.026E-12 | 6.367E-14 |
| tc 98 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 | 1.334E-07 |
| tc 99 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 |
| rh 99 | 2.219E-16 | 2.036E-16 | 1.677E-16 | 7.896E-17 | 9.577E-18 | 6.929E-19 | 1.182E-23 | 1.771E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 | 8.350E-15 |
| rh101 | 8.327E-06 | 8.318E-06 | 8.296E-06 | 8.213E-06 | 7.985E-06 | 7.709E-06 | 6.658E-06 | 5.397E-06 | 4.375E-06 | 3.545E-06 | 3.032E-06 | 2.874E-06 | 2.330E-06 | 1.889E-06 |
| rh102 | 7.277E-02 | 7.228E-02 | 7.120E-02 | 6.716E-02 | 5.702E-02 | 4.651E-02 | 1.986E-02 | 5.890E-03 | 1.764E-03 | 5.400E-04 | 2.329E-04 | 1.770E-04 | 6.689E-05 | 3.192E-05 |
| rh102m | 2.546E-02 | 2.543E-02 | 2.537E-02 | 2.515E-02 | 2.453E-02 | 2.378E-02 | 2.090E-02 | 1.737E-02 | 1.443E-02 | 1.199E-02 | 1.044E-02 | 9.961E-03 | 8.278E-03 | 6.879E-03 |
| ru103 | 3.956E+02 | 3.818E+02 | 3.527E+02 | 2.589E+02 | 1.090E+02 | 3.710E+01 | 4.107E-01 | 6.514E-04 | 1.033E-06 | 1.611E-09 | 1.320E-11 | 2.555E-12 | 4.052E-15 | 6.428E-18 |
| rh103m | 3.913E+02 | 3.777E+02 | 3.489E+02 | 2.561E+02 | 1.078E+02 | 3.670E+01 | 4.063E-01 | 6.444E-04 | 1.022E-06 | 1.593E-09 | 1.306E-11 | 2.527E-12 | 4.009E-15 | 6.359E-18 |
| pd103 | 8.548E-06 | 7.879E-06 | 6.557E-06 | 3.211E-06 | 4.350E-07 | 3.612E-08 | 1.096E-12 | 3.742E-19 | 1.278E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 4.996E-12 | 4.831E-12 | 4.479E-12 | 3.339E-12 | 1.467E-12 | 5.268E-13 | 7.286E-15 | 1.590E-17 | 3.470E-20 | 7.446E-23 | 7.742E-25 | 1.625E-25 | 3.546E-28 | 7.738E-31 |
| ru106 | 1.028E+04 | 1.024E+04 | 1.016E+04 | 9.831E+03 | 8.972E+03 | 8.008E+03 | 4.978E+03 | 2.521E+03 | 1.276E+03 | 6.451E+02 | 3.885E+02 | 3.266E+02 | 1.654E+02 | 8.375E+01 |



nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rh106 | 1.028E+04 | 1.024E+04 | 1.016E+04 | 9.831E+03 | 8.972E+03 | 8.008E+03 | 4.978E+03 | 2.521E+03 | 1.276E+03 | 6.451E+02 | 3.885E+02 | 3.266E+02 | 1.654E+02 | 8.375E+01 |
| ag106m | 9.148E-17 | 7.738E-17 | 5.309E-17 | 1.227E-17 | 2.029E-19 | 1.229E-21 | 6.586E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 |
| ag108 | 6.472E-06 | 6.471E-06 | 6.471E-06 | 6.471E-06 | 6.469E-06 | 6.468E-06 | 6.461E-06 | 6.450E-06 | 6.440E-06 | 6.430E-06 | 6.422E-06 | 6.420E-06 | 6.410E-06 | 6.400E-06 |
| ag108m | 7.439E-05 | 7.438E-05 | 7.438E-05 | 7.438E-05 | 7.436E-05 | 7.434E-05 | 7.426E-05 | 7.414E-05 | 7.403E-05 | 7.391E-05 | 7.382E-05 | 7.379E-05 | 7.367E-05 | 7.356E-05 |
| ag109m | 8.256E-03 | 8.231E-03 | 8.176E-03 | 7.963E-03 | 7.398E-03 | 6.750E-03 | 4.602E-03 | 2.660E-03 | 1.537E-03 | 8.869E-04 | 5.894E-04 | 5.125E-04 | 2.962E-04 | 1.712E-04 |
| cd109 | 8.256E-03 | 8.231E-03 | 8.176E-03 | 7.963E-03 | 7.398E-03 | 6.750E-03 | 4.602E-03 | 2.660E-03 | 1.537E-03 | 8.869E-04 | 5.894E-04 | 5.125E-04 | 2.962E-04 | 1.712E-04 |
| ag110 | 1.345E+00 | 1.338E+00 | 1.321E+00 | 1.258E+00 | 1.098E+00 | 9.273E-01 | 4.570E-01 | 1.659E-01 | 6.026E-02 | 2.182E-02 | 1.026E-02 | 7.924E-03 | 2.878E-03 | 1.045E-03 |
| ag110m | 9.890E+01 | 9.835E+01 | 9.713E+01 | 9.253E+01 | 8.076E+01 | 6.819E+01 | 3.360E+01 | 1.220E+01 | 4.431E+00 | 1.605E+00 | 7.543E-01 | 5.827E-01 | 2.116E-01 | 7.684E-02 |
| ag111 | 2.907E-07 | 2.413E-07 | 1.588E-07 | 3.117E-08 | 3.264E-10 | 1.119E-12 | 5.561E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 | 1.606E-15 |
| cd113m | 1.333E-02 | 1.333E-02 | 1.332E-02 | 1.329E-02 | 1.320E-02 | 1.309E-02 | 1.265E-02 | 1.205E-02 | 1.147E-02 | 1.092E-02 | 1.053E-02 | 1.039E-02 | 9.896E-03 | 9.421E-03 |
| in113m | 9.823E-09 | 9.705E-09 | 9.445E-09 | 8.501E-09 | 6.328E-09 | 4.383E-09 | 9.455E-10 | 1.047E-10 | 1.162E-11 | 1.282E-12 | 2.492E-13 | 1.423E-13 | 1.580E-14 | 1.754E-15 |
| sn113 | 9.817E-09 | 9.699E-09 | 9.440E-09 | 8.495E-09 | 6.324E-09 | 4.380E-09 | 9.429E-10 | 1.047E-10 | 1.162E-11 | 1.282E-12 | 2.491E-13 | 1.423E-13 | 1.579E-14 | 1.752E-15 |
| in114 | 9.581E-05 | 9.316E-05 | 8.748E-05 | 6.847E-05 | 3.448E-05 | 1.468E-05 | 4.132E-07 | 2.494E-09 | 1.505E-11 | 8.959E-14 | 1.988E-15 | 5.407E-16 | 3.264E-18 | 1.970E-20 |
| in114m | 9.903E-05 | 9.629E-05 | 9.041E-05 | 7.077E-05 | 3.564E-05 | 1.517E-05 | 4.271E-07 | 2.578E-09 | 1.556E-11 | 9.260E-14 | 2.055E-15 | 5.589E-16 | 3.373E-18 | 2.036E-20 |
| cd115m | 3.195E-01 | 3.097E-01 | 2.888E-01 | 2.200E-01 | 1.026E-01 | 3.974E-02 | 7.525E-04 | 2.575E-06 | 8.808E-09 | 2.967E-11 | 4.313E-13 | 1.015E-13 | 3.473E-16 | 1.188E-18 |
| in115 | 2.944E-13 | 2.944E-13 | 2.944E-13 | 2.944E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 | 2.945E-13 |
| in115m | 3.395E-05 | 3.293E-05 | 3.068E-05 | 2.337E-05 | 1.090E-05 | 4.222E-06 | 7.995E-08 | 2.735E-10 | 9.358E-13 | 3.152E-15 | 4.582E-17 | 1.078E-17 | 3.690E-20 | 1.262E-22 |
| cd116 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 | 1.546E-17 |
| sn117m | 9.836E-06 | 8.883E-06 | 7.062E-06 | 2.895E-06 | 2.782E-07 | 1.064E-08 | 4.112E-14 | 2.010E-22 | 1.675E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 3.527E+00 | 3.510E+00 | 3.473E+00 | 3.332E+00 | 2.968E+00 | 2.569E+00 | 1.405E+00 | 5.926E-01 | 2.499E-01 | 1.051E-01 | 5.524E-02 | 4.433E-02 | 1.869E-02 | 7.883E-03 |
| sb120m | 3.374E-16 | 2.653E-16 | 1.543E-16 | 1.879E-17 | 5.164E-20 | 3.350E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 5.336E-01 | 5.335E-01 | 5.334E-01 | 5.330E-01 | 5.319E-01 | 5.305E-01 | 5.247E-01 | 5.165E-01 | 5.084E-01 | 5.004E-01 | 4.946E-01 | 4.926E-01 | 4.849E-01 | 4.773E-01 |
| sn121m | 6.876E-01 | 6.875E-01 | 6.874E-01 | 6.868E-01 | 6.854E-01 | 6.836E-01 | 6.761E-01 | 6.655E-01 | 6.551E-01 | 6.448E-01 | 6.373E-01 | 6.347E-01 | 6.248E-01 | 6.150E-01 |
| te121 | 3.156E-05 | 3.129E-05 | 3.070E-05 | 2.851E-05 | 2.318E-05 | 1.791E-05 | 6.107E-06 | 1.308E-06 | 2.801E-07 | 5.976E-08 | 1.896E-08 | 1.280E-08 | 2.742E-09 | 5.873E-10 |
| te121m | 3.144E-05 | 3.118E-05 | 3.059E-05 | 2.841E-05 | 2.310E-05 | 1.786E-05 | 6.086E-06 | 1.304E-06 | 2.793E-07 | 5.957E-08 | 1.890E-08 | 1.276E-08 | 2.733E-09 | 5.855E-10 |
| sn123 | 8.893E+00 | 8.798E+00 | 8.589E+00 | 7.819E+00 | 6.011E+00 | 4.334E+00 | 1.283E+00 | 1.557E-02 | 2.197E-03 | 3.084E-03 | 7.166E-04 | 4.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te129m | 4.910E+00 | 4.711E+00 | 4.294E+00 | 2.992E+00 | 1.089E+00 | 3.094E-01 | 1.607E-03 | 8.625E-07 | 4.630E-10 | 2.435E-13 | 8.904E-16 | 1.307E-16 | 7.018E-20 | 3.768E-23 | |
| i129 | 6.866E-04 | 6.866E-04 | 6.866E-04 | 6.866E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | |
| xe129m | 2.923E-09 | 2.501E-09 | 1.760E-09 | 4.491E-10 | 9.799E-12 | 8.381E-14 | 1.900E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| i131 | 1.489E-05 | 1.253E-05 | 8.495E-06 | 1.874E-06 | 2.721E-08 | 1.401E-10 | 3.813E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| xe131m | 4.128E-04 | 3.672E-04 | 2.822E-04 | 1.013E-04 | 5.755E-06 | 1.619E-07 | 5.318E-14 | 2.790E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cs131 | 1.325E-11 | 1.149E-11 | 8.329E-12 | 2.387E-12 | 7.242E-14 | 9.429E-16 | 1.977E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| ba131 | 2.163E-14 | 1.918E-14 | 1.462E-14 | 5.092E-15 | 2.656E-16 | 6.721E-18 | 1.420E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cs132 | 4.025E-12 | 3.250E-12 | 2.008E-12 | 3.089E-13 | 1.635E-15 | 2.397E-18 | 3.416E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |

1

5 more years for cooling used fuel material fission products page 32

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe133 | 5.518E-10 | 4.236E-10 | 2.337E-10 | 2.311E-11 | 3.551E-14 | 1.117E-17 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 8.445E-04 | 8.442E-04 | 8.435E-04 | 8.409E-04 | 8.335E-04 | 8.244E-04 | 7.873E-04 | 7.371E-04 | 6.901E-04 | 6.460E-04 | 6.150E-04 | 6.048E-04 | 5.663E-04 | 5.302E-04 |
| cs134 | 2.926E+03 | 2.920E+03 | 2.908E+03 | 2.862E+03 | 2.736E+03 | 2.587E+03 | 2.046E+03 | 1.463E+03 | 1.046E+03 | 7.474E+02 | 5.821E+02 | 5.344E+02 | 3.821E+02 | 2.733E+02 |
| cs135 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 | 9.926E-03 |
| cs136 | 3.209E-03 | 2.888E-03 | 2.278E-03 | 9.064E-04 | 6.862E-05 | 2.761E-06 | 4.055E-12 | 1.814E-20 | 8.118E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 3.553E-04 | 3.198E-04 | 2.523E-04 | 1.004E-04 | 7.599E-06 | 3.058E-07 | 4.491E-13 | 2.009E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 1.894E+03 | 1.893E+03 | 1.893E+03 | 1.891E+03 | 1.885E+03 | 1.878E+03 | 1.848E+03 | 1.806E+03 | 1.765E+03 | 1.724E+03 | 1.695E+03 | 1.685E+03 | 1.647E+03 | 1.609E+03 |
| ba137m | 1.793E+03 | 1.793E+03 | 1.793E+03 | 1.791E+03 | 1.785E+03 | 1.778E+03 | 1.750E+03 | 1.710E+03 | 1.671E+03 | 1.633E+03 | 1.605E+03 | 1.596E+03 | 1.559E+03 | 1.524E+03 |
| la137 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 |
| la138 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 | 9.687E-12 |
| ce139 | 1.548E-01 | 1.533E-01 | 1.498E-01 | 1.372E-01 | 1.072E-01 | 7.884E-02 | 2.183E-02 | 3.473E-03 | 5.527E-04 | 8.749E-05 | 2.224E-05 | 1.392E-05 | 2.215E-06 | 3.525E-07 |
| ba140 | 4.793E-02 | 4.299E-02 | 3.366E-02 | 1.300E-02 | 9.066E-03 | 3.292E-05 | 1.150E-13 | 7.630E-20 | 1.848E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 5.519E-02 | 4.950E-02 | 3.876E-02 | 1.500E-02 | 1.044E-03 | 3.792E-05 | 3.627E-11 | 8.787E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.245E+02 | 1.193E+02 | 1.084E+02 | 7.464E+01 | 2.626E+01 | 7.151E+00 | 3.112E-02 | 1.297E-05 | 5.408E-09 | 2.207E-12 | 6.683E-15 | 9.199E-16 | 3.835E-19 | 1.599E-22 |
| pr143 | 9.269E-02 | 8.369E-02 | 6.650E-02 | 2.720E-02 | 2.226E-03 | 9.872E-05 | 2.176E-10 | 1.740E-18 | 1.392E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 8.292E-11 | 8.249E-11 | 8.152E-11 | 7.787E-11 | 6.851E-11 | 5.840E-11 | 2.998E-11 | 1.154E-11 | 4.441E-12 | 1.705E-12 | 8.371E-13 | 6.563E-13 | 2.526E-13 | 9.724E-14 |
| ce144 | 8.623E+03 | 8.581E+03 | 8.487E+03 | 8.134E+03 | 7.220E+03 | 6.224E+03 | 3.347E+03 | 1.377E+03 | 5.667E+02 | 2.326E+02 | 1.200E+02 | 9.571E+01 | 3.938E+01 | 1.620E+01 |
| pr144 | 8.623E+03 | 8.581E+03 | 8.488E+03 | 8.134E+03 | 7.220E+03 | 6.224E+03 | 3.347E+03 | 1.377E+03 | 5.667E+02 | 2.326E+02 | 1.200E+02 | 9.571E+01 | 3.938E+01 | 1.621E+01 |
| pr144m | 8.233E+01 | 8.193E+01 | 8.104E+01 | 7.766E+01 | 6.893E+01 | 5.942E+01 | 3.195E+01 | 1.315E+01 | 5.410E+00 | 2.221E+00 | 1.146E+00 | 9.138E-01 | 3.760E-01 | 1.547E-01 |
| nd144 | 1.699E-11 | 1.701E-11 | 1.704E-11 | 1.716E-11 | 1.747E-11 | 1.781E-11 | 1.879E-11 | 1.946E-11 | 1.974E-11 | 1.985E-11 | 1.989E-11 | 1.990E-11 | 1.992E-11 | 1.992E-11 |
| pm144 | 1.805E-08 | 1.798E-08 | 1.782E-08 | 1.724E-08 | 1.570E-08 | 1.397E-08 | 8.586E-09 | 4.276E-09 | 2.130E-09 | 1.059E-09 | 6.300E-10 | 5.275E-10 | 2.627E-10 | 1.309E-10 |
| pm145 | 6.857E-05 | 6.855E-05 | 6.853E-05 | 6.842E-05 | 6.811E-05 | 6.773E-05 | 6.608E-05 | 6.369E-05 | 6.131E-05 | 5.898E-05 | 5.730E-05 | 5.673E-05 | 5.456E-05 | 5.247E-05 |
| sm145 | 1.135E-05 | 1.130E-05 | 1.120E-05 | 1.081E-05 | 9.780E-06 | 8.636E-06 | 5.135E-06 | 2.440E-06 | 1.159E-06 | 5.498E-07 | 3.158E-07 | 2.612E-07 | 1.241E-07 | 5.898E-08 |
| pm146 | 2.055E-03 | 2.054E-03 | 2.051E-03 | 2.039E-03 | 2.005E-03 | 1.963E-03 | 1.799E-03 | 1.587E-03 | 1.400E-03 | 1.235E-03 | 1.125E-03 | 1.089E-03 | 9.611E-04 | 8.480E-04 |
| sm146 | 1.054E-09 | 1.054E-09 | 1.054E-09 | 1.055E-09 | 1.055E-09 | 1.056E-09 | 1.059E-09 | 1.063E-09 | 1.066E-09 | 1.069E-09 | 1.071E-09 | 1.072E-09 | 1.074E-09 | 1.076E-09 |
| nd147 | 2.251E-03 | 1.984E-03 | 1.493E-03 | 4.947E-04 | 2.243E-05 | 4.770E-07 | 4.868E-14 | 4.790E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.114E+03 | 2.111E+03 | 2.104E+03 | 2.078E+03 | 2.005E+03 | 1.919E+03 | 1.596E+03 | 1.225E+03 | 9.410E+02 | 7.221E+02 | 5.931E+02 | 5.545E+02 | 4.259E+02 | 3.270E+02 |
| sm147 | 3.378E-08 | 3.385E-08 | 3.402E-08 | 3.468E-08 | 3.647E-08 | 3.861E-08 | 4.661E-08 | 5.578E-08 | 6.281E-08 | 6.823E-08 | 7.142E-08 | 7.238E-08 | 7.556E-08 | 7.801E-08 |
| eu147 | 2.694E-15 | 2.543E-15 | 2.234E-15 | 1.351E-15 | 3.300E-16 | 5.709E-17 | 3.727E-20 | 1.028E-24 | 2.837E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 5.950E-01 | 5.753E-01 | 5.335E-01 | 3.977E-01 | 1.747E-01 | 6.281E-02 | 8.678E-04 | 1.894E-06 | 4.133E-09 | 8.868E-12 | 9.221E-14 | 1.935E-14 | 4.223E-17 | 9.216E-20 |
| pm148m | 1.232E+01 | 1.192E+01 | 1.105E+01 | 8.237E+00 | 3.619E+00 | 1.300E+00 | 1.798E-02 | 3.923E-05 | 8.560E-08 | 1.837E-10 | 1.910E-12 | 4.009E-13 | 8.748E-16 | 1.909E-18 |
| sm148 | 9.480E-13 | 9.480E-13 | 9.480E-13 | 9.481E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 | 9.482E-13 |
| eu149 | 7.435E-09 | 7.325E-09 | 7.084E-09 | 6.219E-09 | 4.318E-09 | 2.742E-09 | 4.107E-10 | 2.712E-11 | 1.791E-12 | 1.174E-13 | 1.549E-14 | 7.753E-15 | 5.120E-16 | 3.381E-17 |
| nd150 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 | 1.173E-15 |
| sm151 | 7.836E+00 | 7.835E+00 | 7.835E+00 | 7.832E+00 | 7.824E+00 | 7.814E+00 | 7.772E+00 | 7.712E+00 | 7.653E+00 | 7.594E+00 | 7.551E+00 | 7.536E+00 | 7.478E+00 | 7.421E+00 |
| gd151 | 5.950E-06 | 5.884E-06 | 5.738E-06 | 5.203E-06 | 3.957E-06 | 2.813E-06 | 6.764E-07 | 8.792E-08 | 1.143E-08 | 1.477E-09 | 3.229E-10 | 1.920E-10 | 2.496E-11 | 3.244E-12 |
| eu152 | 6.053E-02 | 6.051E-02 | 6.047E-02 | 6.032E-02 | 5.991E-02 | 5.940E-02 | 5.732E-02 | 5.446E-02 | 5.174E-02 | 4.915E-02 | 4.731E-02 | 4.670E-02 | 4.437E-02 | 4.216E-02 |
| gd152 | 1.630E-14 | 1.630E-14 | 1.630E-14 | 1.630E-14 | 1.632E-14 | 1.634E-14 | 1.641E-14 | 1.651E-14 | 1.660E-14 | 1.670E-14 | 1.676E-14 | 1.678E-14 | 1.686E-14 | 1.694E-14 |
| gd153 | 1.113E-01 | 1.107E-01 | 1.092E-01 | 1.039E-01 | 9.018E-02 | 7.563E-02 | 3.626E-02 | 1.266E-02 | 4.419E-03 | 1.538E-03 | 7.020E-04 | 5.369E-04 | 1.874E-04 | 6.543E-05 |
| eu154 | 2.108E+02 | 2.107E+02 | 2.105E+02 | 2.096E+02 | 2.074E+02 | 2.046E+02 | 1.934E+02 | 1.785E+02 | 1.646E+02 | 1.519E+02 | 1.430E+02 | 1.401E+02 | 1.293E+02 | 1.193E+02 |
| eu155 | 9.662E+01 | 9.654E+01 | 9.636E+01 | 9.564E+01 | 9.384E+01 | 9.158E+01 | 8.272E+01 | 7.150E+01 | 6.180E+01 | 5.340E+01 | 4.761E+01 | 4.616E+01 | 4.098E+01 | 3.649E+01 |
| eu156 | 9.407E-02 | 8.586E-02 | 6.993E-02 | 3.146E-02 | 3.363E-03 | 2.079E-04 | 1.838E-09 | 1.074E-16 | 6.271E-24 | 3.500E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 2.991E-07 | 2.991E-07 | 2.991E-07 | 2.990E-07 | 2.986E-07 | 2.981E-07 | 2.961E-07 | 2.932E-07 | 2.903E-07 | 2.875E-07 | 2.854E-07 | 2.847E-07 | 2.820E-07 | 2.792E-07 |
| tb158 | 1.714E-05 | 1.714E-05 | 1.714E-05 | 1.714E-05 | 1.713E-05 | 1.712E-05 | 1.707E-05 | 1.700E-05 | 1.694E-05 | 1.687E-05 | 1.683E-05 | 1.681E-05 | 1.674E-05 | 1.668E-05 |
| dy159 | 2.250E-05 | 2.229E-05 | 2.181E-05 | 2.006E-05 | 1.585E-05 | 1.183E-05 | 3.478E-06 | 6.031E-07 | 1.046E-07 | 1.805E-08 | 4.891E-09 | 3.130E-09 | 5.428E-10 | 9.413E-11 |
| tb160 | 3.496E+00 | 3.429E+00 | 3.285E+00 | 2.777E+00 | 1.736E+00 | 9.674E-01 | 8.392E-02 | 2.536E-03 | 7.663E-05 | 2.294E-06 | 1.690E-07 | 6.931E-08 | 2.094E-09 | 6.329E-11 |
| tb161 | 1.254E-09 | 1.026E-09 | 6.528E-10 | 1.127E-10 | 8.243E-13 | 1.807E-15 | 1.386E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.299E-09 | 1.298E-09 | 1.298E-09 | 1.298E-09 |
| ho166m | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.681E-05 | 1.680E-05 | 1.679E-05 | 1.678E-05 | 1.677E-05 | 1.677E-05 | 1.676E-05 | 1.675E-05 |
| tm167 | 1.377E-16 | 1.185E-16 | 8.459E-17 | 2.279E-17 | 5.796E-19 | 5.997E-21 | 3.014E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.306E-07 | 1.287E-07 | 1.244E-07 | 1.092E-07 | 7.585E-08 | 4.816E-08 | 7.214E-09 | 4.764E-10 | 3.146E-11 | 2.062E-12 | 2.722E-13 | 1.362E-13 | 8.994E-15 | 5.939E-16 |
| er169 | 7.711E-10 | 6.653E-10 | 4.773E-10 | 1.312E-10 | 3.526E-12 | 3.910E-14 | 2.624E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 33

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb169 | 2.045E-09 | 1.959E-09 | 1.777E-09 | 1.216E-09 | 4.211E-10 | 1.124E-10 | 4.502E-13 | 1.666E-16 | 6.165E-20 | 2.233E-23 | 6.187E-26 | 8.262E-27 | 3.057E-30 | 0.000E+00 |
| tm170 | 5.261E-03 | 5.205E-03 | 5.080E-03 | 4.623E-03 | 3.550E-03 | 2.555E-03 | 6.464E-04 | 9.038E-05 | 1.264E-05 | 1.758E-06 | 4.057E-07 | 2.458E-07 | 3.436E-08 | 4.805E-09 |
| tm171 | 2.950E-03 | 2.944E-03 | 2.931E-03 | 2.881E-03 | 2.745E-03 | 2.584E-03 | 2.009E-03 | 1.400E-03 | 9.761E-04 | 6.798E-04 | 5.196E-04 | 4.739E-04 | 3.304E-04 | 2.303E-04 |
| total | 5.497E+04 | 5.465E+04 | 5.396E+04 | 5.144E+04 | 4.562E+04 | 4.008E+04 | 2.595E+04 | 1.583E+04 | 1.083E+04 | 8.216E+03 | 7.068E+03 | 6.772E+03 | 5.914E+03 | 5.363E+03 |

1

5 more years for cooling used fuel material fission products page 34

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 9.900E+00 | 9.897E+00 | 9.890E+00 | 9.863E+00 | 9.789E+00 | 9.697E+00 | 9.324E+00 | 8.814E+00 | 8.332E+00 | 7.875E+00 | 7.552E+00 | 7.445E+00 | 7.038E+00 | 6.653E+00 |
| ga | 3.080E-17 | 3.064E-17 | 3.029E-17 | 2.896E-17 | 2.555E-17 | 2.186E-17 | 1.138E-17 | 4.475E-18 | 1.759E-18 | 6.897E-19 | 3.439E-19 | 2.711E-19 | 1.066E-19 | 4.189E-20 |
| ge | 4.714E-08 | 4.633E-08 | 4.456E-08 | 3.831E-08 | 2.510E-08 | 1.482E-08 | 1.641E-09 | 7.026E-11 | 3.009E-12 | 1.277E-13 | 1.221E-14 | 5.470E-15 | 2.343E-16 | 1.007E-17 |
| as | 5.282E-08 | 5.159E-08 | 4.898E-08 | 4.054E-08 | 2.543E-08 | 1.485E-08 | 1.641E-09 | 7.026E-11 | 3.009E-12 | 1.277E-13 | 1.221E-14 | 5.469E-15 | 2.342E-16 | 1.003E-17 |
| se | 1.156E-03 | 1.156E-03 | 1.156E-03 | 1.156E-03 | 1.156E-03 | 1.155E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 |
| kr | 9.900E+01 | 9.897E+01 | 9.889E+01 | 9.858E+01 | 9.774E+01 | 9.669E+01 | 9.244E+01 | 8.667E+01 | 8.126E+01 | 7.618E+01 | 7.261E+01 | 7.143E+01 | 6.698E+01 | 6.280E+01 |
| rb | 3.690E-03 | 3.429E-03 | 2.907E-03 | 1.532E-03 | 2.636E-04 | 3.509E-05 | 1.001E-06 | 2.485E-07 | 2.097E-07 | 2.076E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 | 2.075E-07 |
| sr | 9.526E+02 | 9.452E+02 | 9.294E+02 | 8.762E+02 | 7.795E+02 | 7.209E+02 | 6.682E+02 | 6.511E+02 | 6.356E+02 | 6.205E+02 | 6.094E+02 | 6.057E+02 | 5.913E+02 | 5.772E+02 |
| y | 1.291E+03 | 1.276E+03 | 1.246E+03 | 1.140E+03 | 9.365E+02 | 8.024E+02 | 6.732E+02 | 6.513E+02 | 6.358E+02 | 6.206E+02 | 6.096E+02 | 6.059E+02 | 5.915E+02 | 5.774E+02 |
| zr | 1.402E+03 | 1.372E+03 | 1.306E+03 | 1.081E+03 | 6.360E+02 | 3.286E+02 | 2.081E+01 | 4.228E-01 | 3.069E-02 | 2.315E-02 | 2.301E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 |
| nb | 2.909E+03 | 2.850E+03 | 2.722E+03 | 2.273E+03 | 1.363E+03 | 7.142E+02 | 4.597E+01 | 9.179E-01 | 2.218E-02 | 5.668E-03 | 5.889E-03 | 6.058E-03 | 6.741E-03 | 7.400E-03 |
| mo | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.045E-09 | 6.044E-09 | 6.043E-09 | 6.042E-09 | 6.041E-09 | 6.040E-09 | 6.040E-09 | 6.039E-09 | 6.038E-09 | 6.038E-09 |
| tc | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 | 2.286E-01 |
| ru | 1.068E+04 | 1.062E+04 | 1.051E+04 | 1.009E+04 | 9.081E+03 | 8.045E+03 | 4.978E+03 | 2.521E+03 | 1.276E+03 | 6.451E+02 | 3.885E+02 | 3.266E+02 | 1.654E+02 | 8.375E+01 |
| rh | 1.067E+04 | 1.062E+04 | 1.051E+04 | 1.009E+04 | 9.080E+03 | 8.045E+03 | 4.978E+03 | 2.521E+03 | 1.276E+03 | 6.451E+02 | 3.885E+02 | 3.267E+02 | 1.654E+02 | 8.376E+01 |
| pd | 4.305E-03 | 4.305E-03 | 4.303E-03 | 4.300E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 | 4.297E-03 |
| ag | 1.003E+02 | 9.970E+01 | 9.846E+01 | 9.380E+01 | 8.187E+01 | 6.912E+01 | 3.406E+01 | 1.237E+01 | 4.493E+00 | 1.627E+00 | 7.652E-01 | 5.912E-01 | 2.148E-01 | 7.813E-02 |
| cd | 3.411E-01 | 3.313E-01 | 3.103E-01 | 2.412E-01 | 1.232E-01 | 5.958E-02 | 1.801E-02 | 1.471E-02 | 1.301E-02 | 1.180E-02 | 1.111E-02 | 1.091E-02 | 1.019E-02 | 9.593E-03 |
| in | 2.288E-04 | 2.224E-04 | 2.086E-04 | 1.626E-04 | 8.103E-05 | 3.407E-05 | 9.212E-07 | 2.492E-07 | 2.450E-09 | 4.347E-11 | 1.762E-12 | 5.478E-13 | 4.380E-13 | 2.103E-13 |
| sn | 1.365E+01 | 1.354E+01 | 1.329E+01 | 1.238E+01 | 1.020E+01 | 8.124E+00 | 3.716E+00 | 1.937E+00 | 1.442E+00 | 1.260E+00 | 1.195E+00 | 1.179E+00 | 1.135E+00 | 1.107E+00 |
| sb | 2.030E+02 | 2.027E+02 | 2.020E+02 | 1.994E+02 | 1.924E+02 | 1.843E+02 | 1.544E+02 | 1.201E+02 | 9.344E+01 | 7.264E+01 | 6.025E+01 | 5.651E+01 | 4.397E+01 | 3.420E+01 |
| te | 1.266E+02 | 1.254E+02 | 1.226E+02 | 1.129E+02 | 9.233E+01 | 7.514E+01 | 4.366E+01 | 2.998E+01 | 2.293E+01 | 1.779E+01 | 1.475E+01 | 1.384E+01 | 1.076E+01 | 8.374E+00 |
| i | 7.019E-04 | 6.995E-04 | 6.955E-04 | 6.888E-04 | 6.868E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 | 6.867E-04 |
| xe | 4.445E-04 | 3.977E-04 | 3.102E-04 | 1.214E-04 | 1.364E-05 | 2.630E-06 | 1.921E-08 | 1.840E-11 | 1.763E-14 | 1.657E-17 | 9.332E-20 | 1.588E-20 | 1.521E-23 | 1.458E-26 |
| cs | 4.819E+03 | 4.814E+03 | 4.801E+03 | 4.753E+03 | 4.621E+03 | 4.464E+03 | 3.894E+03 | 3.269E+03 | 2.811E+03 | 2.472E+03 | 2.277E+03 | 2.219E+03 | 2.029E+03 | 1.882E+03 |
| ba | 1.793E+03 | 1.793E+03 | 1.793E+03 | 1.791E+03 | 1.785E+03 | 1.778E+03 | 1.750E+03 | 1.710E+03 | 1.671E+03 | 1.633E+03 | 1.605E+03 | 1.596E+03 | 1.559E+03 | 1.524E+03 |
| la | 5.519E-02 | 4.951E-02 | 3.876E-02 | 1.500E-02 | 1.044E-03 | 3.819E-05 | 2.772E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 | 2.771E-07 |
| ce | 8.747E+03 | 8.700E+03 | 8.596E+03 | 8.208E+03 | 7.246E+03 | 6.231E+03 | 3.347E+03 | 1.377E+03 | 5.667E+02 | 2.326E+02 | 1.200E+02 | 9.571E+01 | 3.938E+01 | 1.620E+01 |
| pr | 8.705E+03 | 8.663E+03 | 8.569E+03 | 8.212E+03 | 7.289E+03 | 6.283E+03 | 3.379E+03 | 1.390E+03 | 5.721E+02 | 2.348E+02 | 1.212E+02 | 9.663E+01 | 3.976E+01 | 1.636E+01 |
| nd | 2.251E-03 | 1.984E-03 | 1.493E-03 | 4.947E-04 | 2.243E-05 | 4.770E-07 | 1.884E-11 | 1.946E-11 | 1.974E-11 | 1.985E-11 | 1.989E-11 | 1.990E-11 | 1.992E-11 | 1.993E-11 |
| pm | 2.127E+03 | 2.124E+03 | 2.116E+03 | 2.086E+03 | 2.009E+03 | 1.920E+03 | 1.596E+03 | 1.225E+03 | 9.410E+02 | 7.221E+02 | 5.931E+02 | 5.545E+02 | 4.259E+02 | 3.270E+02 |
| sm | 7.836E+00 | 7.835E+00 | 7.835E+00 | 7.832E+00 | 7.824E+00 | 7.814E+00 | 7.772E+00 | 7.712E+00 | 7.653E+00 | 7.594E+00 | 7.551E+00 | 7.536E+00 | 7.478E+00 | 7.421E+00 |
| eu | 3.075E+02 | 3.073E+02 | 3.069E+02 | 3.013E+02 | 2.963E+02 | 2.954E+02 | 2.732E+02 | 2.265E+02 | 2.025E+02 | 1.910E+02 | 1.863E+02 | 1.692E+02 | 1.558E+02 | |
| gd | 1.113E-01 | 1.107E-01 | 1.092E-01 | 1.039E-01 | 9.018E-02 | 7.564E-02 | 3.626E-02 | 1.266E-02 | 4.419E-03 | 1.538E-03 | 7.020E-04 | 5.369E-04 | 1.874E-04 | 6.543E-05 |
| tb | 3.496E+00 | 3.429E+00 | 3.285E+00 | 2.777E+00 | 1.736E+00 | 9.674E-01 | 8.394E-02 | 2.553E-03 | 9.386E-05 | 1.945E-05 | 1.728E-05 | 1.716E-05 | 1.703E-05 | 1.696E-05 |
| dy | 2.250E-05 | 2.229E-05 | 2.181E-05 | 2.006E-05 | 1.585E-05 | 1.183E-05 | 3.478E-06 | 6.031E-07 | 1.046E-07 | 1.805E-08 | 4.891E-09 | 3.130E-09 | 5.428E-10 | 9.413E-11 |
| ho | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.682E-05 | 1.681E-05 | 1.680E-05 | 1.679E-05 | 1.678E-05 | 1.678E-05 | 1.677E-05 | 1.676E-05 | 1.675E-05 |
| er | 7.711E-10 | 6.653E-10 | 4.773E-10 | 1.312E-10 | 3.526E-12 | 3.910E-14 | 2.624E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 8.211E-03 | 8.149E-03 | 8.011E-03 | 7.504E-03 | 6.295E-03 | 5.139E-03 | 2.655E-03 | 1.491E-03 | 9.888E-04 | 6.816E-04 | 5.200E-04 | 4.742E-04 | 3.304E-04 | 2.303E-04 |
| yb | 2.045E-09 | 1.959E-09 | 1.777E-09 | 1.216E-09 | 4.211E-10 | 1.124E-10 | 4.502E-13 | 1.666E-16 | 6.165E-20 | 2.233E-23 | 6.187E-26 | 8.262E-27 | 3.057E-30 | 0.000E+00 |
| totals | 5.497E+04 | 5.465E+04 | 5.396E+04 | 5.144E+04 | 4.562E+04 | 4.008E+04 | 2.595E+04 | 1.583E+04 | 1.083E+04 | 8.216E+03 | 7.068E+03 | 6.772E+03 | 5.914E+03 | 5.363E+03 |

1

5 more years for cooling used fuel material fission products page 35

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 3.339E-04 | 3.338E-04 | 3.336E-04 | 3.327E-04 | 3.302E-04 | 3.271E-04 | 3.145E-04 | 2.973E-04 | 2.810E-04 | 2.656E-04 | 2.547E-04 | 2.511E-04 | 2.374E-04 | 2.244E-04 |
| ga 68 | 3.087E-19 | 3.071E-19 | 3.036E-19 | 2.903E-19 | 2.561E-19 | 2.191E-19 | 1.141E-19 | 4.486E-20 | 1.763E-20 | 6.912E-21 | 3.447E-21 | 2.717E-21 | 1.068E-21 | 4.199E-22 |
| ge 71 | 2.646E-16 | 2.344E-16 | 1.784E-16 | 6.174E-17 | 3.162E-18 | 7.825E-20 | 1.505E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 1.848E-11 | 1.817E-11 | 1.748E-11 | 1.503E-11 | 9.843E-12 | 5.814E-12 | 6.434E-13 | 2.755E-14 | 1.180E-15 | 5.009E-17 | 4.787E-18 | 2.145E-18 | 9.186E-20 | 3.933E-21 |
| as 73 | 2.725E-12 | 2.678E-12 | 2.576E-12 | 2.215E-12 | 1.451E-12 | 8.570E-13 | 9.485E-14 | 4.062E-15 | 1.739E-16 | 7.384E-18 | 7.057E-19 | 3.162E-19 | 1.354E-20 | 5.798E-22 |
| as 74 | 3.454E-11 | 3.195E-11 | 2.680E-11 | 1.354E-11 | 2.003E-12 | 1.855E-13 | 8.881E-18 | 5.824E-24 | 3.819E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 4.725E-09 | 4.671E-09 | 4.551E-09 | 4.113E-09 | 3.097E-09 | 2.176E-09 | 4.976E-10 | 6.020E-11 | 7.284E-12 | 8.762E-13 | 1.816E-13 | 1.060E-13 | 1.283E-14 | 1.552E-15 |
| se 79 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 | 3.818E-07 |
| kr 81 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 | 8.518E-13 |
| kr 83m | 3.205E-09 | 3.153E-09 | 3.041E-09 | 

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sr 89 | 9.310E-01 | 9.058E-01 | 8.516E-01 | 6.698E-01 | 3.420E-01 | 1.481E-01 | 4.482E-03 | 2.999E-05 | 2.007E-07 | 1.325E-09 | 3.174E-11 | 8.863E-12 | 5.930E-14 | 3.968E-16 | |
| y 89m | 1.394E-04 | 1.356E-04 | 1.275E-04 | 1.003E-04 | 5.120E-05 | 2.218E-05 | 6.710E-07 | 4.490E-09 | 3.004E-11 | 1.983E-13 | 4.752E-15 | 1.327E-15 | 8.878E-18 | 5.941E-20 | |
| sr 90 | 7.942E-01 | 7.941E-01 | 7.938E-01 | 7.929E-01 | 7.904E-01 | 7.872E-01 | 7.741E-01 | 7.557E-01 | 7.377E-01 | 7.201E-01 | 7.073E-01 | 7.030E-01 | 6.863E-01 | 6.700E-01 | |
| y 90 | 3.785E+00 | 3.785E+00 | 3.784E+00 | 3.779E+00 | 3.767E+00 | 3.752E+00 | 3.690E+00 | 3.602E+00 | 3.516E+00 | 3.432E+00 | 3.371E+00 | 3.351E+00 | 3.271E+00 | 3.193E+00 | |
| y 91 | 2.179E+00 | 2.127E+00 | 2.017E+00 | 1.639E+00 | 9.174E-01 | 4.454E-01 | 2.172E-02 | 2.876E-04 | 3.810E-06 | 4.987E-08 | 1.988E-09 | 6.606E-10 | 8.751E-12 | 1.159E-13 | |
| nb 91 | 8.194E-14 | 8.194E-14 | 8.194E-14 | 8.193E-14 | 8.192E-14 | 8.191E-14 | 8.185E-14 | 8.177E-14 | 8.168E-14 | 8.160E-14 | 8.154E-14 | 8.152E-14 | 8.143E-14 | 8.135E-14 | |
| nb 91m | 1.951E-15 | 1.907E-15 | 1.812E-15 | 1.484E-15 | 8.494E-16 | 4.240E-16 | 2.323E-17 | 3.637E-19 | 5.692E-21 | 8.809E-23 | 3.977E-24 | 1.379E-24 | 2.158E-26 | 3.379E-28 | |
| nb 92 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | 1.173E-14 | |
| nb 92m | 9.644E-17 | 8.413E-17 | 6.187E-17 | 1.873E-17 | 6.595E-19 | 1.023E-20 | 2.800E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| zr 93 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | 2.597E-06 | |
| nb 93m | 3.578E-07 | 3.586E-07 | 3.605E-07 | 3.677E-07 | 3.880E-07 | 4.131E-07 | 5.159E-07 | 5.579E-07 | 7.939E-07 | 9.246E-07 | 1.018E-06 | 1.049E-06 | 1.169E-06 | 1.283E-06 | |
| mo 93 | 5.785E-13 | 5.785E-13 | 5.785E-13 | 5.785E-13 | 5.784E-13 | 5.784E-13 | 5.784E-13 | 5.783E-13 | 5.782E-13 | 5.781E-13 | 5.780E-13 | 5.780E-13 | 5.779E-13 | 5.778E-13 | |
| nb 94 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.720E-08 | 8.719E-08 | 8.719E-08 | 8.719E-08 | 8.719E-08 | 8.718E-08 | |
| zr 95 | 7.063E+00 | 6.912E+00 | 6.584E+00 | 5.447E+00 | 3.205E+00 | 1.656E+00 | 1.048E-01 | 2.015E-03 | 3.875E-05 | 7.373E-07 | 3.880E-08 | 1.418E-08 | 2.727E-10 | 5.245E-12 | |
| nb 95 | 1.387E+01 | 1.359E+01 | 1.298E+01 | 1.084E+01 | 6.501E+00 | 3.407E+00 | 2.193E-01 | 4.362E-03 | 8.399E-05 | 1.597E-06 | 8.161E-08 | 2.977E-08 | 5.904E-10 | 1.137E-11 | |
| nb 95m | 2.371E-02 | 2.321E-02 | 2.210E-02 | 1.829E-02 | 1.076E-02 | 5.560E-03 | 3.517E-04 | 6.765E-06 | 1.301E-07 | 2.475E-09 | 1.303E-10 | 4.760E-11 | 9.155E-13 | 1.761E-14 | |
| tc 95 | 7.517E-16 | 7.348E-16 | 6.982E-16 | 5.723E-16 | 3.279E-16 | 1.640E-16 | 9.044E-18 | 1.429E-19 | 2.259E-21 | 3.529E-23 | 1.604E-24 | 5.577E-25 | 8.813E-27 | 0.000E+00 | |
| tc 95m | 1.673E-14 | 1.635E-14 | 1.554E-14 | 1.274E-14 | 7.299E-15 | 3.649E-15 | 2.013E-16 | 3.181E-18 | 5.027E-20 | 7.854E-22 | 3.571E-23 | 1.241E-23 | 1.961E-25 | 3.100E-27 | |
| zr 96 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | 2.263E-17 | |
| tc 97 | 1.351E-14 | 1.351E-14 | 1.351E-14 | 1.353E-14 | 1.356E-14 | 1.359E-14 | 1.363E-14 | 1.364E-14 | 1.364E-14 | 1.364E-14 | 1.364E-14 | 1.364E-14 | 1.364E-14 | 1.364E-14 | |
| tc 97m | 1.198E-08 | 1.180E-08 | 1.140E-08 | 9.980E-09 | 6.871E-09 | 4.317E-09 | 6.190E-10 | 3.839E-11 | 2.381E-12 | 1.466E-13 | 1.846E-14 | 9.091E-15 | 5.639E-16 | 3.497E-17 | |
| tc 98 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | 1.198E-09 | |
| tc 99 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | 7.480E-05 | |
| rh 99 | 1.792E-18 | 1.644E-18 | 1.354E-18 | 6.376E-19 | 7.733E-20 | 5.595E-21 | 9.547E-26 | 1.430E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| mo100 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | 7.509E-17 | |
| rh101 | 1.548E-08 | 1.546E-08 | 1.542E-08 | 1.527E-08 | 1.484E-08 | 1.433E-08 | 1.238E-08 | 1.003E-08 | 8.133E-09 | 6.589E-09 | 5.635E-09 | 5.342E-09 | 4.330E-09 | 3.510E-09 | |
| rh102 | 2.891E-04 | 2.872E-04 | 2.829E-04 | 2.668E-04 | 2.266E-04 | 1.848E-04 | 7.889E-05 | 2.340E-05 | 7.008E-06 | 2.146E-06 | 9.253E-07 | 7.032E-07 | 2.658E-07 | 1.268E-07 | |
| rh102m | 3.266E-04 | 3.263E-04 | 3.255E-04 | 3.226E-04 | 3.147E-04 | 3.051E-04 | 2.681E-04 | 2.228E-04 | 1.852E-04 | 1.538E-04 | 1.340E-04 | 1.278E-04 | 1.062E-04 | 8.826E-05 | |
| ru103 | 1.318E+00 | 1.273E+00 | 1.175E+00 | 8.628E-01 | 3.631E-01 | 1.237E-01 | 1.369E-03 | 2.171E-06 | 3.444E-09 | 5.367E-12 | 4.400E-14 | 8.514E-15 | 1.351E-17 | 2.142E-20 | |
| rh103m | 9.025E-02 | 8.712E-02 | 8.047E-02 | 5.907E-02 | 2.486E-02 | 8.466E-03 | 9.370E-05 | 1.486E-07 | 2.358E-10 | 3.675E-13 | 3.012E-15 | 5.829E-16 | 9.246E-19 | 1.467E-21 | |
| pd103 | 1.024E-09 | 9.440E-10 | 7.857E-10 | 3.848E-10 | 5.213E-11 | 4.328E-12 | 1.314E-16 | 4.484E-23 | 1.531E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| ag105 | 1.472E-14 | 1.423E-14 | 1.320E-14 | 9.837E-15 | 4.321E-15 | 1.552E-15 | 2.147E-17 | 4.682E-19 | 1.002E-22 | 2.194E-25 | 2.281E-27 | 4.787E-28 | 1.045E-30 | 2.280E-33 | |
| ru106 | 6.112E-01 | 6.089E-01 | 6.039E-01 | 5.845E-01 | 5.334E-01 | 4.761E-01 | 2.960E-01 | 1.499E-01 | 7.588E-02 | 3.835E-02 | 2.310E-02 | 1.942E-02 | 9.834E-03 | 4.979E-03 | |
| rh106 | 9.869E+01 | 9.832E+01 | 9.750E+01 | 9.437E+01 | 8.613E+01 | 7.687E+01 | 4.779E+01 | 2.420E+01 | 1.225E+01 | 6.193E+00 | 3.729E+00 | 3.136E+00 | 1.588E+00 | 8.040E-01 | |

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5 more years for cooling used fuel material fission products page 36

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag106m | 1.529E-18 | 1.293E-18 | 8.872E-19 | 2.050E-19 | 3.391E-21 | 2.054E-23 | 1.101E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 | 2.514E-07 |
| ag108 | 2.403E-08 | 2.403E-08 | 2.403E-08 | 2.403E-08 | 2.402E-08 | 2.402E-08 | 2.399E-08 | 2.395E-08 | 2.392E-08 | 2.388E-08 | 2.385E-08 | 2.384E-08 | 2.380E-08 | 2.377E-08 |
| ag108m | 7.215E-07 | 7.215E-07 | 7.215E-07 | 7.215E-07 | 7.213E-07 | 7.211E-07 | 7.203E-07 | 7.192E-07 | 7.180E-07 | 7.169E-07 | 7.161E-07 | 7.158E-07 | 7.146E-07 | 7.135E-07 |
| ag109m | 4.259E-06 | 4.246E-06 | 4.217E-06 | 4.108E-06 | 3.816E-06 | 3.482E-06 | 2.374E-06 | 1.372E-06 | 7.928E-07 | 4.575E-07 | 3.040E-07 | 2.644E-07 | 1.528E-07 | 8.829E-08 |
| cd109 | 1.033E-06 | 1.030E-06 | 1.023E-06 | 9.961E-07 | 9.254E-07 | 8.444E-07 | 5.756E-07 | 3.327E-07 | 1.922E-07 | 1.109E-07 | 7.372E-08 | 6.411E-08 | 3.705E-08 | 2.141E-08 |
| ag110 | 9.637E-03 | 9.584E-03 | 9.465E-03 | 9.016E-03 | 7.870E-03 | 6.644E-03 | 3.274E-03 | 1.189E-03 | 4.317E-04 | 1.563E-04 | 7.350E-05 | 5.678E-05 | 2.062E-05 | 7.487E-06 |
| ag110m | 1.662E+00 | 1.653E+00 | 1.633E+00 | 1.555E+00 | 1.357E+00 | 1.146E+00 | 5.646E-01 | 2.050E-01 | 7.445E-02 | 2.696E-02 | 1.267E-02 | 9.791E-03 | 3.555E-03 | 1.291E-03 |
| ag111 | 6.503E-10 | 5.399E-10 | 3.552E-10 | 6.972E-11 | 7.301E-13 | 2.504E-15 | 1.244E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 | 8.817E-19 |
| cd113m | 1.468E-05 | 1.467E-05 | 1.467E-05 | 1.463E-05 | 1.454E-05 | 1.442E-05 | 1.393E-05 | 1.326E-05 | 1.263E-05 | 1.202E-05 | 1.159E-05 | 1.144E-05 | 1.089E-05 | 1.037E-05 |
| in113m | 2.280E-11 | 2.253E-11 | 2.192E-11 | 1.973E-11 | 1.469E-11 | 1.017E-11 | 2.190E-12 | 2.431E-13 | 2.698E-14 | 2.977E-15 | 5.785E-16 | 3.304E-16 | 3.667E-17 | 4.070E-18 |
| sn113 | 1.731E-12 | 1.711E-12 | 1.665E-12 | 1.498E-12 | 1.115E-12 | 7.725E-13 | 1.663E-13 | 1.846E-14 | 2.049E-15 | 2.260E-16 | 4.393E-17 | 2.509E-17 | 2.785E-18 | 3.091E-19 |
| in114 | 4.407E-07 | 4.286E-07 | 4.024E-07 | 3.150E-07 | 1.586E-07 | 6.752E-08 | 1.901E-09 | 1.147E-11 | 6.925E-14 | 4.121E-16 | 9.146E-18 | 2.487E-18 | 1.501E-20 | 9.061E-23 |
| in114m | 1.308E-07 | 1.272E-07 | 1.194E-07 | 9.345E-08 | 4.706E-08 | 2.003E-08 | 5.640E-10 | 3.404E-12 | 2.055E-14 | 1.223E-16 | 2.713E-18 | 7.380E-19 | 4.454E-21 | 2.688E-23 |
| cd115m | 1.207E-03 | 1.170E-03 | 1.091E-03 | 8.310E-04 | 3.878E-04 | 1.501E-04 | 2.843E-06 | 9.727E-09 | 3.328E-11 | 1.121E-13 | 1.629E-15 | 3.835E-16 | 1.312E-18 | 4.489E-21 |
| in115 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 | 2.688E-16 |
| in115m | 6.728E-08 | 6.526E-08 | 6.081E-08 | 4.632E-08 | 2.161E-08 | 8.368E-09 | 1.585E-10 | 5.421E-13 | 1.855E-15 | 6.248E-18 | 9.082E-20 | 2.137E-20 | 7.313E-23 | 2.502E-25 |
| cd116 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 | 1.287E-19 |
| sn117m | 1.840E-08 | 1.662E-08 | 1.321E-08 | 5.416E-09 | 4.457E-10 | 1.990E-11 | 4.513E-17 | 3.761E-25 | 3.134E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 1.831E-03 | 1.823E-03 | 1.803E-03 | 1.730E-03 | 1.541E-03 | 1.334E-03 | 7.296E-04 | 3.077E-04 | 1.297E-04 | 5.458E-05 | 2.868E-05 | 2.302E-05 | 9.705E-06 | 4.093E-06 |
| sb120m | 5.022E-18 | 3.948E-18 | 2.297E-18 | 2.796E-19 | 7.686E-22 | 4.985E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 3.663E-04 | 3.663E-04 | 3.662E-04 | 3.660E-04 | 3.652E-04 | 3.642E-04 | 3.602E-04 | 3.546E-04 | 3.490E-04 | 3.435E-04 | 3.395E-04 | 3.382E-04 | 3.329E-04 | 3.277E-04 |
| sn121m | 1.548E-04 | 1.548E-04 | 1.548E-04 | 1.547E-04 | 1.543E-04 | 1.539E-04 | 1.522E-04 | 1.499E-04 | 1.475E-04 | 1.452E-04 | 1.435E-04 | 1.429E-04 | 1.407E-04 | 1.385E-04 |
| te121 | 1.100E-07 | 1.091E-07 | 1.070E-07 | 9.938E-08 | 8.080E-08 | 6.245E-08 | 2.129E-08 | 4.559E-09 | 9.766E-10 | 2.083E-10 | 6.609E-11 | 4.462E-11 | 9.558E-12 | 2.047E-12 |
| te121m | 5.509E-08 | 5.463E-08 | 5.360E-08 | 4.978E-08 | 4.048E-08 | 3.129E-08 | 1.066E-08 | 2.284E-09 | 4.893E-10 | 1.044E-10 | 3.311E-11 | 2.236E-11 | 4.789E-12 | 1.026E-12 |
| sn123 | 2.794E-02 | 2.764E-02 | 2.699E-02 | 2.457E-02 | 1.889E-02 | 1.362E-02 | 3.467E-03 | 4.892E-04 | 6.903E-05 | 9.689E-06 | 2.252E-06 | 1.367E-06 | 1.929E-07 | 2.722E-08 |
| te123m | 1.032E-04 | 1.020E-04 | 9.937E-05 | 8.976E-05 | 6.750E-05 | 4.735E-05 | 1.075E-05 | 1.287E-06 | 1.541E-07 | 1.834E-08 | 3.771E-09 | 2.196E-09 | 2.629E-10 | 3.148E-11 |
| sb124 | 1.630E-02 | 1.592E-02 | 1.512E-02 | 1.236E-02 | 7.031E-03 | 3.483E-03 | 1.849E-04 | 2.765E-06 | 4.135E-08 | 6.113E-10 | 2.668E-11 | 9.143E-12 | 1.367E-13 | 2.045E-15 |
| sn125 | 3.830E-08 | 3.317E-08 | 2.400E-08 | 6.819E-09 | 2.012E-10 | 2.504E-12 | 1.727E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 6.380E-01 | 6.372E-01 | 6.352E-01 | 6.276E-01 | 6.068E-01 | 5.818E-01 | 4.882E-01 | 3.798E-01 | 2.955E-01 | 2.297E-01 | 1.905E-01 | 1.787E-01 | 1.390E-01 | 1.081E-01 |
| te125m | 4.235E-02 | 4.230E-02 | 4.218E-02 | 4.171E-02 | 4.041E-02 | 3.880E-02 | 3.259E-02 | 2.536E-02 | 1.973E-02 | 1.534E-02 | 1.272E-02 | 1.193E-02 | 9.281E-03 | 7.220E-03 |
| i125 | 1.076E-10 | 1.051E-10 | 9.974E-11 | 8.132E-11 | 4.590E-11 | 2.253E-11 | 1.149E-12 | 1.624E-14 | 2.295E-16 | 3.206E-18 | 1.341E-19 | 4.531E-20 | 6.404E-22 | 9.050E-24 |
| sn126 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 | 6.864E-06 |
| sb126 | 1.861E-05 | 1.860E-05 | 1.855E-05 | 1.840E-05 | 1.831E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 | 1.830E-05 |
| sb126m | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 | 9.205E-05 |
| i126 | 2.258E-10 | 2.029E-10 | 1.594E-10 | 6.237E-11 | 4.510E-12 | 1.714E-13 | 1.000E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 1.693E-18 | 1.181E-18 | 5.254E-19 | 2.250E-20 | 3.318E-24 | 5.639E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 4.673E-02 | 4.614E-02 | 4.485E-02 | 4.011E-02 | 2.937E-02 | 1.993E-02 | 3.938E-03 | 3.866E-04 | 3.795E-05 | 3.701E-06 | 6.564E-07 | 3.633E-07 | 3.567E-08 | 3.501E-09 |
| te127m | 1.917E-02 | 1.892E-02 | 1.839E-02 | 1.645E-02 | 1.205E-02 | 8.174E-03 | 1.615E-03 | 1.585E-04 | 1.556E-05 | 1.518E-06 | 2.692E-07 | 1.490E-07 | 1.463E-08 | 1.436E-09 |
| xe127 | 5.869E-08 | 5.650E-08 | 5.186E-08 | 3.716E-08 | 1.462E-08 | 4.575E-09 | 3.560E-11 | 3.411E-14 | 3.268E-17 | 3.072E-20 | 1.730E-22 | 2.943E-23 | 2.820E-26 | 2.702E-29 |
| te128 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 | 1.817E-18 |
| te129 | 1.118E-02 | 1.072E-02 | 9.773E-03 | 6.812E-03 | 2.479E-03 | 7.042E-04 | 3.657E-06 | 1.963E-09 | 1.054E-12 | 5.543E-16 | 2.027E-18 | 2.976E-19 | 1.597E-22 | 8.576E-26 |
| te129m | 8.991E-03 | 8.628E-03 | 7.863E-03 | 5.480E-03 | 1.994E-03 | 5.666E-04 | 2.942E-06 | 1.579E-09 | 8.479E-13 | 4.459E-16 | 1.631E-18 | 2.394E-19 | 1.285E-22 | 6.900E-26 |
| i129 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 | 3.026E-07 |
| xe129m | 4.069E-12 | 3.481E-12 | 2.450E-12 | 6.250E-13 | 1.364E-14 | 1.166E-16 | 2.645E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 5.062E-08 | 4.259E-08 | 2.888E-08 | 6.369E-09 | 9.248E-11 | 4.763E-13 | 1.296E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 3.987E-07 | 3.547E-07 | 2.725E-07 | 9.786E-08 | 5.558E-09 | 1.563E-10 | 5.136E-17 | 2.695E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.328E-15 | 2.018E-15 | 1.463E-15 | 4.194E-16 | 1.272E-17 | 1.657E-19 | 3.474E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 6.864E-17 | 6.085E-17 | 4.639E-17 | 1.616E-17 | 8.428E-19 | 2.133E-20 | 4.507E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.738E-14 | 1.403E-14 | 8.671E-15 | 1.334E-15 | 7.059E-18 | 1.035E-20 | 1.475E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe133 | 5.988E-13 | 4.597E-13 | 2.535E-13 | 2.508E-14 | 3.854E-17 | 1.212E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 37

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba133 | 2.289E-06 | 2.288E-06 | 2.286E-06 | 2.279E-06 | 2.259E-06 | 2.234E-06 | 2.134E-06 | 1.998E-06 | 1.870E-06 | 1.751E-06 | 1.667E-06 | 1.639E-06 | 1.535E-06 | 1.437E-06 |
| cs134 | 2.980E+01 | 2.975E+01 | 2.962E+01 | 2.915E+01 | 2.787E+01 | 2.635E+01 | 2.084E+01 | 1.490E+01 | 1.066E+01 | 7.614E+00 | 5.930E+00 | 5.444E+00 | 3.893E+00 | 2.784E+00 |
| cs135 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 | 4.454E-06 |
| cs136 | 3.900E-05 | 3.510E-05 | 2.770E-05 | 1.102E-05 | 8.342E-07 | 3.357E-08 | 4.930E-14 | 2.206E-22 | 9.868E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 4.275E-06 | 3.847E-06 | 3.035E-06 | 1.208E-06 | 9.142E-08 | 3.679E-09 | 5.403E-15 | 2.417E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.014E+00 | 2.014E+00 | 2.014E+00 | 2.011E+00 | 2.005E+00 | 1.997E+00 | 1.965E+00 | 1.921E+00 | 1.877E+00 | 1.834E+00 | 1.803E+00 | 1.792E+00 | 1.752E+00 | 1.712E+00 |
| ba137m | 7.031E+00 | 7.030E+00 | 7.028E+00 | 7.020E+00 | 6.998E+00 | 6.971E+00 | 6.860E+00 | 6.704E+00 | 6.551E+00 | 6.402E+00 | 6.293E+00 | 6.256E+00 | 6.114E+00 | 5.975E+00 |
| la137 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.287E-11 | 5.286E-11 | 5.286E-11 | 5.286E-11 | 5.286E-11 |
| la138 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 | 7.259E-14 |
| ce139 | 1.796E-04 | 1.778E-04 | 1.739E-04 | 1.592E-04 | 1.244E-04 | 9.148E-05 | 5.533E-05 | 4.030E-06 | 6.413E-07 | 1.015E-07 | 2.580E-08 | 1.615E-08 | 2.570E-09 | 4.090E-10 |
| ba140 | 1.422E-04 | 1.275E-04 | 9.985E-05 | 3.857E-05 | 2.689E-06 | 9.766E-08 | 9.343E-14 | 2.263E-22 | 5.483E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 9.303E-04 | 8.345E-04 | 6.534E-04 | 2.529E-04 | 1.760E-05 | 6.391E-07 | 6.115E-13 | 1.481E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.822E-01 | 1.746E-01 | 1.586E-01 | 1.092E-01 | 3.842E-02 | 1.046E-02 | 4.553E-05 | 1.898E-08 | 7.912E-12 | 3.229E-15 | 9.778E-18 | 1.346E-18 | 5.611E-22 | 2.339E-25 |
| pr143 | 1.731E-04 | 1.563E-04 | 1.242E-04 | 5.081E-05 | 4.159E-06 | 1.844E-07 | 4.064E-13 | 3.250E-21 | 2.599E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.592E-13 | 1.584E-13 | 1.566E-13 | 1.495E-13 | 1.316E-13 | 1.122E-13 | 5.756E-14 | 2.216E-14 | 8.529E-15 | 3.274E-15 | 1.607E-15 | 1.260E-15 | 4.851E-16 | 1.867E-16 |
| ce144 | 5.652E+00 | 5.625E+00 | 5.564E+00 | 5.332E+00 | 4.733E+00 | 4.080E+00 | 2.147E+00 | 9.028E-01 | 3.718E-01 | 1.525E-01 | 7.867E-02 | 6.274E-02 | 2.582E-02 | 1.062E-02 |
| pr144 | 6.325E+01 | 6.294E+01 | 6.226E+01 | 5.966E+01 | 5.296E+01 | 4.565E+01 | 2.455E+01 | 1.010E+01 | 4.156E+00 | 1.706E+00 | 8.803E-01 | 7.020E-01 | 2.889E-01 | 1.189E-01 |
| pr144m | 2.853E-02 | 2.839E-02 | 2.808E-02 | 2.691E-02 | 2.389E-02 | 2.059E-02 | 1.107E-02 | 4.557E-03 | 1.875E-03 | 7.697E-04 | 3.971E-04 | 3.167E-04 | 1.303E-04 | 5.362E-05 |
| nd144 | 1.917E-13 | 1.919E-13 | 1.923E-13 | 1.936E-13 | 1.971E-13 | 2.010E-13 | 2.120E-13 | 2.196E-13 | 2.227E-13 | 2.240E-13 | 2.244E-13 | 2.245E-13 | 2.247E-13 | 2.248E-13 |
| pm144 | 1.690E-10 | 1.684E-10 | 1.669E-10 | 1.614E-10 | 1.470E-10 | 1.309E-10 | 8.041E-11 | 4.005E-11 | 1.995E-11 | 9.918E-12 | 5.900E-12 | 4.940E-12 | 2.461E-12 | 1.226E-12 |
| pm145 | 1.831E-08 | 1.831E-08 | 1.830E-08 | 1.827E-08 | 1.819E-08 | 1.809E-08 | 1.765E-08 | 1.701E-08 | 1.637E-08 | 1.575E-08 | 1.530E-08 | 1.515E-08 | 1.457E-08 | 1.401E-08 |
| sm145 | 6.194E-09 | 6.169E-09 | 6.113E-09 | 5.898E-09 | 5.338E-09 | 4.713E-09 | 2.803E-09 | 1.332E-09 | 6.327E-10 | 3.000E-10 | 1.723E-10 | 1.426E-10 | 6.774E-11 | 3.219E-11 |
| pm146 | 1.027E-05 | 1.026E-05 | 1.025E-05 | 1.018E-05 | 1.001E-05 | 9.807E-06 | 8.985E-06 | 7.927E-06 | 6.994E-06 | 6.169E-06 | 5.619E-06 | 5.442E-06 | 4.802E-06 | 4.236E-06 |
| sm146 | 1.579E-11 | 1.580E-11 | 1.580E-11 | 1.581E-11 | 1.582E-11 | 1.583E-11 | 1.587E-11 | 1.592E-11 | 1.597E-11 | 1.602E-11 | 1.605E-11 | 1.606E-11 | 1.609E-11 | 1.613E-11 |
| nd147 | 5.500E-06 | 4.847E-06 | 3.649E-06 | 1.209E-06 | 5.482E-08 | 1.166E-09 | 1.189E-16 | 1.170E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 7.743E-01 | 7.731E-01 | 7.706E-01 | 7.609E-01 | 7.344E-01 | 7.027E-01 | 5.844E-01 | 4.487E-01 | 3.446E-01 | 2.645E-01 | 2.172E-01 | 2.031E-01 | 1.560E-01 | 1.198E-01 |
| sm147 | 4.623E-10 | 4.633E-10 | 4.656E-10 | 4.746E-10 | 4.991E-10 | 5.284E-10 | 6.379E-10 | 7.633E-10 | 8.596E-10 | 9.338E-10 | 9.775E-10 | 9.905E-10 | 1.034E-09 | 1.068E-09 |
| eu147 | 7.620E-18 | 7.194E-18 | 6.320E-18 | 3.821E-18 | 9.335E-19 | 1.615E-19 | 1.054E-22 | 2.909E-27 | 8.027E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 4.598E-03 | 4.446E-03 | 4.123E-03 | 3.073E-03 | 1.350E-03 | 4.854E-04 | 6.707E-06 | 1.464E-08 | 3.194E-11 | 6.854E-14 | 7.126E-16 | 1.496E-16 | 3.264E-19 | 7.122E-22 |
| pm148m | 1.578E-01 | 1.526E-01 | 1.415E-01 | 1.055E-01 | 4.633E-02 | 1.664E-02 | 2.302E-04 | 5.023E-07 | 1.096E-09 | 2.352E-12 | 2.446E-14 | 5.133E-15 | 1.120E-17 | 2.444E-20 |
| sm148 | 1.115E-14 | 1.115E-14 | 1.115E-14 | 1.115E-14 | 1.115E-14 | 1.115E

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     ho166m  1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.732E-07 1.731E-07 1.730E-07 1.729E-07 1.729E-07 1.728E-07 1.727E-07 1.726E-07
     tm167   2.260E-19 1.946E-19 1.389E-19 3.742E-20 9.517E-22 9.847E-24 4.950E-32 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
     tm168   1.043E-09 1.027E-09 9.935E-10 8.721E-10 6.055E-10 3.845E-10 5.759E-11 3.803E-12 2.512E-13 1.646E-14 2.173E-15 1.087E-15 7.180E-17 4.742E-18
     er169   4.695E-13 4.051E-13 2.906E-13 7.987E-14 2.147E-15 2.380E-17 1.597E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
     yb169   5.215E-12 4.994E-12 4.530E-12 3.101E-12 1.074E-12 2.866E-13 1.148E-15 4.247E-19 1.572E-22 5.692E-26 1.577E-28 2.107E-29 7.795E-33 0.000E+00
1
     5 more years for cooling used fuel material                                                    fission products         page   38
0                                                 nuclide thermal power, watts
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     tm170   1.035E-05 1.024E-05 9.998E-06 9.098E-06 6.987E-06 5.029E-06 1.272E-06 1.779E-07 2.487E-08 3.459E-09 7.985E-10 4.837E-10 6.764E-11 9.457E-12
     tm171   4.555E-07 4.546E-07 4.526E-07 4.448E-07 4.238E-07 3.990E-07 3.101E-07 2.162E-07 1.507E-07 1.050E-07 8.022E-08 7.317E-08 5.101E-08 3.556E-08
   total     2.429E+02 2.415E+02 2.386E+02 2.277E+02 2.022E+02 1.774E+02 1.129E+02 6.610E+01 4.258E+01 3.015E+01 2.468E+01 2.327E+01 1.923E+01 1.670E+01
1
     5 more years for cooling used fuel material                                                    fission products         page   39
0                                                 element thermal power, watts
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
       h     3.339E-04 3.338E-04 3.336E-04 3.327E-04 3.302E-04 3.271E-04 3.145E-04 2.973E-04 2.810E-04 2.656E-04 2.547E-04 2.511E-04 2.374E-04 2.244E-04
      ga     3.087E-19 3.071E-19 3.036E-19 2.903E-19 2.561E-19 2.191E-19 1.141E-19 4.486E-20 1.763E-20 6.913E-21 3.447E-21 2.717E-21 1.068E-21 4.199E-22
      ge     1.848E-11 1.817E-11 1.748E-11 1.503E-11 9.843E-12 5.814E-12 6.434E-13 2.755E-14 1.180E-15 5.009E-17 4.787E-18 2.145E-18 9.186E-20 3.936E-21
      as     3.726E-11 3.463E-11 2.938E-11 1.576E-11 3.454E-12 1.042E-12 9.486E-14 4.062E-15 1.739E-16 7.384E-18 7.057E-19 3.162E-19 1.354E-20 5.798E-22
      se     3.865E-07 3.864E-07 3.863E-07 3.859E-07 3.849E-07 3.840E-07 3.823E-07 3.818E-07 3.818E-07 3.818E-07 3.818E-07 3.818E-07 3.818E-07 3.818E-07
      kr     1.484E-01 1.483E-01 1.482E-01 1.477E-01 1.465E-01 1.449E-01 1.385E-01 1.299E-01 1.218E-01 1.142E-01 1.088E-01 1.071E-01 1.004E-01 9.412E-02
      rb     1.676E-05 1.558E-05 1.321E-05 6.973E-06 1.201E-06 1.557E-07 2.517E-09 2.220E-10 1.070E-10 1.008E-10 1.005E-10 1.005E-10 1.005E-10 1.005E-10
      sr     1.725E+00 1.700E+00 1.645E+00 1.463E+00 1.132E+00 9.353E-01 7.786E-01 7.557E-01 7.377E-01 7.201E-01 7.073E-01 7.030E-01 6.863E-01 6.700E-01
       y     5.964E+00 5.913E+00 5.801E+00 5.419E+00 4.685E+00 4.198E+00 3.711E+00 3.602E+00 3.516E+00 3.432E+00 3.371E+00 3.351E+00 3.271E+00 3.193E+00
      zr     7.063E+00 6.912E+00 6.584E+00 5.447E+00 3.205E+00 1.656E+00 1.048E-01 2.017E-03 4.135E-05 3.334E-06 2.636E-06 2.611E-06 2.597E-06 2.597E-06
      nb     1.390E+01 1.362E+01 1.300E+01 1.086E+01 6.512E+00 3.413E+00 2.196E-01 4.369E-03 8.500E-05 2.612E-06 1.187E-06 1.166E-06 1.257E-06 1.371E-06
      mo     5.785E-13 5.785E-13 5.785E-13 5.785E-13 5.785E-13 5.785E-13 5.784E-13 5.783E-13 5.782E-13 5.781E-13 5.781E-13 5.780E-13 5.779E-13 5.778E-13
      tc     7.481E-05 7.481E-05 7.481E-05 7.481E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05 7.480E-05
      ru     1.929E+00 1.881E+00 1.779E+00 1.447E+00 8.966E-01 5.998E-01 2.973E-01 1.499E-01 7.588E-02 3.835E-02 2.310E-02 1.942E-02 9.834E-03 4.979E-03
      rh     9.878E+01 9.841E+01 9.758E+01 9.443E+01 8.616E+01 7.688E+01 4.779E+01 2.420E+01 1.225E+01 6.193E+00 3.730E+00 3.136E+00 1.588E+00 8.041E-01
      pd     2.524E-07 2.523E-07 2.522E-07 2.518E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07 2.514E-07
      ag     1.672E+00 1.662E+00 1.642E+00 1.564E+00 1.365E+00 1.152E+00 5.679E-01 2.062E-01 7.489E-02 2.712E-02 1.275E-02 9.849E-03 3.577E-03 1.299E-03
      cd     1.223E-03 1.186E-03 1.107E-03 8.466E-04 4.032E-04 1.654E-04 1.735E-05 1.360E-05 1.282E-05 1.213E-05 1.166E-05 1.151E-05 1.093E-05 1.039E-05
      in     6.388E-07 6.210E-07 5.826E-07 4.548E-07 2.273E-07 9.593E-08 2.626E-09 1.566E-11 1.189E-13 3.786E-15 8.593E-16 6.025E-16 3.055E-16 2.729E-16
      sn     3.030E-02 3.000E-02 2.932E-02 2.682E-02 2.096E-02 1.547E-02 4.716E-03 1.308E-03 7.022E-04 5.599E-04 5.208E-04 5.123E-04 4.903E-04 4.771E-04
      sb     6.544E-01 6.532E-01 6.504E-01 6.401E-01 6.139E-01 5.854E-01 4.885E-01 3.799E-01 2.956E-01 2.298E-01 1.906E-01 1.788E-01 1.391E-01 1.083E-01
      te     1.285E-01 1.268E-01 1.232E-01 1.107E-01 8.637E-02 6.822E-02 3.816E-02 2.590E-02 1.978E-02 1.534E-02 1.272E-02 1.193E-02 9.281E-03 7.220E-03
       i     3.535E-07 3.455E-07 3.317E-07 3.091E-07 3.027E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07 3.026E-07
      xe     4.574E-07 4.112E-07 3.244E-07 1.350E-07 2.017E-08 4.731E-09 3.560E-11 3.411E-14 3.268E-17 3.072E-20 1.730E-22 2.943E-23 2.820E-26 2.702E-29
      cs     3.182E+01 3.176E+01 3.164E+01 3.116E+01 2.987E+01 2.835E+01 2.281E+01 1.683E+01 1.253E+01 9.448E+00 7.733E+00 7.237E+00 5.644E+00 4.495E+00
      ba     7.031E+00 7.030E+00 7.028E+00 7.020E+00 6.998E+00 6.971E+00 6.860E+00 6.704E+00 6.551E+00 6.402E+00 6.293E+00 6.256E+00 6.114E+00 5.975E+00
      la     9.303E-04 8.345E-04 6.534E-04 2.529E-04 1.760E-05 6.392E-07 5.355E-11 5.294E-11 5.294E-11 5.294E-11 5.294E-11 5.294E-11 5.294E-11 5.294E-11
      ce     5.835E+00 5.800E+00 5.723E+00 5.441E+00 4.771E+00 4.091E+00 2.194E+00 9.028E-01 3.715E-01 1.525E-01 7.867E-02 6.274E-02 2.582E-02 1.062E-02
      pr     6.328E+01 6.297E+01 6.228E+01 5.969E+01 5.298E+01 4.567E+01 2.456E+01 1.011E+01 4.158E+00 1.707E+00 8.807E-01 7.024E-01 2.890E-01 1.189E-01
      nd     5.500E-06 4.847E-06 3.649E-06 1.209E-06 5.482E-08 1.166E-09 2.122E-13 2.196E-13 2.227E-13 2.240E-13 2.244E-13 2.245E-13 2.248E-13 2.248E-13
      pm     9.367E-01 9.302E-01 9.162E-01 8.695E-01 7.821E-01 7.199E-01 5.846E-01 4.488E-01 3.446E-01 2.645E-01 2.172E-01 2.031E-01 1.560E-01 1.198E-01
      sm     9.205E-04 9.204E-04 9.203E-04 9.200E-04 9.190E-04 9.179E-04 9.129E-04 9.059E-04 8.990E-04 8.921E-04 8.870E-04 8.852E-04 8.784E-04 8.717E-04
      eu     1.966E+00 1.965E+00 1.963E+00 1.954E+00 1.933E+00 1.906E+00 1.799E+00 1.656E+00 1.525E+00 1.404E+00 1.320E+00 1.293E+00 1.191E+00 1.097E+00
      gd     9.715E-05 9.659E-05 9.534E-05 9.065E-05 7.871E-05 6.601E-05 3.165E-05 1.105E-05 3.856E-06 1.342E-06 6.127E-07 4.686E-07 1.636E-07 5.711E-08
      tb     2.865E-02 2.811E-02 2.692E-02 2.276E-02 1.423E-02 7.928E-03 6.879E-04 2.088E-05 7.198E-07 1.102E-07 9.253E-08 9.163E-08 9.073E-08 9.036E-08
      dy     7.608E-09 7.535E-09 7.374E-09 6.780E-09 5.359E-09 3.999E-09 1.176E-09 2.039E-10 3.536E-11 6.102E-12 1.654E-12 1.058E-12 1.835E-13 3.182E-14
      ho     1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.733E-07 1.732E-07 1.731E-07 1.730E-07 1.729E-07 1.729E-07 1.728E-07 1.727E-07 1.726E-07
      er     4.695E-13 4.051E-13 2.906E-13 7.987E-14 2.147E-15 2.380E-17 1.597E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
      tm     1.081E-05 1.070E-05 1.045E-05 9.544E-06 7.411E-06 5.428E-06 1.582E-06 3.941E-07 1.756E-07 1.084E-07 8.102E-08 7.366E-08 5.108E-08 3.557E-08
      yb     5.215E-12 4.994E-12 4.530E-12 3.101E-12 1.074E-12 2.866E-13 1.148E-15 4.247E-19 1.572E-22 5.692E-26 1.577E-28 2.107E-29 7.795E-33 0.000E+00
   totals    2.429E+02 2.415E+02 2.386E+02 2.277E+02 2.022E+02 1.774E+02 1.129E+02 6.610E+01 4.258E+01 3.015E+01 2.468E+01 2.327E+01 1.923E+01 1.670E+01

    56$ array     20 entries read

     0t
1  * normal termination of execution *
0                                  table of contents for material tables
0                                    case or subcase printed      page

                                        1                 1
```

# B.3 ORIGEN RESULTS FOR COOLING MOX FUEL ROD C1

```
*****************************************************************************
 *                                                                           *
 *                              SCALE 6.1.3                                  *
 *                             -------------                                 *
 *                             October  2013                                 *
 *                                                                           *
 *          SCALE:  A Comprehensive Modeling and Simulation Suite            *
 *                  for Nuclear Safety Analysis and Design                   *
 *                                                                           *
 *                     Reactor and Nuclear Systems Division                  *
 *                       Oak Ridge National Laboratory                       *
 *                                                                           *
 *                          http://scale.ornl.gov                            *
 *                           scalehelp@ornl.gov                              *
 *                                                                           *
 *****************************************************************************

 *****************************************************************************

                   Job Information
                  ---------------
      Job started on jupiter on Mon 21/10/2013 11:41:46
      Working directory: /tmp/scale.8re.3807
      Input file name  : /home/8re/MOX/c1xmox.inp
      Output file name : /home/8re/MOX/c1xmox.out

 *****************************************************************************
          primary module access and input record ( Scale 6.1 driver )


    module shell will be called at 11:41:48.197 on 10/21/2013.
    sequence specification record:#shell

    Input Data:

      cp $RTNDIR/ft71_mox_c1x ft71f001

    module shell  is finished. completion code     0. total cpu time used .04 seconds.


    module origens will be called at 11:41:48.232 on 10/21/2013.
    sequence specification record:#origens

    Input Data:

      0$$ a11 71 e t
      Decay Case
      3$$ 21 1 1 0 a16 2 a33 0 e t
      35$$ 0 t
      54$$ a1 1 a8 1 a11 0  e
      56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
      57** 0 a3 0.0 e
      95$$ 0 t
      5 more years for cooling used fuel material
      ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
      '
      '
      '                  14      365      365       366       272       93
      '
      '      xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      '      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      ' 60** 2         6.5  24      73      134     389     754     1119    1485    1757     1850    2215    2580
      '
      60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
      61** 1e-20 1e-20 5r1e-20
      65$$
      'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
      t
      56$$ f0 t

    module origens  is finished. completion code     0. total cpu time used .14 seconds.

    Scale is finished at 11:41:48.375 on 10/21/2013
1



        ***********************************************************************************************************
        ***********************************************************************************************************
        ***********************************************************************************************************
        *****                                                                                                     *****
        *****                                    program verification information                                  *****
        *****                                                                                                     *****
        *****                                 code system:  SCALE    version:  6.1                                *****
        *****                                                                                                     *****
        ***********************************************************************************************************
        ***********************************************************************************************************
        *****                                                                                                     *****
        *****                                                                                                     *****
        *****              program:  origen                                                                       *****
        *****                                                                                                     *****
        *****        creation date:  21_feb_2013                                                                  *****
        *****                                                                                                     *****
        *****              library:  /scale/scale6.1/Linux_x86_64/bin                                             *****
        *****                                                                                                     *****
        *****                                                                                                     *****
        *****      production code:  origen                                                                       *****
        *****                                                                                                     *****
        *****             revision:  6.1.2                                                                        *****
        *****                                                                                                     *****
        *****              jobname:  8re                                                                          *****
        *****                                                                                                     *****
        *****         machine name:  jupiter.ornl.gov                                                             *****
        *****                                                                                                     *****
        *****    date of execution:  21_oct_2013                                                                  *****
        *****                                                                                                     *****
        *****    time of execution:  11:41:48.24                                                                  *****
        *****                                                                                                     *****
        *****                                                                                                     *****
        ***********************************************************************************************************
        ***********************************************************************************************************
        ***********************************************************************************************************
1
1            * input echo * (with break between col. 1-72 and 73-80)
0        note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0...............................columns 1-72...............................                ..73-80.

 0$$ a11 71 e t
 Decay Case
 3$$ 21 1 1 0 a16 2 a33 0 e t
 35$$ 0 t
 54$$ a1 1 a8 1 a11 0  e
 56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
 57** 0 a3 0.0 e
 95$$ 0 t
 5 more years for cooling used fuel material
 ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
 '
 '
 '                  14      365      365       366       272       93
 '
```

```
'      xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13                 10/21/1
'      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/                22/13 10
' 60** 2         6.5  24      73      134     389     754     1119    14               85    17
'
 60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
 61** 1e-20 1e-20 5r1e-20
 65$$
 'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
 t
 56$$ f0 t
0when job "fails", make sure no fido input............................................. is out here!


     0$ array     12 entries read

     0t

     3$ array     33 entries read

     0t
1library information...

          cross-section data taken from position number    1 of library on unit 21.

          ******************************************************************************
          *                          ENDF/B-VII.1 decay data                           *
          *                         compiled August 30, 2012                           *
          *                     i.c. gauld, g. ilas, m. pigni                          *
          *                  reactor and nuclear systems division                      *
          *                       oak ridge national laboratory                        *
          ******************************************************************************
0         ******************************************************************************
0                   .other identification and sizes of library.
0                     data set name:  /scale/scale6.1/data/origen.rev03.end7dec
0                 8/31/2012    date library was produced
0                     2237    total number of nuclides in library
                       910    number of light-element nuclides
                       176    number of actinide nuclides
                      1151    number of fission product nuclides
0                     2636    number of nonzero off-diagonal matrix elements
0         ******************************************************************************

    35$ array      1 entries read

     0t

    54$ array     12 entries read

    56$ array     20 entries read

    57* array      5 entries read

    95$ array      1 entries read

     0t


                  14      365      365       366       272       93

       xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/1
       240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10
  60** 2         6.5  24      73      134     389     754     1119    1485    17


    60* array     13 entries read

    61* array      7 entries read
 gram-atoms   grams   curies   watts-all   watts-gamma

    65$ array     63 entries read

     0t
0  obtaining data from position no.   43 on unit no.   71
1
     5 more years for cooling used fuel material                                                    light elements         page    1
0                                                 nuclide concentrations, grams
                                                  basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
                initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     h  1   9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05 9.989E-05
     h  2   2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05 2.137E-05
     h  3   8.873E-07 8.870E-07 8.864E-07 8.840E-07 8.774E-07 8.692E-07 8.357E-07 7.900E-07 7.468E-07 7.059E-07 6.769E-07 6.673E-07 6.308E-07 5.963E-07
    he  3   1.801E-07 1.803E-07 1.809E-07 1.833E-07 1.900E-07 1.982E-07 2.317E-07 2.774E-07 3.206E-07 3.615E-07 3.905E-07 4.001E-07 4.366E-07 4.711E-07
    he  4   5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02 5.826E-02
    li  6   3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12 3.909E-12
    li  7   4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13 4.283E-13
    be  9   3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08 3.711E-08
    be 10   1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06 1.971E-06
     b 10   9.125E-13 9.174E-13 9.286E-13 9.719E-13 1.093E-12 1.244E-12 1.876E-12 2.781E-12 3.685E-12 4.592E-12 5.266E-12 5.496E-12 6.400E-12 7.305E-12
     b 11   1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09 1.124E-09
     c 12   1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03 1.193E-03
     c 13   1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01 1.881E-01
     c 14   5.923E-06 5.923E-06 5.923E-06 5.923E-06 5.923E-06 5.923E-06 5.922E-06 5.921E-06 5.921E-06 5.920E-06 5.919E-06 5.919E-06 5.919E-06 5.918E-06
     n 14   7.286E-08 7.286E-08 7.287E-08 7.290E-08 7.300E-08 7.312E-08 7.362E-08 7.434E-08 7.506E-08 7.578E-08 7.632E-08 7.650E-08 7.722E-08 7.794E-08
     n 15   1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04 1.760E-04
     o 16   2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03 2.022E-03
     o 17   5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04 5.711E-04
     o 18   2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09 2.532E-09
     f 19   1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15 1.805E-15
    na 23   6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16 6.285E-16
    mg 24   6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16
    mg 25   6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16 6.835E-16
    mg 26   7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16
    al 27   7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16
    si 28   7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16 7.659E-16
    si 29   7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16 7.941E-16
    si 30   8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16 8.254E-16
     p 31   8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16
     s 32   8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16 8.741E-16
     s 33   8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16 8.980E-16
     s 34   9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16 9.309E-16
     s 36   9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16 9.844E-16
    cl 35   9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16 9.024E-16
    cl 36   5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17 5.869E-17
    cl 37   1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15 1.022E-15
    ar 36   9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16 9.745E-16
    ar 38   1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15
    ar 39   1.882E-18 1.882E-18 1.882E-18 1.882E-18 1.881E-18 1.880E-18 1.877E-18 1.872E-18 1.867E-18 1.862E-18 1.859E-18 1.858E-18 1.853E-18 1.848E-18
    ar 40   1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15 1.100E-15
     k 39   1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15 1.061E-15
     k 40   1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15 1.045E-15
     k 41   1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15 1.164E-15
    ca 40   1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15
    ca 41   7.172E-19 7.172E-19 7.172E-19 7.172E-19 7.172E-19 7.172E-19 7.172E-19 7.172E-19 7.171E-19 7.171E-19 7.171E-19 7.171E-19 7.171E-19 7.171E-19
    ca 42   1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15 1.152E-15
    ca 43   1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15 1.157E-15
    ca 44   1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15 1.223E-15
    ca 46   1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15
    ca 48   1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15
    sc 45   1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15 1.186E-15
    sc 46   8.048E-19 7.916E-19 7.627E-19 6.599E-19 4.400E-19 2.656E-19 3.222E-20 1.573E-21 7.682E-23 3.720E-24 3.920E-25 1.816E-25 8.869E-27 4.330E-28
1
     5 more years for cooling used fuel material                                                    light elements         page    2
0                                                 nuclide concentrations, grams
                                                  basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
                initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
    ti 46   1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15 1.304E-15
    ti 47   1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15
    ti 48   1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15 1.303E-15
    ti 49   1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15 1.354E-15
    ti 50   1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v 50 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 | 8.958E-19 |
| v 51 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 | 3.191E-17 |
| cr 50 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 | 1.336E-15 |
| cr 52 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 |
| cr 53 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 | 1.414E-15 |
| cr 54 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 | 1.515E-15 |
| mn 54 | 3.585E-19 | 3.569E-19 | 3.533E-19 | 3.398E-19 | 3.048E-19 | 2.662E-19 | 1.511E-19 | 6.715E-20 | 2.985E-20 | 1.324E-20 | 7.236E-21 | 5.885E-21 | 2.616E-21 | 1.163E-21 |
| mn 55 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.469E-15 | 1.469E-15 | 1.469E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.471E-15 |
| fe 54 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 |
| fe 55 | 3.309E-18 | 3.305E-18 | 3.294E-18 | 3.255E-18 | 3.146E-18 | 3.016E-18 | 2.529E-18 | 1.965E-18 | 1.526E-18 | 1.185E-18 | 9.817E-19 | 9.206E-19 | 7.152E-19 | 5.556E-19 |
| fe 56 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 | 1.617E-15 |
| fe 57 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 |
| fe 58 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 | 4.551E-15 |
| co 59 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 | 1.624E-15 |
| co 60 | 1.702E-16 | 1.701E-16 | 1.698E-16 | 1.687E-16 | 1.658E-16 | 1.622E-16 | 1.479E-16 | 1.297E-16 | 1.137E-16 | 9.970E-17 | 9.040E-17 | 8.743E-17 | 7.666E-17 | 6.722E-17 |
| ni 58 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 | 1.573E-15 |
| ni 59 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 | 1.240E-15 |
| ni 60 | 2.014E-15 | 2.014E-15 | 2.014E-15 | 2.015E-15 | 2.018E-15 | 2.022E-15 | 2.036E-15 | 2.054E-15 | 2.070E-15 | 2.084E-15 | 2.093E-15 | 2.096E-15 | 2.107E-15 | 2.117E-15 |
| ni 61 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 |
| ni 62 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 | 1.670E-15 |
| ni 63 | 3.327E-17 | 3.327E-17 | 3.327E-17 | 3.326E-17 | 3.323E-17 | 3.319E-17 | 3.303E-17 | 3.281E-17 | 3.258E-17 | 3.236E-17 | 3.220E-17 | 3.214E-17 | 3.192E-17 | 3.170E-17 |
| ni 64 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 | 1.759E-15 |
| cu 63 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.705E-15 | 1.706E-15 | 1.706E-15 | 1.706E-15 | 1.706E-15 | 1.706E-15 |
| cu 65 | 4.210E-18 | 4.210E-18 | 4.210E-18 | 4.210E-18 | 4.211E-18 | 4.211E-18 | 4.212E-18 | 4.212E-18 | 4.212E-18 | 4.213E-18 | 4.213E-18 | 4.213E-18 | 4.213E-18 | 4.213E-18 |
| zn 64 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 | 7.177E-18 |
| te123 | 9.222E-18 | 9.222E-18 | 9.222E-18 | 9.222E-18 | 9.223E-18 | 9.223E-18 | 9.224E-18 | 9.225E-18 | 9.225E-18 | 9.225E-18 | 9.225E-18 | 9.225E-18 | 9.225E-18 | 9.225E-18 |
| te124 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 |
| te125 | 3.799E-17 | 3.799E-17 | 3.799E-17 | 3.799E-17 | 3.799E-17 | 3.799E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 | 3.800E-17 |
| te126 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 | 5.181E-19 |
| xe131 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 | 5.044E-16 |
| xe132 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 | 2.397E-16 |
| cs133 | 6.767E-19 | 6.767E-19 | 6.768E-19 | 6.770E-19 | 6.775E-19 | 6.782E-19 | 6.808E-19 | 6.844E-19 | 6.878E-19 | 6.909E-19 | 6.931E-19 | 6.939E-19 | 6.966E-19 | 6.992E-19 |
| ba130 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 | 2.817E-15 |
| ba132 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 | 1.676E-18 |
| la137 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 | 2.764E-16 |
| la138 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 | 2.867E-17 |
| la139 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 | 4.140E-18 |
| ce136 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 | 3.413E-15 |
| yb176 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 | 1.884E-18 |
| lu175 | 4.466E-15 | 4.467E-15 | 4.467E-15 | 4.470E-15 | 4.475E-15 | 4.479E-15 | 4.483E-15 | 4.484E-15 | 4.484E-15 | 4.484E-15 | 4.484E-15 | 4.484E-15 | 4.484E-15 | 4.484E-15 |
| lu176 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 | 9.912E-17 |
| hf174 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 | 1.950E-15 |
| hf175 | 1.746E-17 | 1.712E-17 | 1.637E-17 | 1.377E-17 | 8.474E-18 | 4.632E-18 | 3.708E-19 | 9.988E-21 | 2.690E-22 | 7.175E-24 | 4.854E-25 | 1.933E-25 | 5.206E-27 | 1.402E-28 |
| hf176 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 | 4.985E-15 |
| hf177 | 7.070E-16 | 7.070E-16 | 7.070E-16 | 7.070E-16 | 7.070E-16 | 7.070E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 | 7.071E-16 |
| hf178 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 | 4.577E-15 |
| hf179 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 | 1.174E-14 |

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5 more years for cooling used fuel material light elements page 3

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hf180 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 | 9.426E-15 |
| hf181 | 5.741E-19 | 5.557E-19 | 5.163E-19 | 3.878E-19 | 1.740E-19 | 6.418E-20 | 1.921E-22 | 2.538E-24 | 6.493E-27 | 1.634E-29 | 1.913E-31 | 4.181E-32 | 1.070E-34 | 3.000E+00 |
| hf182 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 | 1.876E-17 |
| ta180m | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 | 3.081E-19 |
| ta181 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 | 2.634E-15 |
| ta182 | 1.105E-17 | 1.092E-17 | 1.062E-17 | 9.557E-18 | 7.108E-18 | 4.917E-18 | 1.054E-18 | 1.162E-19 | 1.281E-20 | 1.404E-21 | 2.721E-22 | 1.554E-22 | 1.772E-23 | 2.543E-24 |
| w182 | 3.892E-15 | 3.892E-15 | 3.893E-15 | 3.894E-15 | 3.896E-15 | 3.898E-15 | 3.902E-15 | 3.903E-15 | 3.903E-15 | 3.903E-15 | 3.903E-15 | 3.903E-15 | 3.903E-15 | 3.903E-15 |
| w183 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 | 9.870E-15 |
| w184 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 | 8.787E-15 |
| w185 | 2.325E-18 | 2.282E-18 | 2.189E-18 | 1.863E-18 | 1.185E-18 | 6.749E-19 | 6.413E-20 | 2.208E-21 | 7.602E-23 | 2.593E-24 | 2.106E-25 | 8.928E-26 | 3.074E-27 | 1.058E-28 |
| w186 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 |
| re185 | 9.004E-16 | 9.005E-16 | 9.006E-16 | 9.009E-16 | 9.016E-16 | 9.021E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 | 9.027E-16 |
| re186m | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 | 2.876E-18 |
| re187 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 | 5.295E-15 |
| os186 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 | 3.217E-15 |
| os187 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 | 5.627E-16 |
| os188 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 | 2.216E-15 |
| os189 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 | 1.545E-16 |
| os190 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 | 4.364E-17 |
| os192 | 1.269E-16 | 1.269E-16 | 1.269E-16 | 1.269E-16 | 1.270E-16 | 1.270E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 | 1.271E-16 |
| ir191 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 | 1.036E-16 |
| ir192 | 2.812E-18 | 2.760E-18 | 2.646E-18 | 2.245E-18 | 1.417E-18 | 7.992E-19 | 7.293E-20 | 2.369E-21 | 7.696E-23 | 2.477E-24 | 1.927E-25 | 8.047E-26 | 2.614E-27 | 8.492E-29 |
| ir193 | 2.452E-15 | 2.452E-15 | 2.452E-15 | 2.452E-15 | 2.453E-15 | 2.453E-15 | 2.456E-15 | 2.461E-15 | 2.465E-15 | 2.469E-15 | 2.472E-15 | 2.473E-15 | 2.476E-15 | 2.480E-15 |
| pt192 | 2.146E-15 | 2.146E-15 | 2.147E-15 | 2.148E-15 | 2.148E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 | 2.149E-15 |
| pt193 | 3.050E-16 | 3.050E-16 | 3.050E-16 | 3.048E-16 | 3.042E-16 | 3.035E-16 | 3.006E-16 | 2.964E-16 | 2.924E-16 | 2.883E-16 | 2.854E-16 | 2.844E-16 | 2.804E-16 | 2.766E-16 |
| pt194 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 | 5.362E-15 |
| pt195 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.619E-17 | 4.620E-17 | 4.620E-17 | 4.620E-17 | 4.620E-17 | 4.620E-17 |
| pt196 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 | 7.554E-18 |
| au197 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 |
| hg196 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 | 2.183E-16 |
| hg198 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 | 1.008E-14 |
| hg199 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 | 1.446E-15 |
| hg200 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 | 1.231E-14 |
| hg201 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 | 5.294E-15 |
| hg202 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 | 5.731E-15 |
| hg204 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 | 5.557E-15 |
| tl203 | 4.860E-17 | 4.860E-17 | 4.861E-17 | 4.863E-17 | 4.866E-17 | 4.868E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 | 4.870E-17 |
| tl204 | 1.039E-18 | 1.038E-18 | 1.036E-18 | 1.027E-18 | 1.002E-18 | 9.716E-19 | 8.550E-19 | 7.119E-19 | 5.928E-19 | 4.934E-19 | 4.304E-19 | 4.108E-19 | 3.421E-19 | 2.848E-19 |
| tl205 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 | 2.212E-17 |
| pb204 | 3.237E-19 | 3.247E-19 | 3.270E-19 | 3.358E-19 | 3.600E-19 | 3.893E-19 | 5.026E-19 | 6.415E-19 | 7.571E-19 | 8.536E-19 | 9.147E-19 | 9.338E-19 | 1.000E-18 | 1.056E-18 |
| total | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 |

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5 more years for cooling used fuel material light elements page 4

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element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.221E-04 | 1.221E-04 | 1.221E-04 | 1.221E-04 | 1.221E-04 | 1.221E-04 | 1.221E-04 | 1.220E-04 | 1.220E-04 | 1.220E-04 | 1.219E-04 | 1.219E-04 | 1.219E-04 | 1.219E-04 |
| he | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 | 5.827E-02 |
| li | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 | 4.338E-12 |
| be | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 | 2.008E-06 |
| b | 1.125E-09 | 1.125E-09 | 1.125E-09 | 1.125E-09 | 1.125E-09 | 1.125E-09 | 1.125E-09 | 1.126E-09 | 1.127E-09 | 1.128E-09 | 1.129E-09 | 1.129E-09 | 1.130E-09 | 1.131E-09 |
| c | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 | 1.893E-01 |
| n | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 | 1.761E-04 |
| o | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 |
| f | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 | 1.805E-15 |
| ne | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 | 2.276E-19 |
| na | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 | 6.285E-16 |
| mg | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 |
| al | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 |
| si | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 |
| p | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 |
| s | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 | 3.687E-15 |
| cl | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 | 1.983E-15 |
| ar | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 | 3.115E-15 |
| k | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 | 3.271E-15 |
| ca | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 | 7.191E-15 |
| sc | 1.187E-15 | 1.187E-15 | 1.187E-15 | 1.187E-15 | 1.187E-15 | 1.187E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 | 1.186E-15 |
| ti | 6.614E-15 | 6.614E-15 | 6.614E-15 | 6.614E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 | 6.615E-15 |
| v | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 | 3.281E-17 |
| cr | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 | 5.686E-15 |
| mn | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.468E-15 | 1.469E-15 | 1.469E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.471E-15 |
| fe | 9.200E-15 | 9.200E-15 | 9.200E-15 | 9.200E-15 | 9.200E-15 | 9.200E-15 | 9.199E-15 | 9.199E-15 | 9.198E-15 | 9.198E-15 | 9.198E-15 | 9.198E-15 | 9.197E-15 | 9.197E-15 |
| co | 1.794E-15 | 1.794E-15 | 1.794E-15 | 1.793E-15 | 1.790E-15 | 1.786E-15 | 1.772E-15 | 1.754E-15 | 1.738E-15 | 1.724E-15 | 1.714E-15 | 1.711E-15 | 1.701E-15 | 1.691E-15 |
| ni | 9.958E-15 | 9.958E-15 | 9.959E-15 | 9.960E-15 | 9.963E-15 | 9.966E-15 | 9.980E-15 | 9.998E-15 | 1.001E-14 | 1.003E-14 | 1.004E-14 | 1.004E-14 | 1.005E-14 | 1.006E-14 |
| cu | 1.709E-15 | 1.709E-15 | 1.709E-15 | 1.710E-15 | 1.709E-15 | 1.709E-15 | 1.709E-15 | 1.709E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.711E-15 |
| zn | 7.190E-18 | 7.190E-18 | 7.190E-18 | 7.190E-18 | 7

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| au | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 | 3.094E-15 |
| hg | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 | 4.064E-14 |
| tl | 7.176E-17 | 7.176E-17 | 7.177E-17 | 7.178E-17 | 7.179E-17 | 7.178E-17 | 7.168E-17 | 7.153E-17 | 7.141E-17 | 7.131E-17 | 7.125E-17 | 7.123E-17 | 7.116E-17 | 7.111E-17 |
| pb | 3.374E-19 | 3.384E-19 | 3.407E-19 | 3.495E-19 | 3.737E-19 | 4.030E-19 | 5.163E-19 | 6.552E-19 | 7.708E-19 | 8.673E-19 | 9.284E-19 | 9.475E-19 | 1.014E-18 | 1.070E-18 |
| totals | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 | 2.022E+03 |

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5 more years for cooling used fuel material light elements page 5

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 8.586E-03 | 8.584E-03 | 8.578E-03 | 8.555E-03 | 8.490E-03 | 8.411E-03 | 8.087E-03 | 7.645E-03 | 7.227E-03 | 6.831E-03 | 6.550E-03 | 6.457E-03 | 6.104E-03 | 5.771E-03 |
| be 10 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 |
| c 14 | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.654E-05 | 2.654E-05 | 2.654E-05 | 2.654E-05 | 2.653E-05 | 2.653E-05 | 2.653E-05 | 2.653E-05 | 2.652E-05 |
| na 22 | 7.460E-21 | 7.449E-21 | 7.425E-21 | 7.331E-21 | 7.073E-21 | 6.766E-21 | 5.618E-21 | 4.305E-21 | 3.299E-21 | 2.526E-21 | 2.072E-21 | 1.936E-21 | 1.484E-21 | 1.137E-21 |
| si 32 | 5.822E-21 | 5.821E-21 | 5.821E-21 | 5.820E-21 | 5.816E-21 | 5.812E-21 | 5.794E-21 | 5.767E-21 | 5.741E-21 | 5.715E-21 | 5.696E-21 | 5.689E-21 | 5.664E-21 | 5.638E-21 |
| p 32 | 7.576E-20 | 6.928E-20 | 5.682E-20 | 2.761E-20 | 7.831E-21 | 5.917E-21 | 5.795E-21 | 5.769E-21 | 5.743E-21 | 5.717E-21 | 5.698E-21 | 5.691E-21 | 5.665E-21 | 5.640E-21 |
| p 33 | 6.053E-18 | 5.731E-18 | 5.067E-18 | 3.140E-18 | 8.218E-19 | 1.549E-19 | 1.448E-22 | 6.678E-27 | 3.080E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 2.289E-15 | 2.253E-15 | 2.174E-15 | 1.893E-15 | 1.284E-15 | 7.920E-16 | 1.051E-16 | 5.834E-18 | 3.239E-19 | 1.784E-20 | 2.068E-21 | 9.902E-22 | 5.497E-23 | 3.052E-24 |
| cl 36 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 | 1.937E-18 |
| ar 37 | 3.142E-16 | 3.020E-16 | 2.763E-16 | 1.954E-16 | 7.413E-17 | 2.218E-17 | 1.430E-19 | 1.046E-22 | 7.651E-26 | 5.487E-29 | 2.527E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 6.416E-17 | 6.416E-17 | 6.416E-17 | 6.415E-17 | 6.413E-17 | 6.410E-17 | 6.399E-17 | 6.382E-17 | 6.366E-17 | 6.349E-17 | 6.337E-17 | 6.333E-17 | 6.317E-17 | 6.301E-17 |
| ar 42 | 1.199E-22 | 1.199E-22 | 1.198E-22 | 1.197E-22 | 1.194E-22 | 1.190E-22 | 1.172E-22 | 1.148E-22 | 1.124E-22 | 1.100E-22 | 1.083E-22 | 1.077E-22 | 1.055E-22 | 1.033E-22 |
| k 40 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 | 7.487E-21 |
| k 42 | 1.199E-22 | 1.199E-22 | 1.198E-22 | 1.197E-22 | 1.194E-22 | 1.190E-22 | 1.172E-22 | 1.148E-22 | 1.124E-22 | 1.100E-22 | 1.083E-22 | 1.078E-22 | 1.055E-22 | 1.033E-22 |
| ca 41 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 | 6.133E-20 |
| ca 45 | 2.991E-15 | 2.966E-15 | 2.910E-15 | 2.701E-15 | 2.191E-15 | 1.690E-15 | 5.698E-16 | 1.202E-16 | 2.537E-17 | 5.330E-18 | 1.672E-18 | 1.125E-18 | 2.373E-19 | 5.008E-20 |
| sc 45m | 5.684E-20 | 5.635E-20 | 5.528E-20 | 5.131E-20 | 4.164E-20 | 3.210E-20 | 1.083E-20 | 2.284E-21 | 4.820E-22 | 1.013E-22 | 3.177E-23 | 2.137E-23 | 4.509E-24 | 9.515E-25 |
| sc 46 | 2.728E-14 | 2.683E-14 | 2.585E-14 | 2.236E-14 | 1.491E-14 | 9.003E-15 | 1.092E-15 | 5.332E-17 | 2.604E-18 | 1.261E-19 | 1.329E-20 | 6.156E-21 | 3.006E-22 | 1.468E-23 |
| v 49 | 6.745E-18 | 6.716E-18 | 6.653E-18 | 6.413E-18 | 5.786E-18 | 5.090E-18 | 2.979E-18 | 1.384E-18 | 6.430E-19 | 2.981E-19 | 1.683E-19 | 1.385E-19 | 6.433E-20 | 2.988E-20 |
| cr 51 | 3.047E-16 | 2.898E-16 | 2.589E-16 | 1.671E-16 | 4.903E-17 | 1.066E-17 | 1.805E-20 | 1.950E-24 | 2.106E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 | 1.022E-23 |
| mn 54 | 2.779E-15 | 2.767E-15 | 2.739E-15 | 2.635E-15 | 2.363E-15 | 2.063E-15 | 1.171E-15 | 5.206E-16 | 2.314E-16 | 1.026E-16 | 5.609E-17 | 4.562E-17 | 2.028E-17 | 9.015E-18 |
| fe 55 | 7.842E-15 | 7.832E-15 | 7.807E-15 | 7.713E-15 | 7.456E-15 | 7.148E-15 | 5.993E-15 | 4.656E-15 | 3.617E-15 | 2.808E-15 | 2.327E-15 | 2.182E-15 | 1.695E-15 | 1.317E-15 |
| fe 59 | 1.080E-15 | 1.047E-15 | 9.762E-16 | 7.432E-16 | 3.464E-16 | 1.339E-16 | 2.522E-18 | 8.556E-21 | 2.903E-23 | 9.698E-26 | 1.401E-27 | 3.291E-28 | 1.116E-30 | 0.000E+00 |
| fe 60 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 |
| co 56 | 7.297E-23 | 7.167E-23 | 6.884E-23 | 5.883E-23 | 3.790E-23 | 2.192E-23 | 2.223E-24 | 8.400E-26 | 3.174E-27 | 1.189E-28 | 1.035E-29 | 4.491E-30 | 1.697E-31 | 0.000E+00 |
| co 57 | 1.481E-17 | 1.473E-17 | 1.457E-17 | 1.393E-17 | 1.229E-17 | 1.052E-17 | 5.490E-18 | 2.164E-18 | 8.529E-19 | 3.353E-19 | 1.676E-19 | 1.322E-19 | 5.209E-20 | 2.053E-20 |
| co 58 | 3.497E-16 | 3.429E-16 | 3.281E-16 | 2.765E-16 | 1.712E-16 | 9.428E-17 | 7.782E-18 | 2.190E-19 | 6.164E-21 | 1.718E-22 | 1.201E-23 | 4.835E-24 | 1.361E-25 | 3.830E-27 |
| co 60 | 1.924E-13 | 1.923E-13 | 1.920E-13 | 1.908E-13 | 1.875E-13 | 1.834E-13 | 1.673E-13 | 1.467E-13 | 1.286E-13 | 1.128E-13 | 1.022E-13 | 9.887E-14 | 8.669E-14 | 7.602E-14 |
| co 60m | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 | 6.271E-23 |
| ni 59 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 | 9.892E-17 |
| ni 63 | 1.867E-15 | 1.867E-15 | 1.866E-15 | 1.866E-15 | 1.864E-15 | 1.862E-15 | 1.853E-15 | 1.840E-15 | 1.828E-15 | 1.815E-15 | 1.806E-15 | 1.803E-15 | 1.791E-15 | 1.778E-15 |
| zn 65 | 1.900E-17 | 1.889E-17 | 1.865E-17 | 1.775E-17 | 1.544E-17 | 1.298E-17 | 6.290E-18 | 2.230E-18 | 7.903E-19 | 2.793E-19 | 1.290E-19 | 9.901E-20 | 3.509E-20 | 1.244E-20 |
| sn119m | 2.387E-22 | 2.376E-22 | 2.351E-22 | 2.256E-22 | 2.009E-22 | 1.739E-22 | 9.512E-23 | 4.011E-23 | 1.691E-23 | 7.116E-24 | 3.739E-24 | 3.001E-24 | 1.265E-24 | 5.336E-25 |
| sn121 | 5.366E-21 | 5.366E-21 | 5.365E-21 | 5.361E-21 | 5.349E-21 | 5.335E-21 | 5.277E-21 | 5.194E-21 | 5.113E-21 | 5.032E-21 | 4.974E-21 | 4.954E-21 | 4.876E-21 | 4.800E-21 |
| sn121m | 6.915E-21 | 6.914E-21 | 6.913E-21 | 6.907E-21 | 6.893E-21 | 6.875E-21 | 6.799E-21 | 6.693E-21 | 6.588E-21 | 6.485E-21 | 6.409E-21 | 6.383E-21 | 6.283E-21 | 6.185E-21 |
| sn123 | 2.492E-24 | 2.466E-24 | 2.407E-24 | 2.191E-24 | 1.685E-24 | 1.214E-24 | 3.092E-25 | 4.363E-26 | 6.157E-27 | 8.642E-28 | 2.008E-28 | 1.219E-28 | 1.721E-29 | 2.428E-30 |
| sb124 | 2.684E-20 | 2.623E-20 | 2.491E-20 | 2.036E-20 | 1.158E-20 | 5.738E-21 | 3.045E-22 | 4.554E-24 | 6.811E-26 | 1.007E-27 | 4.394E-29 | 1.506E-29 | 2.252E-31 | 0.000E+00 |
| sb125 | 3.028E-21 | 3.023E-21 | 3.014E-21 | 2.978E-21 | 2.879E-21 | 2.761E-21 | 2.317E-21 | 1.802E-21 | 1.402E-21 | 1.090E-21 | 9.040E-22 | 8.480E-22 | 6.597E-22 | 5.132E-22 |
| te121 | 3.667E-22 | 3.636E-22 | 3.567E-22 | 3.312E-22 | 2.693E-22 | 2.081E-22 | 7.095E-23 | 1.519E-23 | 3.255E-24 | 6.942E-25 | 2.202E-25 | 1.487E-25 | 2.758E-31 | 0.000E+00 |
| te121m | 3.653E-22 | 3.622E-22 | 3.554E-22 | 3.301E-22 | 2.684E-22 | 2.075E-22 | 7.071E-23 | 1.515E-23 | 3.244E-24 | 6.920E-25 | 2.195E-25 | 1.482E-25 | 3.175E-26 | 6.802E-27 |
| te123m | 2.203E-17 | 2.177E-17 | 2.121E-17 | 1.916E-17 | 1.441E-17 | 1.011E-17 | 2.294E-18 | 2.747E-19 | 3.289E-20 | 3.915E-21 | 8.050E-22 | 4.688E-22 | 5.612E-23 | 6.720E-24 |
| te125m | 5.147E-17 | 5.024E-17 | 4.758E-17 | 3.852E-17 | 2.132E-17 | 1.021E-17 | 4.699E-19 | 6.159E-21 | 4.130E-22 | 2.677E-22 | 2.214E-22 | 2.077E-22 | 1.615E-22 | 1.257E-22 |
| te127 | 1.079E-19 | 1.065E-19 | 1.035E-19 | 9.259E-20 | 6.780E-20 | 4.600E-20 | 9.089E-21 | 9.922E-22 | 8.758E-23 | 8.543E-24 | 1.515E-24 | 8.386E-25 | 0.000E+00 | 0.000E+00 |
| te127m | 1.101E-19 | 1.087E-19 | 1.057E-19 | 9.452E-20 | 6.922E-20 | 4.696E-20 | 9.279E-21 | 9.108E-22 | 8.941E-23 | 8.722E-24 | 1.547E-24 | 8.562E-25 | 8.404E-26 | 8.250E-27 |
| te129 | 4.800E-24 | 4.606E-24 | 4.198E-24 | 2.926E-24 | 1.065E-24 | 3.025E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 7.608E-24 | 7.301E-24 | 6.653E-24 | 4.637E-24 | 1.688E-24 | 4.794E-25 | 2.489E-27 | 1.336E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 1.323E-19 | 1.293E-19 | 1.227E-19 | 1.000E-19 | 5.646E-20 | 2.771E-20 | 1.414E-21 | 1.998E-23 | 2.823E-25 | 3.944E-27 | 1.650E-28 | 5.573E-29 | 7.877E-31 | 0.000E+00 |
| i126 | 4.154E-24 | 3.732E-24 | 2.932E-24 | 1.147E-24 | 8.297E-26 | 3.153E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 8.005E-20 | 7.706E-20 | 7.073E-20 | 5.068E-20 | 1.994E-20 | 6.240E-21 | 4.856E-23 | 4.653E-26 | 4.458E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 1.328E-21 | 1.182E-21 | 9.079E-22 | 3.259E-22 | 1.850E-23 | 5.204E-25 | 1.710E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.932E-18 | 2.602E-18 | 1.990E-18 | 6.999E-19 | 3.720E-20 | 9.533E-22 | 1.139E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 6

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cs134 | 5.417E-17 | 5.407E-17 | 5.385E-17 | 5.299E-17 | 5.066E-17 | 4.790E-17 | 3.789E-17 | 2.709E-17 | 1.937E-17 | 1.384E-17 | 1.078E-17 | 9.896E-18 | 7.076E-18 | 5.060E-18 |
| cs135 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 | 3.661E-24 |
| cs137 | 3.942E-24 | 3.942E-24 | 3.940E-24 | 3.936E-24 | 3.924E-24 | 3.909E-24 | 3.846E-24 | 3.759E-24 | 3.673E-24 | 3.590E-24 | 3.528E-24 | 3.508E-24 | 3.428E-24 | 3.350E-24 |
| ba131 | 4.893E-19 | 4.338E-19 | 3.307E-19 | 1.152E-19 | 6.008E-21 | 1.520E-22 | 3.213E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 1.545E-17 | 1.545E-17 | 1.544E-17 | 1.539E-17 | 1.525E-17 | 1.508E-17 | 1.441E-17 | 1.349E-17 | 1.263E-17 | 1.182E-17 | 1.125E-17 | 1.107E-17 | 1.036E-17 | 9.701E-18 |
| ba137m | 3.733E-24 | 3.733E-24 | 3.732E-24 | 3.727E-24 | 3.716E-24 | 3.702E-24 | 3.643E-24 | 3.560E-24 | 3.479E-24 | 3.399E-24 | 3.341E-24 | 3.322E-24 | 3.246E-24 | 3.172E-24 |
| la137 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 |
| ce139 | 1.035E-19 | 1.024E-19 | 1.001E-19 | 9.169E-20 | 7.164E-20 | 5.269E-20 | 1.459E-20 | 2.321E-21 | 3.693E-22 | 5.847E-23 | 1.486E-23 | 9.304E-24 | 1.480E-24 | 2.356E-25 |
| ce141 | 2.944E-22 | 2.821E-22 | 2.563E-22 | 1.765E-22 | 6.209E-23 | 1.691E-23 | 1.067E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 9.107E-25 | 9.009E-25 | 8.793E-25 | 8.002E-25 | 6.144E-25 | 4.423E-25 | 1.119E-25 | 1.564E-26 | 2.188E-27 | 3.042E-28 | 7.023E-29 | 4.254E-29 | 5.948E-30 | 8.318E-31 |
| tm171 | 2.946E-21 | 2.941E-21 | 2.927E-21 | 2.877E-21 | 2.741E-21 | 2.581E-21 | 2.006E-21 | 1.398E-21 | 9.748E-22 | 6.789E-22 | 5.189E-22 | 4.733E-22 | 3.299E-22 | 2.300E-22 |
| lu172 | 2.398E-21 | 2.397E-21 | 2.393E-21 | 2.361E-21 | 2.248E-21 | 2.113E-21 | 1.616E-21 | 1.116E-21 | 7.702E-22 | 5.312E-22 | 4.031E-22 | 3.668E-22 | 2.532E-22 | 1.749E-22 |
| lu172m | 2.398E-21 | 2.393E-21 | 2.382E-21 | 2.340E-21 | 2.227E-21 | 2.093E-21 | 1.616E-21 | 1.116E-21 | 7.702E-22 | 5.312E-22 | 4.031E-22 | 3.668E-22 | 2.532E-22 | 1.749E-22 |
| lu173 | 7.306E-17 | 7.286E-17 | 7.240E-17 | 7.067E-17 | 6.603E-17 | 6.068E-17 | 4.262E-17 | 2.571E-17 | 1.551E-17 | 9.339E-18 | 6.407E-18 | 5.633E-18 | 3.397E-18 | 2.049E-18 |
| lu174 | 1.116E-16 | 1.115E-16 | 1.113E-16 | 1.105E-16 | 1.082E-16 | 1.051E-16 | 9.212E-17 | 7.514E-17 | 6.102E-17 | 4.948E-17 | 4.234E-17 | 4.014E-17 | 3.256E-17 | 2.641E-17 |
| lu174m | 3.250E-17 | 3.219E-17 | 3.149E-17 | 2.891E-17 | 2.276E-17 | 1.697E-17 | 4.867E-18 | 8.194E-19 | 1.380E-19 | 2.311E-20 | 6.126E-21 | 3.891E-21 | 6.550E-22 | 1.103E-22 |
| lu176 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 | 5.357E-24 |
| lu177 | 1.216E-16 | 1.205E-16 | 1.182E-16 | 1.096E-16 | 8.870E-17 | 6.815E-17 | 2.265E-17 | 4.679E-18 | 9.668E-19 | 1.989E-19 | 6.141E-20 | 4.109E-20 | 8.490E-21 | 1.754E-21 |
| lu177m | 5.446E-16 | 5.399E-16 | 5.296E-16 | 4.910E-16 | 3.973E-16 | 3.053E-16 | 1.014E-16 | 2.096E-17 | 4.330E-18 | 8.909E-19 | 2.751E-19 | 1.841E-19 | 3.803E-20 | 7.857E-21 |
| hf172 | 2.398E-21 | 2.393E-21 | 2.382E-21 | 2.340E-21 | 2.227E-21 | 2.093E-21 | 1.616E-21 | 1.116E-21 | 7.702E-22 | 5.312E-22 | 4.031E-22 | 3.668E-22 | 2.532E-22 | 1.749E-22 |
| hf175 | 1.862E-13 | 1.825E-13 | 1.746E-13 | 1.468E-13 | 9.037E-14 | 4.940E-14 | 3.954E-15 | 1.065E-16 | 2.869E-18 | 7.652E-20 | 5.176E-21 | 2.061E-21 | 5.552E-23 | 1.495E-24 |
| hf177m | 4.281E-16 | 4.244E-16 | 4.162E-16 | 3.859E-16 | 3.123E-16 | 2.399E-16 | 7.974E-17 | 1.647E-17 | 3.404E-18 | 7.002E-19 | 2.162E-19 | 1.447E-19 | 2.989E-20 | 6.176E-21 |
| hf181 | 9.775E-15 | 9.461E-15 | 8.790E-15 | 6.602E-15 | 2.963E-15 | 1.093E-15 | 1.689E-17 | 4.321E-20 | 1.105E-22 | 2.782E-25 | 3.257E-27 | 7.118E-28 | 1.821E-30 | 0.000E+00 |
| hf182 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 | 4.142E-21 |
| ta179 | 4.215E-19 | 4.206E-19 | 4.187E-19 | 4.111E-19 | 3.906E-19 | 3.665E-19 | 2.810E-19 | 1.920E-19 | 1.312E-19 | 8.960E-20 | 6.747E-20 | 6.124E-20 | 4.185E-20 | 2.860E-20 |
| ta182 | 6.911E-14 | 6.828E-14 | 6.645E-14 | 5.979E-14 | 4.447E-14 | 3.076E-14 | 6.591E-15 | 7.267E-16 | 8.012E-17 | 8.784E-18 | 1.702E-18 | 9.722E-19 | 1.109E-19 | 1.591E-20 |
| w 181 | 6.462E-17 | 6.389E-17 | 6.226E-17 | 5.633E-17 | 4.257E-17 | 3.003E-17 | 6.985E-18 | 8.662E-19 | 1.074E-19 | 1.324E-20 | 2.795E-21 | 1.642E-21 | 2.036E-22 | 2.525E-23 |
| w 185 | 2.186E-14 | 2.146E-14 | 2.058E-14 | 1.751E-14 | 1.114E-14 | 6.345E-15 | 6.030E-16 | 2.076E-17 | 7.148E-19 | 2.438E-20 | 1.981E-21 | 8.395E-22 | 2.890E-23 | 9.951E-25 |
| w 188 | 3.570E-16 | 3.500E-16 | 3.347E-16 | 2.813E-16 | 1.729E-16 | 9.432E-17 | 7.491E-18 | 1.995E-19 | 5.313E-21 | 1.401E-22 | 9.396E-24 | 3.730E-24 | 9.934E-26 | 2.646E-27 |
| re183 | 1.215E-20 | 1.192E-20 | 1.140E-20 | 9.583E-21 | 5.899E-21 | 3.224E-21 | 2.581E-22 | 6.953E-24 | 1.873E-25 | 4.995E-27 | 3.379E-28 | 1.345E-28 | 3.624E-30 | 9.761E-32 |
| re184 | 1.759E-18 | 1.740E-18 | 1.697E-18 | 1.545E-18 | 1.216E-18 | 9.267E-19 | 3.212E-19 | 1.212E-20 | 1.614E-20 | 3.597E-21 | 1.175E-21 | 8.028E-22 | 1.802E-22 | 4.032E-23 |
| re184m | 1.680E-18 | 1.667E-18 | 1.636E-18 | 1.523E-18 | 1.246E-18 | 9.698E-19 | 3.408E-19 | 7.626E-20 | 1.707E-20 | 3.804E-21 | 1.247E-21 | 8.513E-22 | 1.905E-22 | 4.263E-23 |
| re186 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.766E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 |
| re186m | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 | 2.765E-20 |
| re187 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 | 2.339E-22 |
| re188 | 3.607E-16 | 3.536E-16 | 3.381E-16 | 2.842E-16 | 1.747E-16 | 9.529E-17 | 7.568E-18 | 2.015E-19 | 5.367E-21 | 1.415E-22 | 9.493E-24 | 3.769E-24 | 0.000E+00 | 0.000E+00 |
| os185 | 2.786E-17 | 2.745E-17 | 2.655E-17 | 2.332E-17 | 1.622E-17 | 1.033E-17 | 1.563E-18 | 1.047E-19 | 7.016E-21 | 4.666E-22 | 6.225E-23 | 3.127E-23 | 2.095E-24 | 1.404E-25 |
| os191 | 3.916E-20 | 3.578E-20 | 2.922E-20 | 1.329E-20 | 1.465E-21 | 9.406E-23 | 9.745E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| os194 | 2.744E-20 | 2.742E-20 | 2.738E-20 | 2.723E-20 | 2.681E-20 | 2.630E-20 | 2.426E-20 | 2.162E-20 | 1.926E-20 | 1.715E-20 | 1.574E-20 | 1.528E-20 | 1.362E-20 | 1.213E-20 |
| ir190 | 4.923E-24 | 4.376E-24 | 3.358E-24 | 1.199E-24 | 6.710E-26 | 1.853E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir191m | 3.916E-20 | 3.578E-20 | 2.922E-20 | 1.329E-20 | 1.465E-21 | 9.406E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir192 | 2.592E-14 | 2.543E-14 | 2.438E-14 | 2.069E-14 | 1.306E-14 | 7.365E-15 | 6.721E-16 | 2.183E-17 | 7.093E-19 | 2.283E-20 | 1.776E-21 | 7.416E-22 | 2.409E-23 | 7.826E-25 |
| ir193m | 5.544E-21 | 4.861E-21 | 3.614E-21 | 1.142E-21 | 4.539E-23 | 8.186E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir194 | 2.745E-20 | 2.743E-20 | 2.739E-20 | 2.724E-20 | 2.682E-20 | 2.631E-20 | 2.427E-20 | 2.162E-20 | 1.927E-20 | 1.716E-20 | 1.574E-20 | 1.529E-20 | 1.362E-20 | 1.214E-20 |
| pt193 | 1.131E-14 | 1.130E-14 | 1.130E-14 | 1.127E-14 | 1.125E-14 | 1.122E-14 | 1.114E-14 | 1.099E-14 | 1.088E-14 | 1.080E-14 | 1.058E-14 | 1.054E-14 | 1.039E-14 | 1.025E-14 |
| au194 | 1.091E-22 | 1.091E-22 | 1.091E-22 | 1.091E-22 | 1.090E-22 | 1.090E-22 | 1.089E-22 | 1.087E-22 | 1.085E-22 | 1.084E-22 | 1.083E-22 | 1.082E-22 | 1.080E-22 | 1.079E-22 |
| au195 | 9.458E-18 | 9.387E-18 | 9.231E-18 | 8.649E-18 | 7.206E-18 | 5.742E-18 | 2.221E-18 | 5.703E-19 | 1.465E-19 | 3.747E-20 | 1.360E-20 | 9.622E-21 | 2.471E-21 | 6.345E-22 |
| hg194 | 1.091E-22 | 1.091E-22 | 1.091E-22 | 1.091E-22 | 1.090E-22 | 1.090E-22 | 1.089E-22 | 1.087E-22 | 1.085E-22 | 1.084E-22 | 1.083E-22 | 1.082E-22 | 1.080E-22 | 1.079E-22 |
| hg203 | 1.386E-15 | 1.345E-15 | 1.258E-15 | 9.697E-16 | 4.678E-16 | 1.888E-16 | 4.251E-18 | 1.863E-20 | 8.168E-23 | 3.528E-25 | 6.168E-27 | 1.546E-27 | 6.778E-30 | 0.000E+00 |
| tl202 | 3.487E-24 | 3.116E-24 | 2.418E-24 | 9.028E-25 | 5.722E-26 | 1.868E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 2.474E-29 | 0.000E+00 | 0.000E+00 |
| tl204 | 4.816E-16 | 4.811E-16 | 4.800E-16 | 4.758E-16 | 4.643E-16 | 4.503E-16 | 3.962E-16 | 3.299E-16 | 2.747E-16 | 2.286E-16 | 1.995E-16 | 1.904E-16 | 1.585E-16 | 1.320E-16 |
| total | 8.613E-03 | 8.610E-03 | 8.604E-03 | 8.581E-03 | 8.517E-03 | 8.438E-03 | 8.114E-03 | 7.671E-03 | 7.254E-03 | 6.857E-03 | 6.577E-03 | 6.484E-03 | 6.131E-03 | 5.797E-03 |

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5 more years for cooling used fuel material light elements page 7

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element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 8.586E-03 | 8.584E-03 | 8.578E-03 | 8.555E-03 | 8.490E-03 | 8.411E-03 | 8.087E-03 | 7.645E-03 | 7.227E-03 | 6.831E-03 | 6.550E-03 | 6.457E-03 | 6.104E-03 | 5.771E-03 |
| be | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 | 4.669E-08 |
| c | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.655E-05 | 2.654E-05 | 2.654E-05 | 2.654E-05 | 2.654E-05 | 2.653E-05 | 2.653E-05 | 2.653E-05 | 2.653E-05 | 2.652E-05 |
| na | 7.460E-21 | 7.449E-21 | 7.425E-21 | 7.331E-21 | 7.073E-21 | 6.766E-21 | 5.618E-21 | 4.305E-21 | 3.299E-21 | 2.526E-21 | 2.072E-21 | 1.936E-21 | 1.484E-21 | 1.137E-21 |
| si | 5.822E-21 | 5.821E-21 | 5.821E-21 | 5.820E-21 | 5.816E-21 | 5.812E-21 | 5.794E-21 | 5.767E-21 | 5.741E-21 | 5.715E-21 | 5.696E-21 | 5.689E-21 | 5.664E-21 | 5.638E-21 |
| p | 6.129E-18 | 5.800E-18 | 5.124E-18 | 3.167E-18 | 8.296E-19 | 1.608E-19 | 5.940E-21 | 5.769E-21 | 5.743E-21 | 5.717E-21 | 5.698E-21 | 5.691E-21 | 5.665E-21 | 5.640E-21 |
| s | 2.289E-15 | 2.253E-15 | 2.174E-15 | 1.893E-15 | 1.284E-15 | 7.920E-16

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sn | 1.252E-20 | 1.252E-20 | 1.251E-20 | 1.250E-20 | 1.244E-20 | 1.238E-20 | 1.217E-20 | 1.193E-20 | 1.172E-20 | 1.152E-20 | 1.139E-20 | 1.134E-20 | 1.116E-20 | 1.099E-20 |
| sb | 2.987E-20 | 2.926E-20 | 2.792E-20 | 2.334E-20 | 1.446E-20 | 8.499E-21 | 2.621E-21 | 1.807E-21 | 1.402E-21 | 1.090E-21 | 9.040E-22 | 8.480E-22 | 6.597E-22 | 5.132E-22 |
| te | 7.372E-17 | 7.223E-17 | 6.901E-17 | 5.787E-17 | 3.586E-17 | 2.040E-17 | 2.782E-18 | 1.827E-19 | 9.348E-20 | 4.201E-22 | 1.030E-21 | 6.784E-22 | 2.178E-22 | 1.324E-22 |
| i | 1.324E-19 | 1.293E-19 | 1.227E-19 | 1.000E-19 | 5.646E-20 | 2.771E-20 | 1.414E-21 | 1.998E-23 | 2.840E-25 | 5.610E-27 | 1.832E-27 | 1.722E-27 | 1.667E-27 | 1.667E-27 |
| xe | 8.138E-20 | 7.824E-20 | 7.164E-20 | 5.101E-20 | 1.995E-20 | 6.240E-21 | 4.856E-23 | 4.653E-26 | 4.458E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 5.711E-17 | 5.668E-17 | 5.584E-17 | 5.369E-17 | 5.070E-17 | 4.790E-17 | 3.789E-17 | 2.709E-17 | 1.937E-17 | 1.384E-17 | 1.078E-17 | 9.896E-18 | 7.076E-18 | 5.060E-18 |
| ba | 1.594E-17 | 1.588E-17 | 1.577E-17 | 1.550E-17 | 1.526E-17 | 1.508E-17 | 1.441E-17 | 1.349E-17 | 1.263E-17 | 1.182E-17 | 1.125E-17 | 1.107E-17 | 1.036E-17 | 9.701E-18 |
| la | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 | 1.203E-17 |
| ce | 1.038E-19 | 1.027E-19 | 1.004E-19 | 9.186E-20 | 7.170E-20 | 5.271E-20 | 1.459E-20 | 2.321E-21 | 3.693E-22 | 5.847E-23 | 1.486E-23 | 9.304E-24 | 1.480E-24 | 2.356E-25 |
| tm | 2.947E-21 | 2.941E-21 | 2.928E-21 | 2.878E-21 | 2.742E-21 | 2.581E-21 | 2.006E-21 | 1.398E-21 | 9.748E-22 | 6.789E-22 | 5.189E-22 | 4.733E-22 | 3.299E-22 | 2.300E-22 |
| lu | 8.834E-16 | 8.771E-16 | 8.630E-16 | 8.107E-16 | 6.830E-16 | 5.561E-16 | 2.637E-16 | 1.273E-16 | 8.196E-17 | 5.993E-17 | 4.909E-17 | 4.600E-17 | 3.601E-17 | 2.847E-17 |
| hf | 1.964E-13 | 1.924E-13 | 1.838E-13 | 1.538E-13 | 9.364E-14 | 5.073E-14 | 4.051E-15 | 1.230E-16 | 6.278E-18 | 7.814E-19 | 2.259E-19 | 1.512E-19 | 3.434E-20 | 1.049E-20 |
| ta | 6.911E-14 | 6.828E-14 | 6.645E-14 | 5.979E-14 | 4.447E-14 | 3.076E-14 | 6.592E-15 | 7.269E-16 | 8.026E-17 | 8.874E-18 | 1.769E-18 | 1.033E-18 | 1.527E-19 | 4.451E-20 |
| w | 2.228E-14 | 2.187E-14 | 2.098E-14 | 1.785E-14 | 1.136E-14 | 6.470E-15 | 6.175E-16 | 2.183E-17 | 8.275E-19 | 3.777E-20 | 4.785E-21 | 2.485E-21 | 2.326E-22 | 2.625E-23 |
| re | 3.642E-16 | 3.571E-16 | 3.415E-16 | 2.873E-16 | 1.772E-16 | 9.725E-17 | 8.286E-18 | 4.055E-19 | 9.412E-20 | 6.308E-20 | 5.797E-20 | 5.720E-20 | 5.591E-20 | 5.562E-20 |
| os | 2.793E-17 | 2.751E-17 | 2.661E-17 | 2.336E-17 | 1.625E-17 | 1.035E-17 | 1.587E-18 | 1.263E-19 | 2.627E-20 | 1.762E-20 | 1.580E-20 | 1.531E-20 | 1.362E-20 | 1.213E-20 |
| ir | 2.592E-14 | 2.543E-14 | 2.438E-14 | 2.069E-14 | 1.306E-14 | 7.365E-15 | 6.721E-16 | 2.188E-17 | 7.286E-19 | 3.999E-20 | 1.752E-20 | 1.603E-20 | 1.365E-20 | 1.214E-20 |
| pt | 1.131E-14 | 1.130E-14 | 1.130E-14 | 1.130E-14 | 1.127E-14 | 1.125E-14 | 1.114E-14 | 1.099E-14 | 1.084E-14 | 1.069E-14 | 1.054E-14 | 1.050E-14 | 1.039E-14 | 1.028E-14 |
| au | 9.458E-18 | 9.388E-18 | 9.231E-18 | 8.649E-18 | 7.206E-18 | 5.742E-18 | 2.221E-18 | 5.704E-19 | 1.466E-19 | 3.758E-20 | 1.371E-20 | 9.730E-21 | 2.579E-21 | 7.424E-22 |
| hg | 1.386E-15 | 1.345E-15 | 1.258E-15 | 9.697E-16 | 4.678E-16 | 1.888E-16 | 4.251E-18 | 1.874E-20 | 1.902E-22 | 1.087E-22 | 1.083E-22 | 1.082E-22 | 1.080E-22 | 1.079E-22 |
| tl | 4.816E-16 | 4.811E-16 | 4.800E-16 | 4.758E-16 | 4.643E-16 | 4.503E-16 | 3.962E-16 | 3.299E-16 | 2.747E-16 | 2.286E-16 | 1.995E-16 | 1.904E-16 | 1.585E-16 | 1.320E-16 |
| totals | 8.613E-03 | 8.610E-03 | 8.604E-03 | 8.581E-03 | 8.517E-03 | 8.438E-03 | 8.114E-03 | 7.671E-03 | 7.254E-03 | 6.857E-03 | 6.577E-03 | 6.484E-03 | 6.131E-03 | 5.797E-03 |

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5 more years for cooling used fuel material  light elements  page 8

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nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 2.896E-07 | 2.895E-07 | 2.893E-07 | 2.885E-07 | 2.864E-07 | 2.837E-07 | 2.728E-07 | 2.578E-07 | 2.438E-07 | 2.304E-07 | 2.209E-07 | 2.178E-07 | 2.059E-07 | 1.946E-07 |
| be 10 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 |
| c 14 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.783E-09 | 7.782E-09 | 7.781E-09 | 7.780E-09 | 7.780E-09 | 7.780E-09 | 7.779E-09 | 7.778E-09 |
| na 22 | 1.056E-22 | 1.054E-22 | 1.051E-22 | 1.038E-22 | 1.001E-22 | 9.576E-23 | 7.951E-23 | 6.093E-23 | 4.669E-23 | 3.576E-23 | 2.932E-23 | 2.740E-23 | 2.100E-23 | 1.609E-23 |
| al 26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 |
| si 32 | 2.361E-24 | 2.361E-24 | 2.361E-24 | 2.361E-24 | 2.359E-24 | 2.357E-24 | 2.350E-24 | 2.339E-24 | 2.329E-24 | 2.318E-24 | 2.310E-24 | 2.308E-24 | 2.297E-24 | 2.287E-24 |
| p 32 | 3.121E-22 | 2.854E-22 | 2.340E-22 | 1.137E-22 | 3.226E-23 | 2.437E-23 | 2.387E-23 | 2.376E-23 | 2.366E-23 | 2.355E-23 | 2.347E-23 | 2.344E-23 | 2.334E-23 | 2.323E-23 |
| p 33 | 2.742E-21 | 2.596E-21 | 2.296E-21 | 1.422E-21 | 3.723E-22 | 7.018E-23 | 6.560E-26 | 3.026E-30 | 1.395E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 6.616E-19 | 6.512E-19 | 6.284E-19 | 5.471E-19 | 3.711E-19 | 2.289E-19 | 3.037E-20 | 1.686E-21 | 9.360E-23 | 5.155E-24 | 5.978E-25 | 2.862E-25 | 1.589E-26 | 8.820E-28 |
| cl 36 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.417E-21 | 3.417E-21 |
| ar 37 | 4.032E-21 | 3.875E-21 | 3.545E-21 | 2.508E-21 | 9.513E-22 | 2.846E-22 | 1.835E-24 | 1.342E-27 | 9.818E-31 | 7.042E-34 | 3.243E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 8.322E-20 | 8.322E-20 | 8.321E-20 | 8.320E-20 | 8.317E-20 | 8.314E-20 | 8.299E-20 | 8.278E-20 | 8.258E-20 | 8.235E-20 | 8.219E-20 | 8.214E-20 | 8.193E-20 | 8.172E-20 |
| ar 42 | 1.653E-25 | 1.653E-25 | 1.652E-25 | 1.651E-25 | 1.646E-25 | 1.640E-25 | 1.616E-25 | 1.583E-25 | 1.550E-25 | 1.517E-25 | 1.494E-25 | 1.486E-25 | 1.455E-25 | 1.424E-25 |
| k 40 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 | 2.908E-23 |
| k 42 | 1.215E-24 | 1.214E-24 | 1.214E-24 | 1.213E-24 | 1.210E-24 | 1.205E-24 | 1.188E-24 | 1.163E-24 | 1.139E-24 | 1.115E-24 | 1.098E-24 | 1.092E-24 | 1.069E-24 | 1.047E-24 |
| ca 41 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 | 1.131E-24 |
| ca 45 | 1.363E-18 | 1.351E-18 | 1.326E-18 | 1.230E-18 | 9.984E-19 | 7.698E-19 | 2.596E-19 | 5.478E-20 | 1.156E-20 | 2.429E-21 | 7.617E-22 | 5.124E-22 | 1.081E-22 | 2.281E-23 |
| sc 45m | 4.151E-24 | 4.115E-24 | 4.037E-24 | 3.747E-24 | 3.041E-24 | 2.345E-24 | 7.907E-25 | 1.668E-25 | 3.520E-26 | 7.396E-27 | 2.320E-27 | 1.561E-27 | 3.293E-28 | 6.948E-29 |
| sc 46 | 3.430E-16 | 3.374E-16 | 3.250E-16 | 2.812E-16 | 1.875E-16 | 1.132E-16 | 1.373E-17 | 6.705E-19 | 3.274E-20 | 1.585E-21 | 1.671E-22 | 7.741E-23 | 3.780E-24 | 1.846E-25 |
| v 48 | 2.793E-27 | 2.561E-27 | 2.100E-27 | 9.858E-28 | 1.176E-28 | 8.331E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| v 49 | 1.780E-22 | 1.772E-22 | 1.756E-22 | 1.692E-22 | 1.527E-22 | 1.343E-22 | 7.861E-23 | 3.652E-23 | 1.697E-23 | 7.865E-24 | 4.442E-24 | 3.654E-24 | 1.697E-24 | 7.885E-25 |
| cr 51 | 6.624E-20 | 6.301E-20 | 5.630E-20 | 3.633E-20 | 1.066E-20 | 2.317E-21 | 3.924E-24 | 4.239E-28 | 4.578E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 | 3.264E-28 |
| mn 54 | 1.384E-17 | 1.378E-17 | 1.364E-17 | 1.312E-17 | 1.177E-17 | 1.028E-17 | 5.833E-18 | 2.593E-18 | 1.152E-18 | 5.112E-19 | 2.794E-19 | 2.272E-19 | 1.010E-19 | 4.490E-20 |
| fe 55 | 2.716E-19 | 2.712E-19 | 2.704E-19 | 2.671E-19 | 2.582E-19 | 2.475E-19 | 2.075E-19 | 1.612E-19 | 1.253E-19 | 9.724E-20 | 8.057E-20 | 7.555E-20 | 5.869E-20 | 4.560E-20 |
| fe 59 | 8.362E-18 | 8.106E-18 | 7.557E-18 | 5.754E-18 | 2.682E-18 | 1.037E-18 | 1.952E-20 | 6.624E-23 | 2.247E-25 | 7.508E-28 | 1.085E-29 | 2.547E-30 | 8.643E-33 | 0.000E+00 |
| fe 60 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 | 1.865E-26 |
| co 56 | 1.627E-24 | 1.598E-24 | 1.535E-24 | 1.312E-24 | 8.449E-25 | 4.887E-25 | 4.956E-26 | 1.873E-27 | 7.076E-29 | 2.650E-30 | 2.307E-31 | 1.001E-31 | 3.784E-33 | 0.000E+00 |
| co 57 | 1.262E-20 | 1.256E-20 | 1.242E-20 | 1.187E-20 | 1.048E-20 | 8.969E-21 | 4.680E-21 | 1.845E-21 | 7.270E-22 | 2.858E-22 | 1.428E-22 | 1.127E-22 | 4.440E-23 | 1.750E-23 |
| co 58 | 2.091E-18 | 2.051E-18 | 1.962E-18 | 1.654E-18 | 1.024E-18 | 5.638E-19 | 4.654E-20 | 1.310E-21 | 3.686E-23 | 1.027E-24 | 7.181E-26 | 2.891E-26 | 8.137E-28 | 2.290E-29 |
| co 60 | 2.967E-15 | 2.965E-15 | 2.960E-15 | 2.941E-15 | 2.890E-15 | 2.827E-15 | 2.579E-15 | 2.261E-15 | 1.983E-15 | 1.738E-15 | 1.576E-15 | 1.524E-15 | 1.336E-15 | 1.172E-15 |
| co 60m | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 | 2.344E-26 |
| ni 59 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 | 4.055E-21 |
| ni 63 | 1.928E-19 | 1.928E-19 | 1.928E-19 | 1.927E-19 | 1.925E-19 | 1.923E-19 | 1.914E-19 | 1.901E-19 | 1.888E-19 | 1.875E-19 | 1.866E-19 | 1.862E-19 | 1.850E-19 | 1.837E-19 |
| zn 65 | 6.564E-20 | 6.527E-20 | 6.444E-20 | 6.131E-20 | 5.334E-20 | 4.486E-20 | 2.173E-20 | 7.703E-21 | 2.730E-21 | 9.650E-22 | 4.455E-22 | 3.421E-22 | 1.212E-22 | 4.297E-23 |
| sn119m | 1.240E-25 | 1.234E-25 | 1.221E-25 | 1.171E-25 | 1.043E-25 | 9.028E-26 | 4.938E-26 | 2.082E-26 | 8.782E-27 | 3.694E-27 | 1.941E-27 | 1.558E-27 | 6.569E-28 | 2.770E-28 |
| sn121 | 3.684E-24 | 3.684E-24 | 3.683E-24 | 3.680E-24 | 3.672E-24 | 3.663E-24 | 3.623E-24 | 3.566E-24 | 3.510E-24 | 3.455E-24 | 3.415E-24 | 3.401E-24 | 3.348E-24 | 3.295E-24 |
| sn121m | 1.557E-24 | 1.557E-24 | 1.557E-24 | 1.555E-24 | 1.552E-24 | 1.548E-24 | 1.531E-24 | 1.507E-24 | 1.483E-24 | 1.460E-24 | 1.443E-24 | 1.437E-24 | 1.415E-24 | 1.393E-24 |
| sn123 | 7.831E-27 | 7.747E-27 | 7.562E-27 | 6.885E-27 | 5.293E-27 | 3.816E-27 | 9.715E-28 | 1.371E-28 | 1.934E-29 | 2.715E-30 | 6.310E-31 | 3.831E-31 | 5.407E-32 | 7.629E-33 |
| sb124 | 3.556E-22 | 3.475E-22 | 3.300E-22 | 2.698E-22 | 1.535E-22 | 7.602E-23 | 4.035E-24 | 6.034E-26 | 9.024E-28 | 1.334E-29 | 5.822E-31 | 1.995E-31 | 2.984E-33 | 0.000E+00 |
| sb125 | 9.575E-24 | 9.562E-24 | 9.532E-24 | 9.418E-24 | 9.106E-24 | 8.732E-24 | 7.327E-24 | 5.700E-24 | 4.434E-24 | 3.447E-24 | 2.859E-24 | 2.682E-24 | 2.086E-24 | 1.623E-24 |
| te121 | 1.278E-24 | 1.268E-24 | 1.244E-24 | 1.155E-24 | 9.387E-25 | 7.255E-25 | 2.173E-25 | 1.296E-26 | 1.138E-27 | 2.420E-27 | 7.678E-28 | 5.184E-28 | 9.615E-34 | 0.000E+00 |
| te121m | 6.400E-25 | 6.346E-25 | 6.227E-25 | 5.783E-25 | 4.703E-25 | 3.635E-25 | 1.239E-25 | 2.654E-26 | 5.685E-27 | 1.213E-27 | 3.846E-28 | 2.597E-28 | 5.564E-29 | 1.192E-29 |
| te123m | 3.249E-20 | 3.212E-20 | 3.129E-20 | 2.826E-20 | 2.125E-20 | 1.491E-20 | 3.384E-21 | 4.051E-22 | 4.851E-23 | 5.774E-24 | 1.187E-24 | 6.914E-25 | 8.278E-26 | 9.911E-27 |
| te125m | 4.438E-20 | 4.332E-20 | 4.103E-20 | 3.321E-20 | 1.838E-20 | 8.799E-21 | 4.051E-22 | 5.311E-24 | 3.561E-25 | 2.309E-25 | 1.909E-25 | 1.790E-25 | 1.393E-25 | 1.084E-25 |
| te127 | 1.467E-22 | 1.448E-22 | 1.408E-22 | 1.259E-22 | 9.222E-23 | 6.257E-23 | 1.236E-23 | 1.214E-24 | 1.191E-25 | 1.162E-26 | 2.061E-27 | 1.141E-27 | 0.000E+00 | 0.000E+00 |
| te127m | 6.017E-23 | 5.941E-23 | 5.773E-23 | 5.165E-23 | 3.782E-23 | 2.566E-23 | 5.070E-24 | 4.977E-25 | 4.886E-26 | 4.766E-27 | 8.451E-28 | 4.678E-28 | 4.592E-29 | 4.508E-30 |
| te129 | 1.732E-26 | 1.662E-26 | 1.515E-26 | 1.056E-26 | 3.841E-27 | 1.091E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 1.393E-26 | 1.337E-26 | 1.218E-26 | 8.492E-27 | 3.090E-27 | 8.780E-28 | 4.559E-30 | 2.448E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 4.744E-23 | 4.634E-23 | 4.397E-23 | 3.585E-23 | 2.024E-23 | 9.932E-24 | 5.067E-25 | 7.160E-27 | 1.012E-28 | 1.414E-30 | 5.913E-32 | 1.998E-32 | 2.823E-34 | 0.000E+00 |
| i126 | 1.467E-26 | 1.318E-26 | 1.036E-26 | 4.053E-27 | 2.931E-28 | 1.114E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 1.484E-22 | 1.428E-22 | 1.311E-22 | 9.394E-23 | 3.695E-23 | 1.157E-23 | 9.000E-26 | 8.623E-29 | 8.262E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material  light elements  page 9

0

nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 1.283E-24 | 1.141E-24 | 8.768E-25 | 3.148E-25 | 1.787E-26 | 5.026E-28 | 1.651E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 5.151E-22 | 4.572E-22 | 3.496E-22 | 1.230E-22 | 6.536E-24 | 1.675E-25 | 2.001E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.733E-28 | 1.399E-28 | 8.646E-29 | 1.330E-29 | 7.039E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs134 | 5.519E-19 | 5.508E-19 | 5.486E-19 | 5.398E-19 | 5.160E-19 | 4.879E-19 | 3.860E-19 | 2.760E-19 | 1.974E-19 | 1.410E-19 | 1.098E-19 | 1.008E-19 | 7.208E-20 | 5.154E-20 |
| cs135 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 | 1.643E-27 |
| cs136 | 1.067E-26 | 9.599E-27 | 7.573E-27 | 3.013E-27 | 2.281E-28 | 9.178E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 4.193E-27 | 4.193E-27 | 4.192E-27 | 4.187E-27 | 4.174E-27 | 4.158E-27 | 4.092E-27 | 3.998E-27 | 3.907E-27 | 3.818E-27 | 3.753E-27 | 3.731E-27 | 3.646E-27 | 3.563E-27 |
| ba131 | 1.553E-21 | 1.376E-21 | 1.049E-21 | 3.655E-22 | 1.906E-23 | 4.824E-25 | 1.019E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 4.188E-20 | 4.187E-20 | 4.183E-20 | 4.170E-20 | 4.133E-20 | 4.088E-20 | 3.904E-20 | 3.655E-20 | 3.422E-20 | 3.204E-20 | 3.050E-20 | 2.999E-20 | 2.808E-20 | 2.629E-20 |
| ba137m | 1.464E-26 | 1.463E-26 | 1.463E-26 | 1.461E-26 | 1.457E-26 | 1.451E-26 | 1.428E-26 | 1.396E-26 | 1.364E-26 | 1.333E-26 | 1.310E-26 | 1.302E-26 | 1.273E-26 | 1.244E-26 |
| la137 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 |
| la138 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 | 5.459E-27 |
| ce139 | 1.201E-22 | 1.189E-22 | 1.162E-22 | 1.064E-22 | 8.312E-23 | 6.114E-23 | 1.693E-23 | 2.693E-24 | 4.286E-25 | 6.785E-26 | 1.724E-26 | 1.080E-26 | 1.718E-27 | 2.733E-28 |
| ce141 | 4.308E-25 | 4.128E-25 | 3.750E-25 | 2.582E-25 | 9.084E-26 | 2.474E-26 | 1.077E-28 | 4.488E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 1.792E-27 | 1.773E-27 | 1.731E-27 | 1.575E-27 | 1.209E-27 | 8.705E-28 | 2.202E-28 | 3.079E-29 | 4.306E-30 | 5.988E-31 | 1.382E-31 | 8.373E-32 | 1.171E-32 | 1.637E-33 |
| tm171 | 4.549E-25 | 4.540E-25 | 4.520E-25 | 4.442E-25 | 4.232E-25 | 3.985E-25 | 3.097E-25 | 2.159E-25 | 1.505E-25 | 1.048E-25 | 8.011E-26 | 7.308E-26 | 5.094E-26 | 3.551E-26 |
| lu172 | 2.926E-23 | 2.925E-23 | 2.920E-23 | 2.881E-23 | 2.744E-23 | 2.579E-23 | 1.972E-23 | 1.361E-23 | 9.399E-24 | 6.483E-24 | 4.919E-24 | 4.476E-24 | 3.090E-24 | 2.134E-24 |
| lu172m | 5.038E-25 | 5.027E-25 | 5.004E-25 | 4.916E-25 | 4.678E-25 | 4.397E-25 | 3.394E-25 | 2.344E-25 | 1.618E-25 | 1.116E-25 | 8.469E-26 | 7.706E-26 | 5.321E-26 | 3.674E-26 |
| lu173 | 9.985E-20 | 9.957E-20 | 9.896E-20 | 9.659E-20 | 9.025E-20 | 8.294E-20 | 5.825E-20 | 3.514E-20 | 2.119E-20 | 1.276E-20 | 8.757E-21 | 7.698E-21 | 4.643E-21 | 2.800E-21 |
| lu174 | 1.046E-19 | 1.045E-19 | 1.043E-19 | 1.035E-19 | 1.013E-19 | 9.849E-20 | 8.630E-20 | 7.039E-20 | 5.716E-20 | 4.635E-20 | 3.966E-20 | 3.760E-20 | 3.050E-20 | 2.474E-20 |
| lu174m | 3.220E-20 | 3.189E-20 | 3.119E-20 | 2.864E-20 | 2.255E-20 | 1.674E-20 | 4.822E-21 | 8.117E-22 | 1.367E-22 | 2.289E-23 | 6.069E-24 | 3.854E-24 | 6.489E-25 | 1.092E-25 |
| lu176 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 | 2.453E-26 |
| lu177 | 1.307E-19 | 1.296E-19 | 1.271E-19 | 1.178E-19 | 9.534E-20 | 7.325E-20 | 2.434E-20 | 5.029E-21 | 1.039E-21 | 2.138E-22 | 6.601E-23 | 4.417E-23 | 9.125E-24 | 1.885E-24 |
| lu177m | 7.995E-19 | 7.926E-19 | 7.773E-19 | 7.207E-19 | 5.832E-19 | 4.481E-19 | 1.489E-19 | 3.077E-20 | 6.357E-21 | 1.308E-21 | 4.038E-22 | 2.702E-22 | 5.582E-23 | 1.153E-23 |
| hf172 | 2.620E-24 | 2.615E-24 | 2.603E-24 | 2.557E-24 | 2.433E-24 | 2.287E-24 | 1.765E-24 | 1.219E-24 | 8.416E-25 | 5.805E-25 | 4.405E-25 | 4.008E-25 | 2.767E-25 | 1.911E-25 |
| hf174 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 | 3.038E-29 |
| hf175 | 4.385E-16 | 4.299E-16 | 4.111E-16 | 3.457E-16 | 2.128E-16 | 1.163E-16 | 9.312E-18 | 2.508E-19 | 6.756E-21 | 1.802E-22 | 1.219E-23 | 4.854E-24 | 1.307E-25 | 3.522E-27 |
| hf177m | 3.854E-18 | 3.821E-18 | 3.748E-18 | 3.475E-18 | 2.812E-18 | 2.160E-18 | 7.179E-19 | 1.483E-19 | 3.061E-20 | 6.305E-21 | 1.947E-21 | 1.303E-21 | 2.691E-22 | 5.561E-23 |
| hf181 | 4.231E-17 | 4.094E-17 | 3.804E-17 | 2.857E-17 | 1.282E-17 | 4.729E-18 | 7.310E-20 | 1.870E-22 | 4.784E-25 | 1.204E-27 | 1.409E-29 | 3.301E-30 | 7.881E-33 | 0.000E+00 |
| hf182 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 | 7.445E-24 |
| ta179 | 8.487E-23 | 8.470E-23 | 8.430E-23 | 8.278E-23 | 7.865E-23 | 7.381E-23 | 5.657E-23 | 3.866E-23 | 2.643E-23 | 1.804E-23 | 1.359E-23 | 1.233E-23 | 8.427E-24 | 5.760E-24 |
| ta182 | 6.209E-16 | 6.135E-16 | 5.970E-16 | 5.371E-16 | 3.995E-16 | 2.764E-16 | 5.922E-17 | 6.529E-18 | 7.198E-19 | 7.892E-20 | 1.529E-20 | 8.734E-21 | 9.960E-22 | 1.429E-22 |
| ta183 | 4.299E-29 | 3.276E-29 | 1.777E-29 | 1.647E-30 | 2.111E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| w181 | 1.986E-20 | 1.964E-20 | 1.914E-20 | 1.731E-20 | 1.308E-20 | 9.229E-21 | 2.147E-21 | 2.662E-22 | 3.301E-23 | 4.070E-24 | 8.591E-25 | 5.047E-25 | 6.258E-26 | 7.760E-27 |
| w185 | 1.644E-17 | 1.614E-17 | 1.548E-17 | 1.317E-17 | 8.381E-18 | 4.773E-18 | 4.536E-19 | 1.562E-20 | 5.376E-22 | 1.834E-23 | 1.490E-24 | 6.315E-25 | 2.174E-26 | 7.485E-28 |
| w188 | 2.147E-19 | 2.105E-19 | 2.013E-19 | 1.691E-19 | 1.040E-19 | 5.672E-20 | 5.504E-21 | 1.000E-22 | 1.194E-24 | 8.423E-26 | 5.650E-27 | 2.243E-27 | 5.974E-29 | 1.591E-30 |
| re183 | 1.867E-23 | 1.831E-23 | 1.751E-23 | 1.472E-23 | 9.063E-24 | 4.954E-24 | 3.966E-25 | 1.068E-26 | 2.877E-28 | 7.674E-30 | 5.191E-31 | 2.067E-31 | 5.568E-33 | 1.500E-34 |
| re184 | 9.916E-21 | 9.805E-21 | 9.563E-21 | 8.708E-21 | 6.853E-21 | 5.223E-21 | 1.810E-21 | 4.065E-22 | 9.097E-23 | 2.027E-23 | 6.621E-24 | 4.521E-24 | 1.015E-24 | 2.272E-25 |
| re184m | 5.153E-21 | 5.111E-21 | 5.017E-21 | 4.670E-21 | 3.820E-21 | 2.974E-21 | 1.045E-21 | 2.339E-22 | 5.234E-23 | 1.167E-23 | 3.823E-24 | 2.611E-24 | 5.842E-25 | 1.307E-25 |
| re186 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.852E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 | 5.851E-23 |
| re186m | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 | 2.341E-23 |
| re187 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 | 8.563E-28 |
| re188 | 1.793E-18 | 1.757E-18 | 1.680E-18 | 1.412E-18 | 8.681E-19 | 4.736E-19 | 4.559E-20 | 1.002E-21 | 2.667E-23 | 7.033E-25 | 4.718E-26 | 1.873E-26 | 6.000E-28 | 0.000E+00 |
| os185 | 1.169E-19

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| au194 | 7.087E-25 | 7.087E-25 | 7.087E-25 | 7.090E-25 | 7.085E-25 | 7.083E-25 | 7.075E-25 | 7.064E-25 | 7.053E-25 | 7.042E-25 | 7.034E-25 | 7.031E-25 | 7.020E-25 | 7.009E-25 |
| au195 | 7.503E-21 | 7.448E-21 | 7.324E-21 | 6.862E-21 | 5.717E-21 | 4.555E-21 | 1.762E-21 | 4.525E-22 | 1.162E-22 | 2.973E-23 | 1.079E-23 | 7.634E-24 | 1.960E-24 | 5.034E-25 |
| hg194 | 6.176E-27 | 6.176E-27 | 6.176E-27 | 6.175E-27 | 6.174E-27 | 6.173E-27 | 6.166E-27 | 6.156E-27 | 6.147E-27 | 6.137E-27 | 6.130E-27 | 6.127E-27 | 6.118E-27 | 6.108E-27 |
| hg203 | 2.864E-18 | 2.780E-18 | 2.600E-18 | 2.004E-18 | 9.667E-19 | 3.901E-19 | 8.784E-21 | 3.850E-23 | 1.688E-25 | 7.289E-28 | 1.275E-29 | 3.195E-30 | 1.401E-32 | 0.000E+00 |
| tl202 | 1.008E-26 | 9.007E-27 | 6.991E-27 | 2.610E-27 | 1.654E-28 | 5.401E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 7.153E-32 | 0.000E+00 | 0.000E+00 |
| tl204 | 6.807E-19 | 6.800E-19 | 6.785E-19 | 6.725E-19 | 6.562E-19 | 6.364E-19 | 5.600E-19 | 4.663E-19 | 3.883E-19 | 3.232E-19 | 2.819E-19 | 2.691E-19 | 2.241E-19 | 1.866E-19 |
| total | 2.974E-07 | 2.974E-07 | 2.972E-07 | 2.964E-07 | 2.942E-07 | 2.915E-07 | 2.806E-07 | 2.657E-07 | 2.516E-07 | 2.382E-07 | 2.288E-07 | 2.256E-07 | 2.137E-07 | 2.025E-07 |

1

5 more years for cooling used fuel material light elements page 11

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 2.896E-07 | 2.895E-07 | 2.893E-07 | 2.885E-07 | 2.864E-07 | 2.837E-07 | 2.728E-07 | 2.578E-07 | 2.438E-07 | 2.304E-07 | 2.209E-07 | 2.178E-07 | 2.059E-07 | 1.946E-07 |
| be | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 | 5.606E-11 |
| c | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.784E-09 | 7.783E-09 | 7.782E-09 | 7.781E-09 | 7.780E-09 | 7.780E-09 | 7.780E-09 | 7.779E-09 | 7.778E-09 |
| na | 1.056E-22 | 1.054E-22 | 1.051E-22 | 1.038E-22 | 1.001E-22 | 9.576E-23 | 7.951E-23 | 6.093E-23 | 4.669E-23 | 3.576E-23 | 2.932E-23 | 2.740E-23 | 2.100E-23 | 1.609E-23 |
| al | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 | 1.119E-26 |
| si | 2.361E-24 | 2.361E-24 | 2.361E-24 | 2.361E-24 | 2.359E-24 | 2.357E-24 | 2.350E-24 | 2.339E-24 | 2.329E-24 | 2.318E-24 | 2.310E-24 | 2.308E-24 | 2.297E-24 | 2.287E-24 |
| p | 3.054E-21 | 2.882E-21 | 2.530E-21 | 1.536E-21 | 4.046E-22 | 9.456E-23 | 2.394E-23 | 2.376E-23 | 2.366E-23 | 2.355E-23 | 2.347E-23 | 2.344E-23 | 2.334E-23 | 2.323E-23 |
| s | 6.616E-19 | 6.512E-19 | 6.284E-19 | 5.471E-19 | 3.711E-19 | 2.289E-19 | 3.037E-20 | 1.686E-21 | 9.360E-23 | 5.155E-24 | 5.978E-25 | 2.862E-25 | 1.589E-26 | 8.820E-28 |
| cl | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.418E-21 | 3.417E-21 | 3.417E-21 |
| ar | 8.725E-20 | 8.709E-20 | 8.676E-20 | 8.571E-20 | 8.413E-20 | 8.342E-20 | 8.299E-20 | 8.278E-20 | 8.256E-20 | 8.235E-20 | 8.219E-20 | 8.214E-20 | 8.193E-20 | 8.172E-20 |
| k | 3.030E-23 | 3.030E-23 | 3.030E-23 | 3.029E-23 | 3.029E-23 | 3.029E-23 | 3.027E-23 | 3.024E-23 | 3.022E-23 | 3.020E-23 | 3.018E-23 | 3.017E-23 | 3.015E-23 | 3.013E-23 |
| ca | 1.363E-18 | 1.351E-18 | 1.326E-18 | 1.230E-18 | 9.984E-19 | 7.698E-19 | 2.596E-19 | 5.478E-20 | 1.156E-20 | 2.430E-21 | 7.629E-22 | 5.136E-22 | 1.093E-22 | 2.395E-23 |
| sc | 3.430E-16 | 3.374E-16 | 3.250E-16 | 2.812E-16 | 1.875E-16 | 1.132E-16 | 2.373E-17 | 3.270E-18 | 1.671E-22 | 7.741E-23 | 3.780E-24 | 1.846E-25 | 1.846E-25 | 1.846E-25 |
| v | 1.780E-22 | 1.772E-22 | 1.756E-22 | 1.692E-22 | 1.527E-22 | 1.343E-22 | 7.861E-23 | 3.652E-23 | 1.697E-23 | 7.865E-24 | 4.442E-24 | 3.654E-24 | 1.697E-24 | 7.885E-25 |
| cr | 6.624E-20 | 6.301E-20 | 5.630E-20 | 3.633E-20 | 1.066E-20 | 2.317E-21 | 3.924E-24 | 4.239E-28 | 4.578E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 1.384E-17 | 1.378E-17 | 1.364E-17 | 1.312E-17 | 1.177E-17 | 1.028E-17 | 5.833E-18 | 2.593E-18 | 1.152E-18 | 5.112E-19 | 2.794E-19 | 2.272E-19 | 1.010E-19 | 4.490E-20 |
| fe | 8.634E-18 | 8.377E-18 | 7.827E-18 | 6.021E-18 | 2.940E-18 | 1.284E-18 | 2.270E-19 | 1.613E-19 | 1.253E-19 | 9.724E-20 | 8.057E-20 | 7.555E-20 | 5.869E-20 | 4.560E-20 |
| co | 2.969E-15 | 2.967E-15 | 2.962E-15 | 2.943E-15 | 2.891E-15 | 2.828E-15 | 2.579E-15 | 2.261E-15 | 1.983E-15 | 1.738E-15 | 1.576E-15 | 1.524E-15 | 1.336E-15 | 1.172E-15 |
| ni | 1.969E-19 | 1.969E-19 | 1.968E-19 | 1.968E-19 | 1.966E-19 | 1.964E-19 | 1.955E-19 | 1.942E-19 | 1.929E-19 | 1.916E-19 | 1.906E-19 | 1.903E-19 | 1.890E-19 | 1.878E-19 |
| zn | 6.564E-20 | 6.527E-20 | 6.446E-20 | 6.131E-20 | 5.334E-20 | 4.486E-20 | 2.173E-20 | 7.703E-21 | 2.730E-21 | 9.650E-22 | 4.455E-22 | 3.421E-22 | 1.221E-22 | 4.297E-23 |
| sn | 5.373E-24 | 5.372E-24 | 5.369E-24 | 5.360E-24 | 5.334E-24 | 5.305E-24 | 5.204E-24 | 5.094E-24 | 5.002E-24 | 4.919E-24 | 4.860E-24 | 4.840E-24 | 4.763E-24 | 4.688E-24 |
| sb | 3.652E-22 | 3.571E-22 | 3.395E-22 | 2.792E-22 | 1.626E-22 | 8.476E-23 | 1.136E-23 | 5.760E-24 | 4.435E-24 | 3.447E-24 | 2.859E-24 | 2.682E-24 | 2.086E-24 | 1.623E-24 |
| te | 7.708E-20 | 7.564E-20 | 7.252E-20 | 6.165E-20 | 3.976E-20 | 2.379E-20 | 3.807E-21 | 4.122E-22 | 4.905E-23 | 6.025E-24 | 1.382E-24 | 8.728E-25 | 2.222E-25 | 1.183E-25 |
| i | 4.745E-23 | 4.636E-23 | 4.398E-23 | 3.585E-23 | 2.024E-23 | 9.932E-24 | 5.067E-25 | 7.161E-27 | 1.019E-28 | 2.148E-30 | 7.935E-31 | 7.544E-31 | 7.347E-31 | 7.344E-31 |
| xe | 1.497E-22 | 1.440E-22 | 1.320E-22 | 9.426E-23 | 3.697E-23 | 1.157E-23 | 9.000E-26 | 8.623E-29 | 8.262E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 5.524E-19 | 5.513E-19 | 5.489E-19 | 5.399E-19 | 5.160E-19 | 4.879E-19 | 3.860E-19 | 2.760E-19 | 1.974E-19 | 1.410E-19 | 1.098E-19 | 1.008E-19 | 7.208E-20 | 5.154E-20 |
| ba | 4.343E-20 | 4.324E-20 | 4.288E-20 | 4.207E-20 | 4.135E-20 | 4.088E-20 | 3.904E-20 | 3.655E-20 | 3.422E-20 | 3.204E-20 | 3.050E-20 | 2.999E-20 | 2.808E-20 | 2.629E-20 |
| la | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.295E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 | 2.294E-21 |
| ce | 1.205E-22 | 1.193E-22 | 1.166E-22 | 1.066E-22 | 8.321E-23 | 6.116E-23 | 1.693E-23 | 2.693E-24 | 4.286E-25 | 6.785E-26 | 1.724E-26 | 1.080E-26 | 1.718E-27 | 2.733E-28 |
| tm | 4.567E-25 | 4.558E-25 | 4.537E-25 | 4.458E-25 | 4.244E-25 | 3.993E-25 | 3.099E-25 | 2.159E-25 | 1.505E-25 | 1.048E-25 | 8.011E-26 | 7.308E-26 | 5.094E-26 | 3.551E-26 |
| lu | 1.167E-18 | 1.158E-18 | 1.139E-18 | 1.067E-18 | 8.927E-19 | 7.196E-19 | 3.226E-19 | 1.421E-19 | 8.590E-20 | 6.067E-20 | 4.890E-20 | 4.562E-20 | 3.522E-20 | 2.756E-20 |
| hf | 4.846E-16 | 4.746E-16 | 4.529E-16 | 3.778E-16 | 2.284E-16 | 1.232E-16 | 1.010E-17 | 3.994E-19 | 3.741E-20 | 6.493E-21 | 1.967E-21 | 1.315E-21 | 2.770E-22 | 6.325E-23 |
| ta | 6.209E-16 | 6.135E-16 | 5.970E-16 | 5.371E-16 | 3.995E-16 | 2.764E-16 | 5.922E-17 | 6.529E-18 | 7.199E-19 | 7.894E-20 | 1.530E-20 | 8.746E-21 | 1.004E-21 | 1.487E-22 |
| w | 1.668E-17 | 1.637E-17 | 1.570E-17 | 1.336E-17 | 8.498E-18 | 4.839E-18 | 4.602E-19 | 1.600E-20 | 5.739E-22 | 2.250E-23 | 2.355E-24 | 1.138E-24 | 8.438E-26 | 8.511E-27 |
| re | 1.808E-18 | 1.772E-18 | 1.695E-18 | 1.426E-18 | 8.788E-19 | 4.819E-19 | 4.055E-20 | 1.724E-21 | 5.519E-22 | 1.146E-22 | 9.242E-23 | 8.908E-23 | 8.352E-23 | 8.228E-23 |
| os | 1.170E-19 | 1.152E-19 | 1.115E-19 | 9.790E-20 | 6.811E-20 | 4.336E-20 | 6.566E-21 | 4.456E-22 | 3.487E-23 | 6.792E-24 | 4.696E-24 | 4.437E-24 | 3.845E-24 | 3.419E-24 |
| ir | 1.588E-16 | 1.558E-16 | 1.494E-16 | 1.267E-16 | 8.000E-17 | 4.512E-17 | 4.117E-18 | 1.339E-19 | 4.447E-21 | 2.307E-22 | 9.430E-23 | 8.555E-23 | 7.232E-23 | 6.431E-23 |
| pt | 5.939E-19 | 5.938E-19 | 5.937E-19 | 5.933E-19 | 5.922E-19 | 5.909E-19 | 5.852E-19 | 5.771E-19 | 5.692E-19 | 5.613E-19 | 5.556E-19 | 5.536E-19 | 5.460E-19 | 5.385E-19 |
| au | 7.504E-21 | 7.448E-21 | 7.324E-21 | 6.862E-21 | 5.718E-21 | 4.556E-21 | 1.763E-21 | 4.532E-22 | 1.169E-22 | 3.043E-23 | 1.150E-23 | 8.337E-24 | 2.662E-24 | 1.204E-24 |
| hg | 2.864E-18 | 2.780E-18 | 2.600E-18 | 2.004E-18 | 9.667E-19 | 3.901E-19 | 8.784E-21 | 3.851E-23 | 1.749E-25 | 6.866E-27 | 6.143E-27 | 6.131E-27 | 6.118E-27 | 6.108E-27 |
| tl | 6.807E-19 | 6.800E-19 | 6.785E-19 | 6.725E-19 | 6.562E-19 | 6.364E-19 | 5.600E-19 | 4.663E-19 | 3.883E-19 | 3.232E-19 | 2.819E-19 | 2.691E-19 | 2.241E-19 | 1.866E-19 |
| totals | 2.974E-07 | 2.974E-07 | 2.972E-07 | 2.964E-07 | 2.942E-07 | 2.915E-07 | 2.806E-07 | 2.657E-07 | 2.516E-07 | 2.382E-07 | 2.288E-07 | 2.256E-07 | 2.137E-07 | 2.025E-07 |

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5 more years for cooling used fuel material actinides page 12

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he 4 | 3.660E-02 | 3.666E-02 | 3.679E-02 | 3.728E-02 | 3.850E-02 | 3.980E-02 | 4.351E-02 | 4.681E-02 | 4.949E-02 | 5.206E-02 | 5.395E-02 | 5.460E-02 | 5.714E-02 | 5.969E-02 |
| li 6 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 | 4.326E-17 |
| li 7 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 |
| tl207 | 3.676E-18 | 3.675E-18 | 3.680E-18 | 3.750E-18 | 4.084E-18 | 4.536E-18 | 6.772E-18 | 9.507E-18 | 1.226E-17 | 1.502E-17 | 1.708E-17 | 1.745E-17 | 2.056E-17 | 2.335E-17 |
| tl208 | 5.000E-14 | 5.021E-14 | 5.032E-14 | 5.237E-14 | 6.012E-14 | 6.894E-14 | 1.088E-13 | 1.698E-13 | 2.294E-13 | 2.841E-13 | 3.206E-13 | 3.324E-13 | 3.726E-13 | 4.064E-13 |
| pb204 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 |
| pb205 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.986E-17 | 1.987E-17 | 1.987E-17 | 1.987E-17 | 1.987E-17 | 1.987E-17 | 1.987E-17 |
| pb206 | 2.821E-14 | 2.832E-14 | 2.858E-14 | 2.959E-14 | 3.249E-14 | 3.625E-14 | 5.252E-14 | 7.619E-14 | 9.985E-14 | 1.236E-13 | 1.416E-13 | 1.478E-13 | 1.726E-13 | 1.987E-13 |
| pb207 | 9.935E-13 | 9.950E-13 | 9.985E-13 | 1.012E-12 | 1.052E-12 | 1.108E-12 | 1.408E-12 | 2.019E-12 | 2.840E-12 | 3.875E-12 | 4.781E-12 | 5.117E-12 | 6.570E-12 | 8.239E-12 |
| pb208 | 1.298E-08 | 1.307E-08 | 1.328E-08 | 1.413E-08 | 1.663E-08 | 2.018E-08 | 4.060E-08 | 7.266E-08 | 1.529E-07 | 3.384E-07 | 3.131E-07 | 3.407E-07 | 4.377E-07 | 5.870E-07 |
| pb209 | 2.500E-16 | 2.501E-16 | 2.500E-16 | 2.498E-16 | 2.497E-16 | 2.499E-16 | 2.511E-16 | 2.527E-16 | 2.546E-16 | 2.566E-16 | 2.583E-16 | 2.586E-16 | 2.613E-16 | 2.639E-16 |
| pb210 | 7.933E-13 | 7.932E-13 | 7.930E-13 | 7.922E-13 | 7.901E-13 | 7.876E-13 | 7.788E-13 | 7.721E-13 | 7.737E-13 | 7.858E-13 | 8.028E-13 | 8.103E-13 | 8.496E-13 | 9.061E-13 |
| pb211 | 2.844E-17 | 2.843E-17 | 2.847E-17 | 2.901E-17 | 3.159E-17 | 3.509E-17 | 5.239E-17 | 7.355E-17 | 9.480E-17 | 1.162E-16 | 1.322E-16 | 1.350E-16 | 1.591E-16 | 1.806E-16 |
| pb212 | 2.965E-11 | 2.963E-11 | 2.984E-11 | 3.105E-11 | 3.565E-11 | 4.088E-11 | 6.453E-11 | 1.007E-10 | 1.360E-10 | 1.685E-10 | 1.901E-10 | 1.971E-10 | 2.210E-10 | 2.410E-10 |
| bi208 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 | 1.962E-17 |
| bi209 | 1.761E-12 | 1.763E-12 | 1.769E-12 | 1.792E-12 | 1.855E-12 | 1.933E-12 | 2.260E-12 | 2.730E-12 | 3.203E-12 | 3.681E-12 | 4.039E-12 | 4.162E-12 | 4.647E-12 | 5.137E-12 |
| bi210m | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 | 2.738E-17 |
| bi210 | 4.906E-16 | 4.906E-16 | 4.904E-16 | 4.899E-16 | 4.886E-16 | 4.873E-16 | 4.817E-16 | 4.775E-16 | 4.785E-16 | 4.860E-16 | 4.965E-16 | 5.012E-16 | 5.255E-16 | 5.604E-16 |
| bi211 | 1.686E-18 | 1.685E-18 | 1.688E-18 | 1.720E-18 | 1.873E-18 | 2.080E-18 | 3.105E-18 | 4.360E-18 | 5.620E-18 | 6.888E-18 | 7.834E-18 | 8.000E-18 | 9.429E-18 | 1.071E-17 |
| bi212 | 2.812E-12 | 2.824E-12 | 2.830E-12 | 2.945E-12 | 3.381E-12 | 3.877E-12 | 6.121E-12 | 9.548E-12 | 1.290E-11 | 1.598E-11 | 1.803E-11 | 1.870E-11 | 2.096E-11 | 2.286E-11 |
| bi213 | 5.952E-17 | 5.953E-17 | 5.951E-17 | 5.945E-17 | 5.945E-17 | 5.950E-17 | 5.977E-17 | 6.016E-17 | 6.060E-17 | 6.109E-17 | 6.148E-17 | 6.156E-17 | 6.219E-17 | 6.281E-17 |
| po210 | 1.162E-14 | 1.164E-14 | 1.168E-14 | 1.184E-14 | 1.220E-14 | 1.249E-14 | 1.298E-14 | 1.304E-14 | 1.302E-14 | 1.314E-14 | 1.333E-14 | 1.342E-14 | 1.396E-14 | 1.476E-14 |
| po216 | 1.143E-16 | 1.144E-16 | 1.150E-16 | 1.198E-16 | 1.375E-16 | 1.577E-16 | 2.489E-16 | 3.883E-16 | 5.246E-16 | 6.497E-16 | 7.332E-16 | 7.603E-16 | 8.523E-16 | 9.295E-16 |
| rn220 | 4.466E-14 | 4.466E-14 | 4.490E-14 | 4.678E-14 | 5.370E-14 | 6.158E-14 | 9.720E-14 | 1.516E-13 | 2.049E-13 | 2.537E-13 | 2.863E-13 | 2.969E-13 | 3.328E-13 | 3.630E-13 |
| rn222 | 1.312E-16 | 1.313E-16 | 1.318E-16 | 1.349E-16 | 1.462E-16 | 1.594E-16 | 2.232E-16 | 3.402E-16 | 4.909E-16 | 6.797E-16 | 8.468E-16 | 9.095E-16 | 1.185E-15 | 1.509E-15 |
| fr221 | 6.638E-18 | 6.639E-18 | 6.636E-18 | 6.631E-18 | 6.630E-18 | 6.635E-18 | 6.666E-18 | 6.710E-18 | 6.758E-18 | 6.813E-18 | 6.856E-18 | 6.866E-18 | 6.936E-18 | 7.005E-18 |
| ra223 | 1.370E-14 | 1.370E-14 | 1.372E-14 | 1.398E-14 | 1.522E-14 | 1.691E-14 | 2.524E-14 | 3.544E-14 | 4.568E-14 | 5.599E-14 | 6.368E-14 | 6.503E-14 | 7.665E-14 | 8.702E-14 |
| ra224 | 2.586E-10 | 2.586E-10 | 2.600E-10 | 2.709E-10 | 3.110E-10 | 3.566E-10 | 5.629E-10 | 8.781E-10 | 1.186E-09 | 1.469E-09 | 1.658E-09 | 1.720E-09 | 1.927E-09 | 2.102E-09 |
| ra225 | 2.955E-14 | 2.955E-14 | 2.955E-14 | 2.954E-14 | 2.956E-14 | 2.958E-14 | 2.972E-14 | 2.991E-14 | 3.013E-14 | 3.037E-14 | 3.056E-14 | 3.062E-14 | 3.092E-14 | 3.123E-14 |
| ra226 | 2.042E-11 | 2.048E-11 | 2.062E-11 | 2.116E-11 | 2.274E-11 | 2.480E-11 | 3.473E-11 | 5.294E-11 | 7.638E-11 | 1.058E-10 | 1.318E-10 | 1.415E-10 | 1.843E-10 | 2.348E-10 |
| ra228 | 5.590E-16 | 5.595E-16 | 5.607E-16 | 5.653E-16 | 5.780E-16 | 5.938E-16 | 6.583E-16 | 7.470E-16 | 8.319E-16 | 9.136E-16 | 9.724E-16 | 9.922E-16 | 1.068E-15 | 1.142E-15 |
| ac225 | 1.986E-14 | 1.986E-14 | 1.985E-14 | 1.984E-14 | 1.983E-14 | 1.985E-14 | 1.994E-14 | 2.007E-14 | 2.020E-14 | 2.038E-14 | 2.051E-14 | 2.056E-14 | 2.075E-14 | 2.096E-14 |
| ac227 | 1.019E-11 | 1.023E-11 | 1.032E-11 | 1.066E-11 | 1.162E-11 | 1.282E-11 | 1.784E-11 | 2.506E-11 | 3.229E-11 | 3.958E-11 | 4.500E-11 | 4.686E-11 | 5.417E-11 | 6.151E-11 |
| th227 | 2.239E-14 | 2.248E-14 | 2.268E-14 | 2.347E-14 | 2.570E-14 | 2.848E-14 | 4.141E-14 | 5.814E-14 | 7.495E-14 | 9.186E-14 | 1.045E-13 | 1.074E-13 | 1.258E-13 | 1.428E-13 |
| th228 | 5.009E-08 | 5.035E-08 | 5.095E-08 | 5.331E-08 | 6.012E-08 | 6.896E-08 | 1.090E-07 | 1.701E-07 | 2.298E-07 | 2.845E-07 | 3.209E-07 | 3.324E-07 | 3.731E-07 | 4.069E-07 |
| th229 | 5.409E-09 | 5.409E-09 | 5.409E-09 | 5.410E-09 | 5.414E-09 | 5.419E-09 | 5.442E-09 | 5.477E-09 | 5.517E-09 | 5.561E-09 | 5.597E-09 | 5.609E-09 | 5.662E-09 | 5.719E-09 |
| th230 | 1.240E-06 | 1.243E-06 | 1.248E-06 | 1.270E-06 | 1.330E-06 | 1.408E-06 | 1.750E-06 | 2.297E-06 | 2.912E-06 | 3.597E-06 | 4.149E-06 | 4.346E-06 | 5.163E-06 | 6.045E-06 |
| th231 | 5.143E-11 | 5.143E-11 | 5.143E-11 | 5.143E-11 | 5.144E-11 | 5.144E-11 | 5.146E-11 | 5.148E-11 | 5.150E-11 | 5.152E-11 | 5.153E-11 | 5.154E-11 | 5.156E-11 | 5.158E-11 |
| th232 | 3.365E-06 | 3.366E-06 | 3.367E-06 | 3.374E-06 | 3.392E-06 | 3.415E-06 | 3.515E-06 | 3.647E-06 | 3.788E-06 | 3.922E-06 | 4.060E-06 | 4.198E-06 | 4.337E-06 | 4.475E-06 |
| th234 | 2.031E-07 | 2.031E-07 | 2.031E-07 | 2.031E-07 | 2.031E-07 | 2.031E-07 | 2.032E-07 | 2.031E-07 | 2.031E-07 | 2.031E-07 | 2.032E-07 | 2.031E-07 | 2.031E-07 | 2.031E-07 |
| pa230 | 4.006E-17 | 3.700E-17 | 3.092E-17 | 1.540E-17 | 2.187E-18 | 1.925E-19 | 7.461E-24 | 3.614E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 3.605E-07 | 3.606E-07 | 3.607E-07 | 3.614E-07 | 3.631E-07 | 3.652E-07 | 3.738E-07 | 3.861E-07 | 3.984E-07 | 4.107E-07 | 4.199E-07 | 4.230E-07 | 4.353E-07 | 4.477E-07 |
| pa232 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 | 2.360E-16 |
| pa233 | 9.524E-08 | 9.524E-08 | 9.524E-08 | 9.525E-08 | 9.528E-08 | 9.533E-08 | 9.558E-08 | 9.614E-08 | 9.680E-08 | 9.759E-08 | 9.816E-08 | 9.840E-08 | 9.956E-08 | 1.007E-07 |
| pa234m | 6.783E-12 | 6.784E-12 | 6.784E-12 | 6.783E-12 | 6.783E-12 | 6.783E-12 | 6.788E-12 | 6.784E-12 | 6.784E-12 | 6.784E-12 | 6.786E-12 | 6.784E-12 | 6.784E-12 | 6.784E-12 |
| pa234 | 3.764E-12 | 3.762E-12 | 3.765E-12 | 3.764E-12 | 3.764E-12 | 3.764E-12 | 3.767E-12 | 3.764E-12 | 3.764E-12 | 3.764E-12 | 3.766E-12 | 3.764E-12 | 3.764E-12 | 3.764E-12 |
| u230 | 8.927E-17 | 8.375E-17 | 7.252E-17 | 4.136E-17 | 8.473E-18 | 1.154E-18 | 2.506E-22 | 1.307E-27 | 6.821E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 6.745E-06 | 6.765E-06 | 6.809E-06 | 6.977E-06 | 7.439E-06 | 7.992E-06 | 1.006E-05 | 1.243E-05 | 1.425E-05 | 1.563E-05 | 1.644E-05 | 1.667E-05 | 1.744E-05 | 1.800E-05 |
| u233 | 6.946E-06 | 6.951E-06 | 6.962E-06 | 7.005E-06 | 7.125E-06 | 7.274E-06 | 7.900E-06 | 8.894E-06 | 9.895E-06 | 1.091E-05 | 1.159E-05 | 1.182E-05 | 1.285E-05 | 1.389E-05 |
| u234 | 1.600E-01 | 1.601E-01 | 1.604E-01 | 1.615E-01 | 1.646E-01 | 1.685E-01 | 1.852E-01 | 2.096E-01 | 2.340E-01 | 2.583E-01 | 2.762E-01 | 2.823E-01 | 3.062E-01 | 3.299E-01 |
| u235 | 1.265E+01 | 1.265E+01 | 1.265E+01 | 1.265E+01 | 1.265E+01 | 1.265E+01 | 1.265E+01 | 1.266E+01 | 1.267E+01 | 1.267E+01 | 1.267E+01 | 1.268E+01 | 1.268E+01 | 1.269E+01 |
| u236 | 4.689E+00 | 4.689E+00 | 4.689E+00 | 4.689E+00 | 4.691E+00 | 4.693E+00 | 4.700E+00 | 4.712E+00 | 4.723E+00 | 4.734E+00 | 4.742E+00 | 4.745E+00 | 4.756E+00 | 4.767E+00 |

1

5 more years for cooling used fuel material actinides page 13

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 1.957E-06 | 1.956E-06 | 1.955E-06 | 1.951E-06 | 1.938E-06 | 1.922E-06 | 1.858E-06 | 1.770E-06 | 1.687E-06 | 1.607E-06 | 1.550E-06 | 1.531E-06 | 1.458E-06 | 1.389E-06 |
| u238 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 | 1.399E+04 |
| u240 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 | 3.808E-14 |
| np235 | 3.632E-08 | 3.620E-08 | 3.591E-08 | 3.489E-08 | 3.197E-08 | 2.873E-08 | 1.836E-08 | 7.711E-09 | 3.128E-09 | 2.703E-09 | 1.679E-09 | 1.427E-09 | 7.536E-10 | 3.979E-10 |
| np236 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 | 5.082E-06 |
| np237 | 2.813E+00 | 2.813E+00 | 2.813E+00 | 2.813E+00 | 2.814E+00 | 2.816E+00 | 2.824E+00 | 2.839E+00 | 2.858E+00 | 2.881E+00 | 2.901E+00 | 2.909E+00 | 2.940E+00 | 2.974E+00 |
| np238 | 9.559E-09 | 9.559E-09 | 9.558E-09 | 9.556E-09 | 9.550E-09 | 9.542E-09 | 9.509E-09 | 9.462E-09 | 9.416E-09 | 9.370E-09 | 9.336E-09 | 9.324E-09 | 9.278E-09 | 9.233E-09 |
| np239 | 5.187E-06 | 5.187E-06 | 5.187E-06 | 5.187E-06 | 5.187E-06 | 5.187E-06 | 5.187E-06 | 5.186E-06 | 5.186E-06 | 5.185E-06 | 5.185E-06 | 5.185E-06 | 5.184E-06 | 5.184E-06 |
| np240m | 3.250E-16 | 3.252E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 | 3.250E-16 |
| np240 | 3.343E-18 | 3.346E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 | 3.343E-18 |
| pu236 | 1.522E-05 | 1.520E-05 | 1.515E-05 | 1.496E-05 | 1.450E-05 | 1.392E-05 | 1.155E-05 | 9.224E-06 | 7.238E-06 | 5.676E-06 | 4.738E-06 | 4.455E-06 | 3.496E-06 | 2.743E-06 |
| pu237 | 2.460E-07 | 2.386E-07 | 2.229E-07 | 1.708E-07 | 8.117E-08 | 3.214E-08 | 6.686E-10 | 2.616E-12 | 1.024E-14 | 3.946E-17 | 6.340E-19 | 1.544E-19 | 6.043E-22 | 2.365E-24 |
| pu238 | 2.895E+00 | 2.897E+00 | 2.903E+00 | 2.924E+00 | 2.974E+00 | 3.023E+00 | 3.124E+00 | 3.147E+00 | 3.132E+00 | 3.110E+00 | 3.092E+00 | 3.086E+00 | 3.062E+00 | 3.038E+00 |
| pu239 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 | 1.809E+02 |
| pu240 | 1.063E+02 | 1.063E+02 | 1.063E+02 | 1.063E+02 | 1.063E+02 | 1.063E+02 | 1.064E+02 | 1.065E+02 | 1.065E+02 | 1.066E+02 | 1.067E+02 | 1.067E+02 | 1.068E+02 | 1.068E+02 |
| pu241 | 6.272E+01 | 6.270

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cm241 | 5.859E-10 | 5.616E-10 | 5.107E-10 | 3.528E-10 | 1.253E-10 | 3.451E-11 | 1.576E-13 | 7.043E-17 | 3.147E-20 | 1.376E-23 | 4.389E-26 | 6.150E-27 | 2.748E-30 | 1.228E-33 |
| cm242 | 3.202E-01 | 3.175E-01 | 3.115E-01 | 2.891E-01 | 2.348E-01 | 1.811E-01 | 6.131E-02 | 1.308E-02 | 2.873E-03 | 7.094E-04 | 3.129E-04 | 2.533E-04 | 1.563E-04 | 1.353E-04 |
| cm243 | 2.603E-02 | 2.603E-02 | 2.602E-02 | 2.599E-02 | 2.591E-02 | 2.581E-02 | 2.538E-02 | 2.478E-02 | 1.420E-02 | 2.363E-02 | 2.321E-02 | 2.307E-02 | 2.253E-02 | 2.200E-02 |
| cm244 | 2.591E+00 | 2.591E+00 | 2.589E+00 | 2.585E+00 | 2.571E+00 | 2.555E+00 | 2.488E+00 | 2.394E+00 | 2.304E+00 | 2.218E+00 | 2.155E+00 | 2.135E+00 | 2.054E+00 | 1.977E+00 |
| cm245 | 2.590E-01 | 2.590E-01 | 2.590E-01 | 2.590E-01 | 2.590E-01 | 2.590E-01 | 2.590E-01 | 2.589E-01 | 2.589E-01 | 2.589E-01 | 2.589E-01 | 2.589E-01 | 2.589E-01 | 2.588E-01 |
| cm246 | 2.052E-02 | 2.052E-02 | 2.052E-02 | 2.052E-02 | 2.052E-02 | 2.052E-02 | 2.052E-02 | 2.051E-02 | 2.051E-02 | 2.051E-02 | 2.051E-02 | 2.050E-02 | 2.050E-02 | 2.050E-02 |
| cm247 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 | 3.383E-04 |
| cm248 | 2.449E-05 | 2.449E-05 | 2.449E-05 | 2.449E-05 | 2.449E-05 | 2.449E-05 | 2.449E-05 | 2.450E-05 | 2.450E-05 | 2.450E-05 | 2.451E-05 | 2.451E-05 | 2.451E-05 | 2.451E-05 |
| cm250 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.310E-12 | 3.309E-12 | 3.309E-12 | 3.309E-12 | 3.309E-12 | 3.309E-12 |
| bk247 | 1.601E-14 | 1.601E-14 | 1.601E-14 | 1.601E-14 | 1.601E-14 | 1.601E-14 | 1.600E-14 | 1.600E-14 | 1.599E-14 | 1.598E-14 | 1.597E-14 | 1.597E-14 | 1.596E-14 | 1.596E-14 |
| bk248 | 6.537E-13 | 6.534E-13 | 6.528E-13 | 6.504E-13 | 6.437E-13 | 6.355E-13 | 6.022E-13 | 5.575E-13 | 5.162E-13 | 4.779E-13 | 4.512E-13 | 4.424E-13 | 4.096E-13 | 3.793E-13 |
| bk249 | 2.384E-07 | 2.373E-07 | 2.350E-07 | 2.263E-07 | 2.035E-07 | 1.783E-07 | 1.026E-07 | 4.655E-08 | 2.111E-08 | 9.555E-09 | 5.301E-09 | 4.334E-09 | 1.966E-09 | 8.916E-10 |
| bk250 | 1.192E-16 | 1.186E-16 | 1.173E-16 | 1.122E-16 | 9.921E-17 | 8.510E-17 | 4.483E-17 | 1.791E-17 | 7.163E-18 | 2.861E-18 | 1.450E-18 | 1.150E-18 | 4.663E-19 | 1.933E-19 |
| cf248 | 4.515E-13 | 4.497E-13 | 4.455E-13 | 4.296E-13 | 3.880E-13 | 3.418E-13 | 2.012E-13 | 9.421E-14 | 4.412E-14 | 2.062E-14 | 1.171E-14 | 9.656E-15 | 4.522E-15 | 2.118E-15 |
| cf249 | 2.321E-07 | 2.332E-07 | 2.355E-07 | 2.442E-07 | 2.669E-07 | 2.920E-07 | 3.672E-07 | 4.225E-07 | 4.471E-07 | 4.578E-07 | 4.613E-07 | 4.621E-07 | 4.635E-07 | 4.637E-07 |
| cf250 | 1.276E-07 | 1.276E-07 | 1.275E-07 | 1.272E-07 | 1.263E-07 | 1.252E-07 | 1.206E-07 | 1.144E-07 | 1.085E-07 | 1.029E-07 | 9.891E-08 | 9.759E-08 | 9.255E-08 | 8.778E-08 |
| cf251 | 6.472E-08 | 6.472E-08 | 6.472E-08 | 6.472E-08 | 6.471E-08 | 6.470E-08 | 6.467E-08 | 6.462E-08 | 6.457E-08 | 6.452E-08 | 6.448E-08 | 6.447E-08 | 6.442E-08 | 6.437E-08 |
| cf252 | 2.356E-08 | 2.352E-08 | 2.345E-08 | 2.315E-08 | 2.235E-08 | 2.140E-08 | 1.782E-08 | 1.371E-08 | 1.055E-08 | 8.116E-09 | 6.677E-09 | 6.246E-09 | 4.807E-09 | 3.699E-09 |
| cf253 | 3.559E-15 | 3.293E-15 | 2.764E-15 | 1.399E-15 | 2.077E-16 | 1.934E-17 | 9.469E-22 | 6.411E-28 | 4.340E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 1.030E-13 | 1.007E-13 | 9.560E-14 | 7.823E-14 | 4.462E-14 | 2.218E-14 | 1.195E-15 | 1.824E-17 | 2.786E-19 | 4.205E-21 | 1.864E-22 | 6.422E-23 | 9.806E-25 | 1.497E-26 |
| es252 | 6.303E-17 | 6.284E-17 | 6.243E-17 | 6.084E-17 | 5.661E-17 | 5.176E-17 | 3.558E-17 | 2.081E-17 | 1.217E-17 | 7.108E-18 | 4.766E-18 | 4.157E-18 | 2.431E-18 | 1.422E-18 |
| es253 | 7.282E-14 | 6.831E-14 | 5.914E-14 | 3.369E-14 | 6.859E-15 | 9.230E-16 | 1.832E-19 | 8.120E-25 | 3.482E-30 | 1.444E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 2.493E-13 | 2.481E-13 | 2.453E-13 | 2.347E-13 | 2.075E-13 | 1.780E-13 | 9.376E-14 | 3.745E-14 | 1.496E-14 | 5.961E-15 | 3.008E-15 | 2.381E-15 | 9.511E-16 | 3.799E-16 |
| es255 | 6.106E-16 | 5.897E-16 | 5.452E-16 | 4.020E-16 | 1.712E-16 | 5.919E-17 | 6.974E-19 | 1.210E-21 | 2.099E-24 | 3.579E-27 | 3.137E-29 | 6.209E-30 | 1.077E-32 | 1.869E-35 |
| total | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 |

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5 more years for cooling used fuel material actinides page 14

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element concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 3.660E-02 | 3.666E-02 | 3.679E-02 | 3.728E-02 | 3.850E-02 | 3.980E-02 | 4.351E-02 | 4.681E-02 | 4.949E-02 | 5.206E-02 | 5.395E-02 | 5.460E-02 | 5.714E-02 | 5.969E-02 |
| li | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 | 4.260E-16 |
| tl | 5.000E-14 | 5.021E-14 | 5.032E-14 | 5.237E-14 | 6.012E-14 | 6.894E-14 | 1.088E-13 | 1.698E-13 | 2.294E-13 | 2.841E-13 | 3.206E-13 | 3.324E-13 | 3.727E-13 | 4.064E-13 |
| pb | 1.301E-08 | 1.310E-08 | 1.332E-08 | 1.416E-08 | 1.666E-08 | 2.022E-08 | 4.066E-08 | 8.676E-08 | 1.530E-07 | 2.385E-07 | 3.133E-07 | 3.409E-07 | 4.579E-07 | 5.872E-07 |
| bi | 4.574E-12 | 4.588E-12 | 4.600E-12 | 4.738E-12 | 5.237E-12 | 5.811E-12 | 8.381E-12 | 1.228E-11 | 1.610E-11 | 1.966E-11 | 2.207E-11 | 2.286E-11 | 2.561E-11 | 2.800E-11 |
| po | 1.174E-14 | 1.176E-14 | 1.180E-14 | 1.196E-14 | 1.234E-14 | 1.265E-14 | 1.323E-14 | 1.343E-14 | 1.355E-14 | 1.379E-14 | 1.407E-14 | 1.419E-14 | 1.482E-14 | 1.569E-14 |
| rn | 4.479E-14 | 4.480E-14 | 4.503E-14 | 4.691E-14 | 5.384E-14 | 6.174E-14 | 9.742E-14 | 1.520E-13 | 2.054E-13 | 2.544E-13 | 2.872E-13 | 2.978E-13 | 3.340E-13 | 3.645E-13 |
| fr | 6.903E-18 | 6.905E-18 | 6.905E-18 | 6.908E-18 | 6.932E-18 | 6.969E-18 | 7.131E-18 | 7.362E-18 | 7.600E-18 | 7.844E-18 | 8.028E-18 | 8.086E-18 | 8.347E-18 | 8.607E-18 |
| ra | 2.791E-10 | 2.791E-10 | 2.807E-10 | 2.921E-10 | 3.337E-10 | 3.814E-10 | 5.977E-10 | 9.311E-10 | 1.263E-09 | 1.575E-09 | 1.790E-09 | 1.861E-09 | 2.112E-09 | 2.337E-09 |
| ac | 1.021E-11 | 1.025E-11 | 1.034E-11 | 1.068E-11 | 1.164E-11 | 1.284E-11 | 1.786E-11 | 2.508E-11 | 3.231E-11 | 3.960E-11 | 4.503E-11 | 4.688E-11 | 5.420E-11 | 6.153E-11 |
| th | 4.864E-06 | 4.867E-06 | 4.875E-06 | 4.905E-06 | 4.991E-06 | 5.100E-06 | 5.578E-06 | 6.323E-06 | 7.135E-06 | 8.012E-06 | 8.704E-06 | 8.948E-06 | 9.943E-06 | 1.100E-05 |
| pa | 4.558E-07 | 4.558E-07 | 4.560E-07 | 4.566E-07 | 4.584E-07 | 4.605E-07 | 4.694E-07 | 4.822E-07 | 4.952E-07 | 5.083E-07 | 5.180E-07 | 5.215E-07 | 5.349E-07 | 5.484E-07 |
| u | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 | 1.401E+04 |
| np | 2.813E+00 | 2.813E+00 | 2.813E+00 | 2.813E+00 | 2.814E+00 | 2.816E+00 | 2.824E+00 | 2.839E+00 | 2.858E+00 | 2.881E+00 | 2.901E+00 | 2.909E+00 | 2.940E+00 | 2.974E+00 |
| pu | 3.749E+02 | 3.749E+02 | 3.749E+02 | 3.748E+02 | 3.744E+02 | 3.740E+02 | 3.721E+02 | 3.694E+02 | 3.667E+02 | 3.642E+02 | 3.624E+02 | 3.618E+02 | 3.595E+02 | 3.574E+02 |
| am | 1.100E+01 | 1.102E+01 | 1.106E+01 | 1.120E+01 | 1.161E+01 | 1.211E+01 | 1.415E+01 | 1.695E+01 | 1.962E+01 | 2.216E+01 | 2.396E+01 | 2.456E+01 | 2.685E+01 | 2.903E+01 |
| cm | 3.217E+00 | 3.214E+00 | 3.207E+00 | 3.180E+00 | 3.112E+00 | 3.042E+00 | 2.854E+00 | 2.712E+00 | 2.611E+00 | 2.522E+00 | 2.459E+00 | 2.438E+00 | 2.357E+00 | 2.279E+00 |
| bk | 2.384E-07 | 2.373E-07 | 2.350E-07 | 2.263E-07 | 2.035E-07 | 1.783E-07 | 1.026E-07 | 4.655E-08 | 2.111E-08 | 9.556E-09 | 5.302E-09 | 4.334E-09 | 1.966E-09 | 8.920E-10 |
| cf | 4.481E-07 | 4.490E-07 | 4.511E-07 | 4.592E-07 | 4.803E-07 | 5.033E-07 | 5.703E-07 | 6.152E-07 | 6.307E-07 | 6.333E-07 | 6.314E-07 | 6.304E-07 | 6.253E-07 | 6.195E-07 |
| es | 3.228E-13 | 3.170E-13 | 3.050E-13 | 2.689E-13 | 2.146E-13 | 1.790E-13 | 9.380E-14 | 3.747E-14 | 1.497E-14 | 5.968E-15 | 3.013E-15 | 2.385E-15 | 9.536E-16 | 3.813E-16 |
| totals | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 | 1.440E+04 |

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5 more years for cooling used fuel material actinides page 15

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg206 | 1.156E-18 | 1.156E-18 | 1.156E-18 | 1.155E-18 | 1.152E-18 | 1.148E-18 | 1.135E-18 | 1.125E-18 | 1.128E-18 | 1.145E-18 | 1.170E-18 | 1.181E-18 | 1.238E-18 | 1.321E-18 |
| tl206 | 8.155E-17 | 8.158E-17 | 8.154E-17 | 8.143E-17 | 8.121E-17 | 8.099E-17 | 8.007E-17 | 7.937E-17 | 7.954E-17 | 8.078E-17 | 8.253E-17 | 8.331E-17 | 8.734E-17 | 9.315E-17 |
| tl207 | 7.003E-10 | 7.002E-10 | 7.011E-10 | 7.144E-10 | 7.780E-10 | 8.642E-10 | 1.290E-09 | 1.811E-09 | 2.335E-09 | 2.861E-09 | 3.255E-09 | 3.323E-09 | 3.917E-09 | 4.448E-09 |
| tl208 | 1.481E-05 | 1.487E-05 | 1.490E-05 | 1.551E-05 | 1.781E-05 | 2.042E-05 | 3.223E-05 | 5.028E-05 | 6.794E-05 | 8.415E-05 | 9.496E-05 | 9.847E-05 | 1.104E-04 | 1.204E-04 |
| tl209 | 2.536E-11 | 2.537E-11 | 2.536E-11 | 2.534E-11 | 2.533E-11 | 2.535E-11 | 2.547E-11 | 2.564E-11 | 2.583E-11 | 2.603E-11 | 2.620E-11 | 2.623E-11 | 2.650E-11 | 2.677E-11 |
| tl210 | 4.241E-15 | 4.245E-15 | 4.259E-15 | 4.361E-15 | 4.723E-15 | 5.152E-15 | 7.215E-15 | 1.100E-14 | 1.586E-14 | 2.197E-14 | 2.737E-14 | 2.939E-14 | 3.829E-14 | 4.877E-14 |
| pb209 | 1.153E-09 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.193E-09 | 1.205E-09 | 1.217E-09 |
| pb210 | 6.086E-11 | 6.085E-11 | 6.084E-11 | 6.078E-11 | 6.062E-11 | 6.042E-11 | 5.975E-11 | 5.923E-11 | 5.936E-11 | 6.028E-11 | 6.159E-11 | 6.217E-11 | 6.518E-11 | 6.952E-11 |
| pb211 | 7.022E-10 | 7.021E-10 | 7.030E-10 | 7.164E-10 | 7.802E-10 | 8.666E-10 | 1.294E-09 | 1.816E-09 | 2.341E-09 | 2.869E-09 | 3.264E-09 | 3.333E-09 | 3.928E-09 | 4.460E-09 |
| pb212 | 4.121E-05 | 4.119E-05 | 4.147E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.349E-04 |
| pb214 | 2.019E-11 | 2.021E-11 | 2.028E-11 | 2.076E-11 | 2.249E-11 | 2.453E-11 | 3.435E-11 | 5.235E-11 | 7.553E-11 | 1.046E-10 | 1.303E-10 | 1.399E-10 | 1.823E-10 | 2.322E-10 |
| bi207 | 9.199E-19 | 9.197E-19 | 9.195E-19 | 9.185E-19 | 9.158E-19 | 9.125E-19 | 8.986E-19 | 8.791E-19 | 8.600E-19 | 8.413E-19 | 8.276E-19 | 8.230E-19 | 8.051E-19 | 7.876E-19 |
| bi210 | 6.090E-11 | 6.089E-11 | 6.080E-11 | 6.064E-11 | 6.047E-11 | 5.927E-11 | 5.930E-11 | 5.927E-11 | 5.936E-11 | 6.032E-11 | 6.162E-11 | 6.222E-11 | 6.525E-11 | 6.956E-11 |
| bi211 | 7.022E-10 | 7.021E-10 | 7.030E-10 | 7.164E-10 | 7.802E-10 | 8.666E-10 | 1.294E-09 | 1.816E-09 | 2.341E-09 | 2.869E-09 | 3.264E-09 | 3.333E-09 | 3.928E-09 | 4.460E-09 |
| bi212 | 4.121E-05 | 4.138E-05 | 4.147E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.349E-04 |
| bi213 | 1.153E-09 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.152E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.192E-09 | 1.205E-09 | 1.217E-09 |
| bi214 | 2.020E-11 | 2.021E-11 | 2.028E-11 | 2.076E-11 | 2.249E-11 | 2.453E-11 | 3.436E-11 | 5.236E-11 | 7.555E-11 | 1.046E-10 | 1.303E-10 | 1.400E-10 | 1.823E-10 | 2.322E-10 |
| po209 | 4.091E-18 | 4.091E-18 | 4.091E-18 | 4.089E-18 | 4.085E-18 | 4.081E-18 | 4.062E-18 | 4.034E-18 | 4.007E-18 | 3.980E-18 | 3.959E-18 | 3.953E-18 | 3.926E-18 | 3.899E-18 |
| po210 | 5.224E-11 | 5.233E-11 | 5.252E-11 | 5.322E-11 | 5.485E-11 | 5.614E-11 | 5.835E-11 | 5.860E-11 | 5.855E-11 | 5.906E-11 | 5.993E-11 | 6.034E-11 | 6.277E-11 | 6.635E-11 |
| po211 | 1.938E-12 | 1.938E-12 | 1.940E-12 | 1.977E-12 | 2.153E-12 | 2.392E-12 | 3.570E-12 | 5.013E-12 | 6.462E-12 | 7.919E-12 | 9.098E-12 | 9.498E-12 | 1.084E-11 | 1.221E-11 |
| po212 | 2.640E-05 | 2.651E-05 | 2.657E-05 | 2.765E-05 | 3.174E-05 | 3.640E-05 | 5.745E-05 | 8.963E-05 | 1.211E-04 | 1.500E-04 | 1.693E-04 | 1.755E-04 | 1.967E-04 | 2.146E-04 |
| po213 | 1.128E-09 | 1.128E-09 | 1.127E-09 | 1.126E-09 | 1.126E-09 | 1.127E-09 | 1.132E-09 | 1.140E-09 | 1.148E-09 | 1.157E-09 | 1.165E-09 | 1.166E-09 | 1.178E-09 | 1.190E-09 |
| po214 | 2.263E-11 | 2.250E-11 | 2.226E-11 | 2.189E-11 | 2.272E-11 | 2.456E-11 | 3.435E-11 | 5.235E-11 | 7.553E-11 | 1.046E-10 | 1.303E-10 | 1.399E-10 | 1.823E-10 | 2.322E-10 |
| po215 | 7.022E-10 | 7.021E-10 | 7.030E-10 | 7.164E-10 | 7.802E-10 | 8.666E-10 | 1.294E-09 | 1.816E-09 | 2.341E-09 | 2.869E-09 | 3.264E-09 | 3.333E-09 | 3.928E-09 | 4.460E-09 |
| po216 | 4.121E-05 | 4.121E-05 | 4.143E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.349E-04 |
| po218 | 2.020E-11 | 2.021E-11 | 2.028E-11 | 2.076E-11 | 2.249E-11 | 2.453E-11 | 3.436E-11 | 5.236E-11 | 7.555E-11 | 1.046E-10 | 1.303E-10 | 1.400E-10 | 1.823E-10 | 2.322E-10 |
| at217 | 1.153E-09 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.193E-09 | 1.205E-09 | 1.217E-09 |
| at218 | 4.039E-15 | 4.043E-15 | 4.056E-15 | 4.153E-15 | 4.498E-15 | 4.906E-15 | 6.871E-15 | 1.047E-14 | 1.511E-14 | 2.092E-14 | 2.606E-14 | 2.799E-14 | 3.646E-14 | 4.644E-14 |
| rn217 | 8.071E-14 | 8.072E-14 | 8.069E-14 | 8.062E-14 | 8.061E-14 | 8.068E-14 | 8.106E-14 | 8.158E-14 | 8.218E-14 | 8.284E-14 | 8.336E-14 | 8.348E-14 | 8.433E-14 | 8.518E-14 |
| rn218 | 2.439E-12 | 2.289E-12 | 1.982E-12 | 1.131E-12 | 2.316E-13 | 3.156E-14 | 1.372E-17 | 1.047E-17 | 1.511E-17 | 2.092E-17 | 2.606E-17 | 2.799E-17 | 3.646E-17 | 4.644E-17 |
| rn219 | 7.022E-10 | 7.021E-10 | 7.030E-10 | 7.164E-10 | 7.802E-10 | 8.666E-10 | 1.294E-09 | 1.816E-09 | 2.341E-09 | 2.869E-09 | 3.264E-09 | 3.333E-09 | 3.928E-09 | 4.460E-09 |
| rn220 | 4.121E-05 | 4.121E-05 | 4.143E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.349E-04 |
| rn222 | 2.020E-11 | 2.021E-11 | 2.028E-11 | 2.076E-11 | 2.249E-11 | 2.453E-11 | 3.436E-11 | 5.236E-11 | 7.555E-11 | 1.046E-10 | 1.303E-10 | 1.400E-10 | 1.823E-10 | 2.322E-10 |
| fr221 | 1.153E-09 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.193E-09 | 1.205E-09 | 1.217E-09 |
| fr223 | 1.017E-11 | 1.021E-11 | 1.030E-11 | 1.065E-11 | 1.161E-11 | 1.280E-11 | 1.782E-11 | 2.502E-11 | 3.225E-11 | 3.952E-11 | 4.494E-11 | 4.680E-11 | 5.410E-11 | 6.143E-11 |
| ra222 | 2.439E-12 | 2.289E-12 | 1.982E-12 | 1.131E-12 | 2.316E-13 | 3.155E-14 | 6.850E-18 | 3.620E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 7.022E-10 | 7.021E-10 | 7.030E-10 | 7.164E-10 | 7.802E-10 | 8.666E-10 | 1.294E-09 | 1.816E-09 | 2.341E-09 | 2.869E-09 | 3.264E-09 | 3.333E-09 | 3.928E-09 | 4.460E-09 |
| ra224 | 4.121E-05 | 4.121E-05 | 4.143E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.349E-04 |
| ra225 | 1.152E-09 | 1.152E-09 | 1.151E-09 | 1.151E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.193E-09 | 1.205E-09 | 1.217E-09 |
| ra226 | 2.020E-11 | 2.026E-11 | 2.039E-11 | 2.093E-11 | 2.249E-11 | 2.453E-11 | 3.436E-11 | 5.236E-11 | 7.555E-11 | 1.046E-10 | 1.303E-10 | 1.400E-10 | 1.823E-10 | 2.322E-10 |
| ra228 | 1.525E-13 | 1.526E-13 | 1.530E-13 | 1.542E-13 | 1.577E-13 | 1.620E-13 | 1.796E-13 | 2.038E-13 | 2.270E-13 | 2.493E-13 | 2.653E-13 | 2.707E-13 | 2.914E-13 | 3.115E-13 |
| ac225 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.153E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.193E-09 | 1.205E-09 | 1.217E-09 |
| ac226 | 4.501E-17 | 4.157E-17 | 3.474E-17 | 1.731E-17 | 2.457E-18 | 2.163E-19 | 8.383E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 7.373E-10 | 7.401E-10 | 7.465E-10 | 7.714E-10 | 8.411E-10 | 9.279E-10 | 1.291E-09 | 1.813E-09 | 2.337E-09 | 2.864E-09 | 3.257E-09 | 3.391E-09 | 3.920E-09 | 4.451E-09 |
| ac228 | 1.525E-13 | 1.526E-13 | 1.530E-13 | 1.542E-13 | 1.577E-13 | 1.620E-13 | 1.796E-13 | 2.038E-13 | 2.270E-13 | 2.493E-13 | 2.653E-13 | 2.707E-13 | 2.914E-13 | 3.115E-13 |
| th226 | 2.439E-12 | 2.289E-12 | 1.982E-12 | 1.131E-12 | 2.316E-13 | 3.155E-14 | 6.849E-18 | 3.620E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 6.896E-10 | 6.924E-10 | 6.987E-10 | 7.231E-10 | 7.917E-10 | 8.773E-10 | 1.276E-09 | 1.791E-09 | 2.309E-09 | 2.830E-09 | 3.219E-09 | 3.308E-09 | 3.874E-09 | 4.399E-09 |
| th228 | 4.109E-05 | 4.131E-05 | 4.180E-05 | 4.374E-05 | 4.932E-05 | 5.657E-05 | 8.946E-05 | 1.396E-04 | 1.885E-04 | 2.334E-04 | 2.633E-04 | 2.727E-04 | 3.061E-04 | 3.338E-04 |
| th229 | 1.151E-09 | 1.151E-09 | 1.151E-09 | 1.151E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.194E-09 | 1.205E-09 | 1.217E-09 |
| th230 | 2.559E-08 | 2.564E-08 | 2.575E-08 | 2.619E-08 | 2.744E-08 | 2.904E-08 | 3.610E-08 | 4.739E-08 | 6.008E-08 | 7.420E-08 | 8.559E-08 | 8.966E-08 | 1.065E-07 | 1.247E-07 |
| th231 | 2.735E-05 | 2.735E-05 | 2.735E-05 | 2.736E-05 | 2.736E-05 | 2.736E-05 | 2.737E-05 | 2.738E-05 | 2.739E-05 | 2.740E-05 | 2.741E-05 | 2.741E-05 | 2.742E-05 | 2.743E-05 |
| th232 | 3.692E-13 | 3.693E-13 | 3.695E-13 | 3.702E-13 | 3.722E-13 | 3.747E-13 | 3.852E-13 | 4.002E-13 | 4.152E-13 | 4.304E-13 | 4.416E-13 | 4.455E-13 | 4.606E-13 | 4.758E-13 |

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5 more years for cooling used fuel material actinides page 16

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| th234 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.708E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.707E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 |
| pa230 | 1.308E-12 | 1.208E-12 | 1.009E-12 | 5.027E-13 | 7.138E-14 | 6.284E-15 | 2.435E-19 | 1.180E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 1.704E-08 | 1.704E-08 | 1.705E-08 | 1.708E-08 | 1.716E-08 | 1.726E-08 | 1.767E-08 | 1.825E-08 | 1.883E-08 | 1.941E-08 | 1.984E-08 | 1.999E-08 | 2.058E-08 | 2.116E-08 |
| pa232 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 | 1.007E-10 |
| pa233 | 1.979E-03 | 1.979E-03 | 1.980E-03 | 1.980E-03 | 1.980E-03 | 1.981E-03 | 1.987E-03 | 1.998E-03 | 2.012E-03 | 2.028E-03 | 2.040E-03 | 2.045E-03 | 2.069E-03 | 2.094E-03 |
| pa234m | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.708E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.707E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 |
| pa234 | 7.528E-06 | 7.524E-06 | 7.528E-06 | 7.528E-06 | 7.528E-06 | 7.528E-06 | 7.533E-06 | 7.528E-06 | 7.528E-06 | 7.528E-06 | 7.531E-06 | 7.528E-06 | 7.528E-06 | 7.528E-06 |
| u230 | 2.438E-12 | 2.287E-12 | 1.980E-12 | 1.129E-12 | 2.314E-13 | 3.152E-14 | 6.842E-18 | 3.570E-23 | 1.863E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 1.509E-04 | 1.514E-04 | 1.523E-04 | 1.561E-04 | 1.664E-04 | 1.788E-04 | 2.251E-04 | 2.782E-04 | 3.188E-04 | 3.498E-04 | 3.677E-04 | 3.730E-04 | 3.903E-04 | 4.028E-04 |
| u233 | 6.697E-08 | 6.702E-08 | 6.713E-08 | 6.754E-08 | 6.870E-08 | 7.014E-08 | 7.617E-08 | 8.576E-08 | 9.541E-08 | 1.052E-07 | 1.117E-07 | 1.140E-07 | 1.239E-07 | 1.339E-07 |
| u234 | 9.961E-06 | 9.969E-04 | 9.986E-04 | 1.005E-03 | 1.025E-03 | 1.049E-03 | 1.153E-03 | 1.305E-03 | 1.457E-03 | 1.608E-03 | 1.720E-03 | 1.758E-03 | 1.906E-03 | 2.054E-03 |
| u235 | 2.735E-05 | 2.735E-05 | 2.735E-05 | 2.735E-05 | 2.736E-05 | 2.736E-05 | 2.737E-05 | 2.738E-05 | 2.739E-05 | 2.740E-05 | 2.741E-05 | 2.741E-05 | 2.742E-05 | 2.743E-05 |
| u236 | 3.034E-04 | 3.034E-04 | 3.034E-04 | 3.035E-04 | 3.035E-04 | 3.037E-04 | 3.042E-04 | 3.049E-04 | 3.056E-04 | 3.063E-04 | 3.068E-04 | 3.070E-04 | 3.077E-04 | 3.085E-04 |
| u237 | 1.598E-01 | 1.597E-01 | 1.596E-01 | 1.591E-01 | 1.582E-01 | 1.571E-01 | 1.446E-01 | 1.377E-01 | 1.312E-01 | 1.265E-01 | 1.230E-01 | 1.218E-01 | 1.191E-01 | 1.184E-01 |
| u238 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 | 4.705E-03 |
| u240 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 | 3.528E-08 |
| np235 | 5.096E-05 | 5.079E-05 | 5.039E-05 | 4.887E-05 | 4.485E-05 | 4.031E-05 | 2.580E-05 | 1.363E-05 | 7.195E-06 | 3.792E-06 | 2.356E-06 | 2.002E-06 | 1.057E-06 | 5.583E-07 |
| np236 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 | 5.034E-08 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pu243 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 |
| pu244 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 | 3.532E-08 |
| pu246 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 |
| am241 | 1.690E+01 | 1.696E+01 | 1.709E+01 | 1.758E+01 | 1.897E+01 | 2.069E+01 | 2.770E+01 | 3.731E+01 | 4.646E+01 | 5.517E+01 | 6.137E+01 | 6.344E+01 | 7.129E+01 | 7.876E+01 |
| am242m | 5.399E-01 | 5.399E-01 | 5.399E-01 | 5.397E-01 | 5.394E-01 | 5.390E-01 | 5.371E-01 | 5.345E-01 | 5.319E-01 | 5.292E-01 | 5.273E-01 | 5.266E-01 | 5.241E-01 | 5.215E-01 |
| am242 | 5.375E-01 | 5.374E-01 | 5.374E-01 | 5.373E-01 | 5.369E-01 | 5.365E-01 | 5.346E-01 | 5.320E-01 | 5.294E-01 | 5.268E-01 | 5.249E-01 | 5.242E-01 | 5.217E-01 | 5.191E-01 |
| am243 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 | 1.203E+00 |
| am244 | 1.048E-10 | 1.048E-10 | 1.047E-10 | 1.043E-10 | 1.032E-10 | 1.019E-10 | 9.657E-11 | 8.941E-11 | 8.279E-11 | 7.664E-11 | 7.236E-11 | 7.095E-11 | 6.570E-11 | 6.083E-11 |
| am245 | 5.668E-09 | 5.643E-09 | 5.589E-09 | 5.381E-09 | 4.839E-09 | 4.240E-09 | 2.440E-09 | 1.107E-09 | 5.020E-10 | 2.272E-10 | 1.261E-10 | 1.031E-10 | 4.674E-11 | 2.120E-11 |
| am245m | 1.027E-13 | 1.028E-13 | 1.028E-13 | 1.028E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 | 1.027E-13 |
| cm240 | 9.373E-09 | 8.904E-09 | 7.933E-09 | 5.062E-09 | 1.439E-09 | 3.005E-10 | 4.313E-13 | 3.675E-17 | 3.132E-21 | 2.601E-25 | 2.413E-28 | 2.216E-29 | 0.000E+00 | 0.000E+00 |
| cm241 | 9.682E-06 | 9.281E-06 | 8.439E-06 | 5.830E-06 | 2.070E-06 | 5.703E-07 | 2.605E-09 | 1.164E-12 | 5.200E-16 | 2.275E-19 | 7.253E-22 | 1.016E-22 | 4.541E-26 | 2.029E-29 |
| cm242 | 1.061E+03 | 1.052E+03 | 1.032E+03 | 9.579E+02 | 7.777E+02 | 6.001E+02 | 2.031E+02 | 4.334E+01 | 9.519E+00 | 2.350E+00 | 1.036E+00 | 8.393E-01 | 5.179E-01 | 4.482E-01 |
| cm243 | 1.317E+00 | 1.317E+00 | 1.316E+00 | 1.315E+00 | 1.310E+00 | 1.305E+00 | 1.284E+00 | 1.254E+00 | 1.224E+00 | 1.195E+00 | 1.174E+00 | 1.167E+00 | 1.140E+00 | 1.113E+00 |
| cm244 | 2.097E+02 | 2.097E+02 | 2.096E+02 | 2.092E+02 | 2.081E+02 | 2.068E+02 | 2.013E+02 | 1.938E+02 | 1.865E+02 | 1.795E+02 | 1.745E+02 | 1.728E+02 | 1.663E+02 | 1.600E+02 |
| cm245 | 4.448E-02 | 4.448E-02 | 4.448E-02 | 4.448E-02 | 4.448E-02 | 4.448E-02 | 4.448E-02 | 4.447E-02 | 4.447E-02 | 4.446E-02 | 4.446E-02 | 4.446E-02 | 4.446E-02 | 4.445E-02 |
| cm246 | 6.267E-03 | 6.267E-03 | 6.267E-03 | 6.267E-03 | 6.267E-03 | 6.267E-03 | 6.266E-03 | 6.266E-03 | 6.265E-03 | 6.264E-03 | 6.263E-03 | 6.263E-03 | 6.262E-03 | 6.261E-03 |
| cm247 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 | 3.140E-08 |
| cm248 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.015E-07 | 1.016E-07 | 1.016E-07 | 1.016E-07 | 1.016E-07 |
| cm249 | 3.207E-13 | 2.967E-13 | 2.490E-13 | 1.260E-13 | 1.871E-14 | 1.742E-15 | 8.531E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 5.706E-13 | 5.706E-13 | 5.706E-13 | 5.706E-13 | 5.706E-13 | 5.706E-13 | 5.706E-13 | 5.705E-13 | 5.705E-13 | 5.704E-13 | 5.704E-13 | 5.704E-13 | 5.703E-13 | 5.703E-13 |
| bk247 | 1.680E-14 | 1.680E-14 | 1.680E-14 | 1.680E-14 | 1.680E-14 | 1.680E-14 | 1.679E-14 | 1.678E-14 | 1.678E-14 | 1.677E-14 | 1.676E-14 | 1.676E-14 | 1.675E-14 | 1.674E-14 |

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5 more years for cooling used fuel material actinides page 17

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk248 | 1.048E-10 | 1.048E-10 | 1.047E-10 | 1.043E-10 | 1.032E-10 | 1.019E-10 | 9.656E-11 | 8.940E-11 | 8.278E-11 | 7.663E-11 | 7.235E-11 | 7.095E-11 | 6.569E-11 | 6.082E-11 |
| bk249 | 3.908E-04 | 3.891E-04 | 3.853E-04 | 3.710E-04 | 3.336E-04 | 2.923E-04 | 1.683E-04 | 7.632E-05 | 3.461E-05 | 1.567E-05 | 8.691E-06 | 7.105E-06 | 3.223E-06 | 1.462E-06 |
| bk250 | 4.654E-10 | 4.630E-10 | 4.578E-10 | 4.381E-10 | 3.873E-10 | 3.323E-10 | 1.750E-10 | 6.994E-11 | 2.797E-11 | 1.117E-11 | 5.660E-12 | 4.490E-12 | 1.821E-12 | 7.547E-13 |
| bk251 | 6.293E-13 | 6.078E-13 | 5.620E-13 | 4.143E-13 | 1.765E-13 | 6.100E-14 | 7.188E-16 | 1.247E-18 | 2.164E-21 | 3.689E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 7.132E-10 | 7.102E-10 | 7.036E-10 | 6.785E-10 | 6.128E-10 | 5.398E-10 | 3.177E-10 | 1.488E-10 | 6.968E-11 | 3.257E-11 | 1.850E-11 | 1.525E-11 | 7.142E-12 | 3.345E-12 |
| cf249 | 9.500E-07 | 9.542E-07 | 9.636E-07 | 9.993E-07 | 1.092E-06 | 1.195E-06 | 1.503E-06 | 1.729E-06 | 1.830E-06 | 1.873E-06 | 1.888E-06 | 1.891E-06 | 1.897E-06 | 1.897E-06 |
| cf250 | 1.396E-05 | 1.396E-05 | 1.395E-05 | 1.391E-05 | 1.381E-05 | 1.369E-05 | 1.319E-05 | 1.251E-05 | 1.187E-05 | 1.125E-05 | 1.082E-05 | 1.067E-05 | 1.012E-05 | 9.601E-06 |
| cf251 | 1.027E-07 | 1.027E-07 | 1.027E-07 | 1.027E-07 | 1.027E-07 | 1.027E-07 | 1.026E-07 | 1.025E-07 | 1.025E-07 | 1.024E-07 | 1.023E-07 | 1.023E-07 | 1.022E-07 | 1.021E-07 |
| cf252 | 1.264E-05 | 1.262E-05 | 1.258E-05 | 1.242E-05 | 1.200E-05 | 1.148E-05 | 9.562E-06 | 7.359E-06 | 5.663E-06 | 4.355E-06 | 3.583E-06 | 3.352E-06 | 2.580E-06 | 1.985E-06 |
| cf253 | 1.032E-10 | 9.546E-11 | 8.012E-11 | 4.055E-11 | 6.022E-12 | 5.606E-13 | 2.745E-17 | 1.859E-23 | 1.258E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 8.755E-10 | 8.556E-10 | 8.126E-10 | 6.650E-10 | 3.793E-10 | 1.886E-10 | 1.015E-11 | 1.551E-13 | 2.368E-15 | 3.575E-17 | 1.584E-18 | 5.459E-19 | 8.336E-21 | 1.273E-22 |
| es252 | 6.927E-14 | 6.906E-14 | 6.861E-14 | 6.687E-14 | 6.222E-14 | 5.689E-14 | 3.915E-14 | 2.287E-14 | 1.338E-14 | 7.812E-15 | 5.238E-15 | 4.569E-15 | 2.672E-15 | 1.563E-15 |
| es253 | 1.837E-09 | 1.723E-09 | 1.492E-09 | 8.499E-10 | 1.730E-10 | 2.328E-11 | 4.622E-15 | 2.048E-20 | 8.784E-26 | 3.642E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 4.651E-10 | 4.628E-10 | 4.576E-10 | 4.379E-10 | 3.871E-10 | 3.321E-10 | 1.749E-10 | 6.986E-11 | 2.791E-11 | 1.112E-11 | 5.612E-12 | 4.442E-12 | 1.774E-12 | 7.087E-13 |
| es255 | 7.859E-12 | 7.590E-12 | 7.018E-12 | 5.174E-12 | 2.204E-12 | 7.618E-13 | 8.977E-15 | 1.557E-17 | 2.702E-20 | 4.607E-23 | 4.037E-25 | 7.992E-26 | 1.387E-28 | 2.406E-31 |
| total | 7.891E+03 | 7.880E+03 | 7.857E+03 | 7.768E+03 | 7.547E+03 | 7.318E+03 | 6.712E+03 | 6.262E+03 | 5.950E+03 | 5.678E+03 | 5.488E+03 | 5.425E+03 | 5.184E+03 | 4.955E+03 |

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5 more years for cooling used fuel material actinides page 18

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg | 1.156E-18 | 1.156E-18 | 1.156E-18 | 1.155E-18 | 1.152E-18 | 1.148E-18 | 1.135E-18 | 1.125E-18 | 1.128E-18 | 1.145E-18 | 1.170E-18 | 1.181E-18 | 1.238E-18 | 1.321E-18 |
| tl | 1.481E-05 | 1.487E-05 | 1.491E-05 | 1.551E-05 | 1.781E-05 | 2.042E-05 | 3.223E-05 | 5.029E-05 | 6.794E-05 | 8.415E-05 | 9.496E-05 | 9.847E-05 | 1.104E-04 | 1.204E-04 |
| pb | 4.121E-05 | 4.119E-05 | 4.147E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.350E-04 |
| bi | 4.121E-05 | 4.138E-05 | 4.147E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.350E-04 |
| po | 6.761E-05 | 6.772E-05 | 6.800E-05 | 7.081E-05 | 8.129E-05 | 9.322E-05 | 1.471E-04 | 2.295E-04 | 3.101E-04 | 3.841E-04 | 4.335E-04 | 4.495E-04 | 5.039E-04 | 5.495E-04 |
| at | 1.153E-09 | 1.153E-09 | 1.153E-09 | 1.152E-09 | 1.152E-09 | 1.153E-09 | 1.158E-09 | 1.165E-09 | 1.174E-09 | 1.183E-09 | 1.191E-09 | 1.195E-09 | 1.205E-09 | 1.217E-09 |
| rn | 4.121E-05 | 4.121E-05 | 4.143E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.350E-04 |
| fr | 1.163E-09 | 1.163E-09 | 1.163E-09 | 1.162E-09 | 1.163E-09 | 1.165E-09 | 1.176E-09 | 1.191E-09 | 1.206E-09 | 1.223E-09 | 1.236E-09 | 1.239E-09 | 1.259E-09 | 1.278E-09 |
| ra | 4.121E-05 | 4.121E-05 | 4.143E-05 | 4.316E-05 | 4.955E-05 | 5.682E-05 | 8.969E-05 | 1.399E-04 | 1.890E-04 | 2.341E-04 | 2.642E-04 | 2.740E-04 | 3.071E-04 | 3.350E-04 |
| ac | 1.890E-09 | 1.893E-09 | 1.899E-09 | 1.923E-09 | 1.993E-09 | 2.081E-09 | 2.450E-09 | 2.979E-09 | 3.511E-09 | 4.048E-09 | 4.448E-09 | 4.584E-09 | 5.126E-09 | 5.668E-09 |
| th | 4.773E-03 | 4.773E-03 | 4.774E-03 | 4.776E-03 | 4.781E-03 | 4.789E-03 | 4.825E-03 | 4.872E-03 | 4.921E-03 | 4.966E-03 | 4.997E-03 | 5.005E-03 | 5.039E-03 | 5.066E-03 |
| pa | 6.692E-03 | 6.692E-03 | 6.692E-03 | 6.692E-03 | 6.693E-03 | 6.694E-03 | 6.702E-03 | 6.711E-03 | 6.724E-03 | 6.741E-03 | 6.754E-03 | 6.758E-03 | 6.782E-03 | 6.806E-03 |
| u | 1.660E-01 | 1.659E-01 | 1.658E-01 | 1.655E-01 | 1.645E-01 | 1.632E-01 | 1.582E-01 | 1.512E-01 | 1.445E-01 | 1.382E-01 | 1.337E-01 | 1.322E-01 | 1.268E-01 | 1.209E-01 |
| np | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.208E+00 | 1.207E+00 | 1.207E+00 | 1.207E+00 | 1.207E+00 | 1.207E+00 |
| pu | 6.598E+03 | 6.597E+03 | 6.593E+03 | 6.578E+03 | 6.537E+03 | 6.486E+03 | 6.274E+03 | 5.982E+03 | 5.703E+03 | 5.436E+03 | 5.246E+03 | 5.183E+03 | 4.942E+03 | 4.711E+03 |
| am | 1.918E+01 | 1.924E+01 | 1.937E+01 | 1.987E+01 | 2.125E+01 | 2.296E+01 | 2.997E+01 | 3.958E+01 | 4.872E+01 | 5.743E+01 | 6.362E+01 | 6.569E+01 | 7.354E+01 | 8.100E+01 |
| cm | 1.272E+03 | 1.263E+03 | 1.243E+03 | 1.168E+03 | 9.872E+02 | 8.082E+02 | 4.058E+02 | 2.384E+02 | 1.973E+02 | 1.831E+02 | 1.767E+02 | 1.748E+02 | 1.680E+02 | 1.617E+02 |
| bk | 3.908E-04 | 3.891E-04 | 3.853E-04 | 3.710E-04 | 3.336E-04 | 2.923E-04 | 1.683E-04 | 7.632E-05 | 3.461E-05 | 1.567E-05 | 8.691E-06 | 7.105E-06 | 3.223E-06 | 1.462E-06 |
| cf | 2.765E-05 | 2.764E-05 | 2.760E-05 | 2.744E-05 | 2.700E-05 | 2.647E-05 | 2.436E-05 | 2.170E-05 | 1.946E-05 | 1.758E-05 | 1.639E-05 | 1.602E-05 | 1.470E-05 | 1.359E-05 |
| es | 2.310E-09 | 2.193E-09 | 1.956E-09 | 1.293E-09 | 5.624E-10 | 3.562E-10 | 1.750E-10 | 6.989E-11 | 2.792E-11 | 1.113E-11 | 5.617E-12 | 4.446E-12 | 1.777E-12 | 7.103E-13 |
| totals | 7.891E+03 | 7.880E+03 | 7.857E+03 | 7.768E+03 | 7.547E+03 | 7.318E+03 | 6.712E+03 | 6.262E+03 | 5.950E+03 | 5.678E+03 | 5.488E+03 | 5.425E+03 | 5.184E+03 | 4.955E+03 |

1

5 more years for cooling used fuel material actinides page 19

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl206 | 2.609E-19 | 2.610E-19 | 2.609E-19 | 2.605E-19 | 2.598E-19 | 2.591E-19 | 2.562E-19 | 2.539E-19 | 2.545E-19 | 2.584E-19 | 2.640E-19 | 2.665E-19 | 2.794E-19 | 2.980E-19 |
| tl207 | 2.051E-12 | 2.050E-12 | 2.053E-12 | 2.092E-12 | 2.278E-12 | 2.531E-12 | 3.798E-12 | 5.304E-12 | 6.837E-12 | 8.379E-12 | 9.531E-12 | 9.912E-12 | 1.147E-11 | 1.302E-11 |
| tl208 | 3.491E-07 | 3.506E-07 | 3.513E-07 | 3.657E-07 | 4.198E-07 | 4.814E-07 | 7.598E-07 | 1.185E-06 | 1.602E-06 | 1.984E-06 | 2.238E-06 | 2.321E-06 | 2.602E-06 | 2.838E-06 |
| tl209 | 4.247E-13 | 4.248E-13 | 4.246E-13 | 4.242E-13 | 4.242E-13 | 4.245E-13 | 4.265E-13 | 4.293E-13 | 4.324E-13 | 4.359E-13 | 4.387E-13 | 4.393E-13 | 4.438E-13 | 4.482E-13 |
| tl210 | 9.540E-17 | 9.548E-17 | 9.580E-17 | 9.808E-17 | 1.062E-16 | 1.159E-16 | 1.623E-16 | 2.473E-16 | 3.569E-16 | 4.941E-16 | 6.156E-16 | 6.612E-16 | 8.612E-16 | 1.097E-15 |
| pb209 | 1.349E-12 | 1.349E-12 | 1.349E-12 | 1.347E-12 | 1.347E-12 | 1.348E-12 | 1.355E-12 | 1.363E-12 | 1.373E-12 | 1.384E-12 | 1.393E-12 | 1.395E-12 | 1.409E-12 | 1.423E-12 |
| pb210 | 1.602E-14 | 1.601E-14 | 1.601E-14 | 1.600E-14 | 1.595E-14 | 1.590E-14 | 1.572E-14 | 1.559E-14 | 1.562E-14 | 1.587E-14 | 1.621E-14 | 1.636E-14 | 1.715E-14 | 1.830E-14 |
| pb211 | 2.136E-12 | 2.136E-12 | 2.139E-12 | 2.179E-12 | 2.373E-12 | 2.636E-12 | 3.935E-12 | 5.525E-12 | 7.121E-12 | 8.728E-12 | 9.928E-12 | 1.014E-11 | 1.195E-11 | 1.357E-11 |
| pb212 | 7.680E-08 | 7.677E-08 | 7.729E-08 | 8.045E-08 | 9.235E-08 | 1.059E-07 | 1.672E-07 | 2.608E-07 | 3.524E-07 | 4.364E-07 | 4.925E-07 | 5.107E-07 | 5.724E-07 | 6.243E-07 |
| pb214 | 6.294E-14 | 6.299E-14 | 6.321E-14 | 6.471E-14 | 7.010E-14 | 7.645E-14 | 1.071E-13 | 1.632E-13 | 2.354E-13 | 3.260E-13 | 4.061E-13 | 4.362E-13 | 5.682E-13 | 7.237E-13 |
| bi207 | 8.993E-21 | 8.992E-21 | 8.989E-21 | 8.980E-21 | 8.954E-21 | 8.921E-21 | 8.785E-21 | 8.594E-21 | 8.408E-21 | 8.224E-21 | 8.091E-21 | 8.046E-21 | 7.871E-21 | 7.700E-21 |
| bi210 | 1.405E-13 | 1.405E-13 | 1.404E-13 | 1.403E-13 | 1.399E-13 | 1.395E-13 | 1.379E-13 | 1.367E-13 | 1.370E-13 | 1.392E-13 | 1.422E-13 | 1.435E-13 | 1.505E-13 | 1.605E-13 |
| bi211 | 2.802E-11 | 2.801E-11 | 2.805E-11 | 2.858E-11 | 3.113E-11 | 3.457E-11 | 5.161E-11 | 7.246E-11 | 9.340E-11 | 1.145E-10 | 1.302E-10 | 1.330E-10 | 1.567E-10 | 1.779E-10 |
| bi212 | 6.901E-07 | 6.929E-07 | 6.945E-07 | 7.228E-07 | 8.297E-07 | 9.515E-07 | 1.502E-06 | 2.343E-06 | 3.166E-06 | 3.921E-06 | 4.424E-06 | 4.588E-06 | 5.143E-06 | 5.609E-06 |
| bi213 | 4.733E-12 | 4.734E-12 | 4.732E-12 | 4.728E-12 | 4.727E-12 | 4.731E-12 | 4.753E-12 | 4.784E-12 | 4.819E-12 | 4.858E-12 | 4.889E-12 | 4.896E-12 | 4.946E-12 | 4.995E-12 |
| bi214 | 2.559E-13 | 2.561E-13 | 2.570E-13 | 2.631E-13 | 2.850E-13 | 3.108E-13 | 4.353E-13 | 6.634E-13 | 9.572E-13 | 1.325E-12 | 1.651E-12 | 1.773E-12 | 2.310E-12 | 2.942E-12 |
| po209 | 1.202E-19 | 1.202E-19 | 1.202E-19 | 1.201E-19 | 1.199E-19 | 1.199E-19 | 1.193E-19 | 1.185E-19 | 1.177E-19 | 1.169E-19 | 1.163E-19 | 1.161E-19 | 1.153E-19 | 1.146E-19 |
| po210 | 1.674E-12 | 1.677E-12 | 1.683E-12 | 1.705E-12 | 1.758E-12 | 1.799E-12 | 1.869E-12 | 1.878E-12 | 1.876E-12 | 1.892E-12 | 1.920E-12 | 1.933E-12 | 2.011E-12 | 2.126E-12 |
| po211 | 8.722E-14 | 8.721E-14 | 8.732E-14 | 8.898E-14 | 9.690E-14 | 1.076E-13 | 1.607E-13 | 2.256E-13 | 2.908E-13 | 3.564E-13 | 4.054E-13 | 4.139E-13 | 4.879E-13 | 5.540E-13 |
| po212 | 1.401E-06 | 1.406E-06 | 1.410E-06 | 1.467E-06 | 1.684E-06 | 1.931E-06 | 3.048E-06 | 4.755E-06 | 6.425E-06 | 7.958E-06 | 8.980E-06 | 9.312E-06 | 1.044E-05 | 1.138E-05 |
| po213 | 5.704E-11 | 5.705E-11 | 5.703E-11 | 5.698E-11 | 5.697E-11 | 5.702E-11 | 5.729E-11 | 5.766E-11 | 5.808E-11 | 5.854E-11 | 5.892E-11 | 5.900E-11 | 5.960E-11 | 6.020E-11 |
| po214 | 1.050E-12 | 1.044E-12 | 1.033E-12 | 1.016E-12 | 1.055E-12 | 1.140E-12 | 1.594E-12 | 2.430E-12 | 3.506E-12 | 4.854E-12 | 6.048E-12 | 6.496E-12 | 8.461E-12 | 1.078E-11 |
| po215 | 3.133E-11 | 3.132E-11 | 3.136E-11 | 3.196E-11 | 3.480E-11 | 3.866E-11 | 5.771E-11 | 8.102E-11 | 1.044E-10 | 1.280E-10 | 1.456E-10 | 1.487E-10 | 1.752E-10 | 1.990E-10 |
| po216 | 1.686E-06 | 1.687E-06 | 1.695E-06 | 1.766E-06 | 2.028E-06 | 2.325E-06 | 3.670E-06 | 5.726E-06 | 7.736E-06 | 9.582E-06 | 1.081E-05 | 1.121E-05 | 1.257E-05 | 1.371E-05 |
| po218 | 7.316E-13 | 7.322E-13 | 7.347E-13 | 7.522E-13 | 8.148E-13 | 8.887E-13 | 1.245E-12 | 1.897E-12 | 2.737E-12 | 3.789E-12 | 4.721E-12 | 5.071E-12 | 6.605E-12 | 8.412E-12 |
| at217 | 4.917E-11 | 4.918E-11 | 4.916E-11 | 4.911E-11 | 4.911E-11 | 4.915E-11 | 4.938E-11 | 4.970E-11 | 5.006E-11 | 5.046E-11 | 5.079E-11 | 5.086E-11 | 5.137E-11 | 5.189E-11 |
| at218 | 1.644E-16 | 1.645E-16 | 1.651E-16 | 1.690E-16 | 1.831E-16 | 1.997E-16 | 2.797E-16 | 4.262E-16 | 6.150E-16 | 8.515E-16 | 1.061E-15 | 1.139E-15 | 1.484E-15 | 1.890E-15 |
| rn217 | 3.772E-15 | 3.772E-15 | 3.771E-15 | 3.768E-15 | 3.767E-15 | 3.770E-15 | 3.788E-15 | 3.813E-15 | 3.840E-15 | 3.871E-15 | 3.896E-15 | 3.901E-15 | 3.941E-15 | 3.981E-15 |
| rn218 | 1.050E-13 | 9.851E-14 | 8.531E-14 | 4.865E-14 | 9.966E-15 | 1.358E-15 | 5.905E-19 | 4.507E-19 | 6.502E-19 | 9.003E-19 | 1.122E-18 | 1.205E-18 | 1.569E-18 | 1.999E-18 |
| rn219 | 2.890E-11 | 2.890E-11 | 2.893E-11 | 2.948E-11 | 3.211E-11 | 3.566E-11 | 5.324E-11 | 7.474E-11 | 9.635E-11 | 1.181E-10 | 1.343E-10 | 1.371E-10 | 1.617E-10 | 1.835E-10 |
| rn220 | 1.564E-06 | 1.564E-06 | 1.572E-06 | 1.638E-06 | 1.880E-06 | 2.156E-06 | 3.404E-06 | 5.310E-06 | 7.174E-06 | 8.888E-06 | 1.003E-05 | 1.040E-05 | 1.166E-05 | 1.271E-05 |
| rn222 | 6.690E-13 | 6.693E-13 | 6.717E-13 | 6.878E-13 | 7.451E-13 | 8.126E-13 | 1.138E-12 | 1.734E-12 | 2.503E-12 | 3.465E-12 | 4.317E-12 | 4.637E-12 | 6.039E-12 | 7.693E-12 |
| fr221 | 4.448E-11 | 4.449E-11 | 4.447E-11 | 4.443E-11 | 4.443E-11 | 4.446E-11 | 4.467E-11 | 4.496E-11 | 4.529E-11 | 4.565E-11 | 4.594E-11 | 4.601E-11 | 4.648E-11 | 4.694E-11 |
| fr223 | 2.533E-14 | 2.543E-14 | 2.565E-14 | 2.650E-14 | 2.890E-14 | 3.188E-14 | 4.437E-14 | 6.230E-14 | 8.030E-14 | 9.841E-14 | 1.119E-13 | 1.165E-13 | 1.347E-13 | 1.529E-13 |
| ra222 | 9.651E-14 | 9.057E-14 | 7.843E-14 | 4.473E-14 | 9.163E-15 | 1.248E-15 | 2.710E-19 | 1.432E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 2.484E-11 | 2.484E-11 | 2.487E-11 | 2.535E-11 | 2.760E-11 | 3.066E-11 | 4.577E-11 | 6.425E-11 | 8.283E-11 | 1.015E-10 | 1.155E-10 | 1.179E-10 | 1.390E-10 | 1.578E-10 |
| ra224 | 1.414E-06 | 1.414E-06 | 1.421E-06 | 1.481E-06 | 1.700E-06 | 1.949E-06 | 3.077E-06 | 4.800E-06 | 6.485E-06 | 8.032E-06 | 9.063E-06 | 9.399E-06 | 1.054E-05 | 1.149E-05 |
| ra225 | 8.082E-13 | 8.082E-13 | 8.081E-13 | 8.083E-13 | 8.091E-13 | 8.099E-13 | 8.137E-13 | 8.180E-13 | 8.229E-13 | 8.305E-13 | 8.358E-13 | 8.373E-13 | 8.455E-13 | 8.540E-13 |
| ra226 | 5.830E-13 | 5.848E-13 | 5.887E-13 | 6.043E-13 | 6.492E-13 | 7.081E-13 | 9.918E-13 | 1.512E-12 | 2.181E-12 | 3.020E-12 | 3.762E-12 | 4.041E-12 | 5.263E-12 | 6.704E-12 |
| ra228 | 9.682E-18 | 9.691E-18 | 9.712E-18 | 9.791E-18 | 1.001E-17 | 1.029E-17 | 1.140E-17 | 1.294E-17 | 1.441E-17 | 1.583E-17 | 1.684E-17 | 1.719E-17 | 1.850E-17 | 1.978E-17 |
| ac225 | 4.055E-11 | 4.054E-11 | 4.053E-11 | 4.050E-11 | 4.050E-11 | 4.053E-11 | 4.072E-11 | 4.098E-11 | 4.128E-11 | 4.161E-11 | 4.188E-11 | 4.194E-11 | 4.237E-11 | 4.279E-11 |
| ac226 | 1.125E-19 | 1.039E-19 | 8.683E-20 | 4.325E-20 | 6.140E-21 | 5.405E-22 | 2.095E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 3.749E-13 | 3.764E-13 | 3.796E-13 | 3.923E-13 | 4.277E-13 | 4.719E-13 | 6.567E-13 | 9.221E-13 | 1.188E-12 | 1.456E-12 | 1.656E-12 | 1.725E-12 | 1.994E-12 | 2.264E-12 |
| ac228 | 1.178E-15 | 1.179E-15 | 1.182E-15 | 1.191E-15 | 1.218E-15 | 1.251E-15 | 1.387E-15 | 1.574E-15 | 1.753E-15 | 1.925E-15 | 2.049E-15 | 2.091E-15 | 2.251E-15 | 2.406E-15 |
| th226 | 9.321E-14 | 8.748E-14 | 7.576E-14 | 4.321E-14 | 8.850E-15 | 1.206E-15 | 2.618E-19 | 1.383E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 2.545E-11 | 2.555E-11 | 2.578E-11 | 2.668E-11 | 2.922E-11 | 3.237E-11 | 4.708E-11 | 6.610E-11 | 8.520E-11 | 1.044E-10 | 1.188E-10 | 1.221E-10 | 1.430E-10 | 1.623E-10 |
| th228 | 1.345E-06 | 1.352E-06 | 1.368E-06 | 1.432E-06 | 1.614E-06 | 1.852E-06 | 2.928E-06 | 4.569E-06 | 6.171E-06 | 7.641E-06 | 8.617E-06 | 8.927E-06 | 1.002E-05 | 1.093E-05 |
| th229 | 3.584E-11 | 3.584E-11 | 3.585E-11 | 3.586E-11 | 3.588E-11 | 3.592E-11 | 3.606E-11 | 3.630E-11 | 3.656E-11 | 3.686E-11 | 3.709E-11 | 3.717E-11 | 3.752E-11 | 3.790E-11 |
| th230 | 7.219E-10 | 7.233E-10 | 7.265E-10 | 7.390E-10 | 7.743E-10 | 8.192E-10 | 1.019E-09 | 1.337E-09 | 1.695E-09 | 2.093E-09 | 2.415E-09 | 2.530E-09 | 3.005E-09 | 3.518E-09 |
| th231 | 2.680E-08 | 2.680E-08 | 2.680E-08 | 2.680E-08 | 2.680E-08 | 2.681E-08 | 2.681E-08 | 2.683E-08 | 2.684E-08 | 2.685E-08 | 2.685E-08 | 2.686E-08 | 2.687E-08 | 2.688E-08 |
| th232 | 8.927E-15 | 8.929E-15 | 8.933E-15 | 8.951E-15 | 8.999E-15 | 9.060E-15 | 9.313E-15 | 9.676E-15 | 1.004E-14 | 1.041E-14 | 1.068E-14 | 1.077E-14 | 1.114E-14 | 1.150E-14 |
| th234 | 1.855E-06 | 1.855E-06 | 1.855E-06 | 1.855E-06 | 1.855E-06 | 1.855E-06 | 1.856E-06 | 1.855E-06 | 1.855E-06 | 1.855E-06 | 1.856E-06 | 1.855E-06 | 1.855E-06 | 1.855E-06 |

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5 more years for cooling used fuel material actinides page 20

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 5.689E-15 | 5.253E-15 | 4.391E-15 | 2.187E-15 | 3.105E-16 | 2.733E-17 | 1.059E-21 | 5.132E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 5.131E-10 | 5.132E-10 | 5.134E-10 | 5.143E-10 | 5.167E-10 | 5.197E-10 | 5.319E-10 | 5.494E-10 | 5.669E-10 | 5.845E-10 | 5.975E-10 | 6.021E-10 | 6.196E-10 | 6.371E-10 |
| pa232 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 | 6.546E-13 |
| pa233 | 4.864E-06 | 4.864E-06 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 2.921E-04 | 2.920E-04 | 2.918E-04 | 2.911E-04 | 2.892E-04 | 2.869E-04 | 2.774E-04 | 2.642E-04 | 2.517E-04 | 2.398E-04 | 2.313E-04 | 2.285E-04 | 2.176E-04 | 2.073E-04 |
| u238 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 | 1.190E-04 |
| u240 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 | 2.803E-11 |
| np235 | 4.895E-09 | 4.878E-09 | 4.840E-09 | 4.694E-09 | 4.308E-09 | 3.872E-09 | 2.478E-09 | 1.309E-09 | 6.910E-10 | 3.643E-10 | 2.263E-10 | 1.923E-10 | 1.016E-10 | 5.363E-11 |
| np236 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 | 1.170E-10 |
| np237 | 5.803E-05 | 5.803E-05 | 5.803E-05 | 5.804E-05 | 5.806E-05 | 5.809E-05 | 5.825E-05 | 5.856E-05 | 5.896E-05 | 5.944E-05 | 5.986E-05 | 6.001E-05 | 6.065E-05 | 6.136E-05 |
| np238 | 1.227E-05 | 1.227E-05 | 1.227E-05 | 1.227E-05 | 1.226E-05 | 1.225E-05 | 1.221E-05 | 1.215E-05 | 1.209E-05 | 1.203E-05 | 1.199E-05 | 1.197E-05 | 1.191E-05 | 1.185E-05 |
| np239 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.890E-03 | 2.889E-03 | 2.889E-03 | 2.889E-03 | 2.889E-03 | 2.889E-03 | 2.888E-03 |
| np240m | 2.040E-10 | 2.041E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 | 2.040E-10 |
| np240 | 4.141E-13 | 4.145E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 | 4.141E-13 |
| pu236 | 2.808E-04 | 2.805E-04 | 2.796E-04 | 2.764E-04 | 2.675E-04 | 2.569E-04 | 2.169E-04 | 1.702E-04 | 1.336E-04 | 1.048E-04 | 8.745E-05 | 8.221E-05 | 6.452E-05 | 5.063E-05 |
| pu237 | 1.196E-06 | 1.160E-06 | 1.084E-06 | 8.307E-07 | 3.947E-07 | 1.563E-07 | 3.251E-09 | 1.272E-11 | 4.978E-14 | 1.919E-16 | 3.083E-18 | 7.508E-19 | 2.938E-21 | 1.150E-23 |
| pu238 | 1.643E+00 | 1.645E+00 | 1.648E+00 | 1.660E+00 | 1.689E+00 | 1.716E+00 | 1.774E+00 | 1.787E+00 | 1.778E+00 | 1.766E+00 | 1.756E+00 | 1.752E+00 | 1.738E+00 | 1.725E+00 |
| pu239 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 | 3.489E-01 |
| pu240 | 7.516E-01 | 7.516E-01 | 7.516E-01 | 7.517E-01 | 7.518E-01 | 7.519E-01 | 7.523E-01 | 7.528E-01 | 7.534E-01 | 7.539E-01 | 7.543E-01 | 7.544E-01 | 7.549E-01 | 7.553E-01 |
| pu241 | 2.068E-01 | 2.067E-01 | 2.066E-01 | 2.061E-01 | 2.048E-01 | 2.031E-01 | 1.964E-01 | 1.871E-01 | 1.782E-01 | 1.698E-01 | 1.637E-01 | 1.617E-01 | 1.541E-01 | 1.468E-01 |
| pu242 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 | 2.586E-03 |
| pu243 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 | 3.580E-11 |
| pu244 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 | 1.022E-09 |
| pu246 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.481E-16 | 1.480E-16 | 1.480E-16 | 1.480E-16 | 1.480E-16 | 1.480E-16 | 1.480E-16 |
| am241 | 5.639E-01 | 5.658E-01 | 5.700E-01 | 5.866E-01 | 6.329E-01 | 6.901E-01 | 9.240E-01 | 1.245E+00 | 1.550E+00 | 1.841E+00 | 2.047E+00 | 2.116E+00 | 2.378E+00 | 2.627E+00 |
| am242m | 2.236E-04 | 2.236E-04 | 2.236E-04 | 2.235E-04 | 2.234E-04 | 2.232E-04 | 2.224E-04 | 2.214E-04 | 2.203E-04 | 2.192E-04 | 2.184E-04 | 2.181E-04 | 2.170E-04 | 2.160E-04 |
| am242 | 6.251E-04 | 6.251E-04 | 6.251E-04 | 6.249E-04 | 6.245E-04 | 6.240E-04 | 6.219E-04 | 6.188E-04 | 6.158E-04 | 6.128E-04 | 6.105E-04 | 6.098E-04 | 6.068E-04 | 6.038E-04 |
| am243 | 3.877E-02 | 3.877E-02 | 3.877E-02 | 3.877E-02 | 3.877E-02 | 3.876E-02 | 3.876E-02 | 3.876E-02 | 3.875E-02 | 3.875E-02 | 3.875E-02 | 3.875E-02 | 3.874E-02 | 3.874E-02 |
| am244 | 6.985E-13 | 6.982E-13 | 6.980E-13 | 6.950E-13 | 6.878E-13 | 6.790E-13 | 6.435E-13 | 5.958E-13 | 5.516E-13 | 5.106E-13 | 4.822E-13 | 4.728E-13 | 4.377E-13 | 4.053E-13 |
| am245 | 1.064E-11 | 1.059E-11 | 1.049E-11 | 1.010E-11 | 9.082E-12 | 7.958E-12 | 4.580E-12 | 2.077E-12 | 9.422E-13 | 4.264E-13 | 2.366E-13 | 1.934E-13 | 8.773E-14 | 3.979E-14 |
| am246m | 8.974E-16 | 8.985E-16 | 8.979E-16 | 8.975E-16 | 8.975E-16 | 8.974E-16 | 8.974E-16 | 8.973E-16 | 8.973E-16 | 8.972E-16 | 8.971E-16 | 8.971E-16 | 8.970E-16 | 8.970E-16 |
| cm240 | 3.555E-10 | 3.377E-10 | 3.009E-10 | 1.920E-10 | 5.457E-11 | 1.140E-11 | 1.636E-14 | 1.394E-18 | 1.188E-22 | 9.865E-27 | 9.151E-30 | 8.406E-31 | 0.000E+00 | 0.000E+00 |
| cm241 | 3.895E-08 | 3.734E-08 | 3.395E-08 | 2.346E-08 | 8.329E-09 | 2.295E-09 | 1.048E-11 | 4.683E-15 | 2.092E-18 | 9.152E-22 | 2.918E-24 | 4.089E-25 | 1.827E-28 | 8.162E-32 |
| cm242 | 3.908E+01 | 3.875E+01 | 3.802E+01 | 3.529E+01 | 2.865E+01 | 2.211E+01 | 7.483E+00 | 1.597E+00 | 3.507E-01 | 8.659E-02 | 3.819E-02 | 3.092E-02 | 1.908E-02 | 1.651E-02 |
| cm243 | 4.822E-02 | 4.821E-02 | 4.820E-02 | 4.814E-02 | 4.799E-02 | 4.780E-02 | 4.701E-02 | 4.590E-02 | 4.482E-02 | 4.377E-02 | 4.300E-02 | 4.274E-02 | 4.173E-02 | 4.075E-02 |
| cm244 | 7.336E+00 | 7.335E+00 | 7.331E+00 | 7.318E+00 | 7.280E+00 | 7.234E+00 | 7.043E+00 | 6.779E+00 | 6.524E+00 | 6.279E+00 | 6.102E+00 | 6.043E+00 | 5.816E+00 | 5.598E+00 |
| cm245 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.490E-03 | 1.489E-03 | 1.489E-03 |
| cm246 | 2.051E-04 | 2.051E-04 | 2.051E-04 | 2.051E-04 | 2.051E-04 | 2.051E-04 | 2.050E-04 | 2.050E-04 | 2.050E-04 | 2.050E-04 | 2.049E-04 | 2.049E-04 | 2.049E-04 | 2.049E-04 |
| cm247 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 | 9.965E-10 |
| cm248 | 2.844E-09 | 2.844E-09 | 2.844E-09 | 2.844E-09 | 2.844E-09 | 2.844E-09 | 2.844E-09 | 2.845E-09 | 2.845E-09 | 2.845E-09 | 2.845E-09 | 2.845E-09 | 2.846E-09 | 2.846E-09 |
| cm249 | 5.677E-16 | 5.252E-16 | 4.408E-16 | 2.231E-16 | 3.313E-17 | 3.084E-18 | 1.510E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 4.784E-13 | 4.784E-13 | 4.784E-13 | 4.784E-13 | 4.785E-13 | 4.785E-13 | 4.784E-13 | 4.784E-13 | 4.784E-13 | 4.783E-13 | 4.783E-13 | 4.783E-13 | 4.782E-13 | 4.782E-13 |
| bk247 | 5.840E-16 | 5.840E-16 | 5.840E-16 | 5.840E-16 | 5.840E-16 | 5.839E-16 | 5.837E-16 | 5.834E-16 | 5.831E-16 | 5.829E-16 | 5.826E-16 | 5.826E-16 | 5.823E-16 | 5.820E-16 |
| bk248 | 3.587E-12 | 3.586E-12 | 3.583E-12 | 3.569E-12 | 3.533E-12 | 3.487E-12 | 3.305E-12 | 3.060E-12 | 2.833E-12 | 2.623E-12 | 2.476E-12 | 2.428E-12 | 2.248E-12 | 2.082E-12 |

1

5 more years for cooling used fuel material actinides page 21

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 7.521E-08 | 7.489E-08 | 7.416E-08 | 7.140E-08 | 6.421E-08 | 5.626E-08 | 3.238E-08 | 1.469E-08 | 6.662E-09 | 3.015E-09 | 1.673E-09 | 1.368E-09 | 6.203E-10 | 2.813E-10 |
| bk250 | 3.284E-12 | 3.268E-12 | 3.231E-12 | 3.092E-12 | 2.733E-12 | 2.345E-12 | 1.236E-12 | 4.936E-13 | 1.974E-13 | 7.883E-14 | 3.994E-14 | 3.168E-14 | 1.285E-14 | 5.326E-15 |
| bk251 | 1.601E-15 | 1.546E-15 | 1.430E-15 | 1.054E-15 | 4.490E-16 | 1.552E-16 | 1.829E-18 | 3.173E-21 | 5.504E-24 | 9.384E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 2.690E-11 | 2.679E-11 | 2.654E-11 | 2.559E-11 | 2.311E-11 | 2.036E-11 | 1.198E-11 | 5.612E-12 | 2.628E-12 | 1.228E-12 | 6.979E-13 | 5.752E-13 | 2.694E-13 | 1.262E-13 |
| cf249 | 3.531E-08 | 3.546E-08 | 3.581E-08 | 3.714E-08 | 4.059E-08 | 4.441E-08 | 5.585E-08 | 6.426E-08 | 6.800E-08 | 6.962E-08 | 7.016E-08 | 7.027E-08 | 7.049E-08 | 7.052E-08 |
| cf250 | 5.066E-07 | 5.065E-07 | 5.061E-07 | 5.048E-07 | 5.013E-07 | 4.969E-07 | 4.788E-07 | 4.541E-07 | 4.307E-07 | 4.084E-07 | 3.926E-07 | 3.873E-07 | 3.674E-07 | 3.484E-07 |
| cf251 | 3.750E-09 | 3.750E-09 | 3.750E-09 | 3.750E-09 | 3.749E-09 | 3.749E-09 | 3.747E-09 | 3.744E-09 | 3.741E-09 | 3.738E-09 | 3.736E-09 | 3.735E-09 | 3.732E-09 | 3.729E-09 |
| cf252 | 9.153E-07 | 9.140E-07 | 9.111E-07 | 8.997E-07 | 8.686E-07 | 8.314E-07 | 6.924E-07 | 5.329E-07 | 4.101E-07 | 3.154E-07 | 2.595E-07 | 2.427E-07 | 1.868E-07 | 1.438E-07 |
| cf253 | 6.966E-14 | 6.444E-14 | 5.408E-14 | 2.737E-14 | 4.065E-15 | 3.785E-16 | 1.853E-20 | 1.255E-26 | 8.495E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 1.035E-09 | 1.011E-09 | 9.605E-10 | 7.860E-10 | 4.484E-10 | 2.229E-10 | 1.200E-11 | 1.833E-13 | 2.799E-15 | 4.225E-17 | 1.873E-18 | 6.452E-19 | 9.853E-21 | 1.505E-22 |
| es252 | 2.244E-15 | 2.238E-15 | 2.223E-15 | 2.167E-15 | 2.016E-15 | 1.843E-15 | 1.267E-15 | 7.411E-16 | 4.334E-16 | 2.531E-16 | 1.697E-16 | 1.480E-16 | 8.658E-17 | 5.064E-17 |
| es253 | 7.340E-11 | 6.885E-11 | 5.961E-11 | 3.396E-11 | 6.914E-12 | 9.303E-13 | 1.847E-16 | 8.184E-22 | 3.510E-27 | 1.455E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 1.812E-11 | 1.803E-11 | 1.783E-11 | 1.706E-11 | 1.508E-11 | 1.294E-11 | 6.815E-12 | 2.722E-12 | 1.087E-12 | 4.332E-13 | 2.186E-13 | 1.731E-13 | 6.913E-14 | 2.761E-14 |
| es255 | 3.264E-14 | 3.153E-14 | 2.915E-14 | 2.149E-14 | 9.155E-15 | 3.164E-15 | 3.729E-17 | 6.469E-20 | 1.122E-22 | 1.913E-25 | 1.677E-27 | 3.320E-28 | 5.759E-31 | 9.991E-34 |
| total | 5.003E+01 | 4.970E+01 | 4.897E+01 | 4.626E+01 | 3.966E+01 | 3.315E+01 | 1.862E+01 | 1.279E+01 | 1.158E+01 | 1.134E+01 | 1.130E+01 | 1.130E+01 | 1.130E+01 | 1.131E+01 |

1

5 more years for cooling used fuel material actinides page 22

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 3.491E-07 | 3.506E-07 | 3.513E-07 | 3.657E-07 | 4.198E-07 | 4.814E-07 | 7.598E-07 | 1.185E-06 | 1.602E-06 | 1.984E-06 | 2.238E-06 | 2.321E-06 | 2.602E-06 | 2.838E-06 |
| pb | 7.681E-08 | 7.678E-08 | 7.729E-08 | 8.045E-08 | 9.235E-08 | 1.059E-07 | 1.672E-07 | 2.608E-07 | 3.524E-07 | 4.364E-07 | 4.925E-07 | 5.107E-07 | 5.725E-07 | 6.243E-07 |
| bi | 6.901E-07 | 6.930E-07 | 6.945E-07 | 7.228E-07 | 8.298E-07 | 9.515E-07 | 1.502E-06 | 2.343E-06 | 3.166E-06 | 3.921E-06 | 4.425E-06 | 4.588E-06 | 5.143E-06 | 5.609E-06 |
| po | 3.087E-06 | 3.093E-06 | 3.105E-06 | 3.233E-06 | 3.712E-06 | 4.256E-06 | 6.719E-06 | 1.048E-05 | 1.416E-05 | 1.754E-05 | 1.979E-05 | 2.052E-05 | 2.301E-05 | 2.509E-05 |
| at | 4.917E-11 | 4.918E-11 | 4.916E-11 | 4.911E-11 | 4.911E-11 | 4.915E-11 | 4.938E-11 | 4.970E-11 | 5.006E-11 | 5.046E-11 | 5.079E-11 | 5.086E-11 | 5.138E-11 | 5.189E-11 |
| rn | 1.564E-06 | 1.564E-06 | 1.572E-06 | 1.638E-06 | 1.880E-06 | 2.156E-06 | 3.404E-06 | 5.310E-06 | 7.175E-06 | 8.886E-06 | 1.003E-05 | 1.040E-05 | 1.166E-05 | 1.271E-05 |
| fr | 4.451E-11 | 4.451E-11 | 4.450E-11 | 4.446E-11 | 4.446E-11 | 4.450E-11 | 4.472E-11 | 4.502E-11 | 4.537E-11 | 4.575E-11 | 4.606E-11 | 4.612E-11 | 4.661E-11 | 4.710E-11 |
| ra | 1.414E-06 | 1.414E-06 | 1.421E-06 | 1.481E-06 | 1.700E-06 | 1.949E-06 | 3.077E-06 | 4.800E-06 | 6.485E-06 | 8.032E-06 | 9.063E-06 | 9.399E-06 | 1.054E-05 | 1.149E-05 |
| ac | 4.092E-11 | 4.092E-11 | 4.091E-11 | 4.089E-11 | 4.092E-11 | 4.100E-11 | 4.138E-11 | 4.191E-11 | 4.247E-11 | 4.307E-11 | 4.354E-11 | 4.366E-11 | 4.436E-11 | 4.506E-11 |
| th | 3.228E-06 | 3.235E-06 | 3.251E-06 | 3.314E-06 | 3.497E-06 | 3.735E-06 | 4.812E-06 | 6.452E-06 | 8.055E-06 | 9.525E-06 | 1.050E-05 | 1.081E-05 | 1.191E-05 | 1.281E-05 |
| pa | 2.805E-05 | 2.805E-05 | 2.805E-05 | 2.805E-05 | 2.806E-05 | 2.808E-05 | 2.818E-05 | 2.815E-05 | 2.817E-05 | 2.821E-05 | 2.821E-05 | 2.817E-05 | 2.827E-05 | 2.833E-05 |
| u | 4.535E-04 | 4.535E-04 | 4.534E-04 | 4.530E-04 | 4.520E-04 | 4.508E-04 | 4.457E-04 | 4.387E-04 | 4.319E-04 | 4.253E-04 | 4.206E-04 | 4.191E-04 | 4.131E-04 | 4.075E-04 |
| np | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.960E-03 | 2.961E-03 | 2.961E-03 | 2.961E-03 | 2.961E-03 | 2.961E-03 |
| pu | 2.954E+00 | 2.955E+00 | 2.958E+00 | 2.970E+00 | 2.997E+00 | 3.023E+00 | 3.074E+00 | 3.078E+00 | 3.062E+00 | 3.041E+00 | 3.025E+00 | 3.020E+00 | 2.999E+00 | 2.979E+00 |
| am | 6.035E-01 | 6.054E-01 | 6.097E-01 | 6.263E-01 | 6.725E-01 | 7.297E-01 | 9.636E-01 | 1.284E+00 | 1.589E+00 | 1.880E+00 | 2.087E+00 | 2.156E+00 | 2.418E+00 | 2.667E+00 |
| cm | 4.647E+01 | 4.614E+01 | 4.540E+01 | 4.266E+01 | 3.598E+01 | 2.939E+01 | 1.457E+01 | 8.423E+00 | 6.922E+00 | 6.411E+00 | 6.185E+00 | 6.119E+00 | 5.879E+00 | 5.657E+00 |
| bk | 7.522E-08 | 7.489E-08 | 7.417E-08 | 7.141E-08 | 6.422E-08 | 5.627E-08 | 3.239E-08 | 1.469E-08 | 6.665E-09 | 3.018E-09 | 1.675E-09 | 1.370E-09 | 6.225E-10 | 2.834E-10 |
| cf | 1.462E-06 | 1.461E-06 | 1.458E-06 | 1.446E-06 | 1.415E-06 | 1.377E-06 | 1.231E-06 | 1.055E-06 | 9.125E-07 | 7.971E-07 | 7.260E-07 | 7.041E-07 | 6.284E-07 | 5.664E-07 |
| es | 9.155E-11 | 8.691E-11 | 7.747E-11 | 5.104E-11 | 2.201E-11 | 1.387E-11 | 6.816E-12 | 2.723E-12 | 1.088E-12 | 4.335E-13 | 2.188E-13 | 1.752E-13 | 6.922E-14 | 2.766E-14 |
| totals | 5.003E+01 | 4.970E+01 | 4.897E+01 | 4.626E+01 | 3.966E+01 | 3.315E+01 | 1.862E+01 | 1.279E+01 | 1.158E+01 | 1.134E+01 | 1.130E+01 | 1.130E+01 | 1.130E+01 | 1.131E+01 |

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5 more years for cooling used fuel material fission products page 23

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.084E-03 | 1.084E-03 | 1.083E-03 | 1.080E-03 | 1.072E-03 | 1.062E-03 | 1.021E-03 | 9.650E-04 | 9.122E-04 | 8.622E-04 | 8.269E-04 | 8.151E-04 | 7.705E-04 | 7.284E-04 |
| he 3 | 6.066E-05 | 6.100E-05 | 6.175E-05 | 6.466E-05 | 7.278E-05 | 8.281E-05 | 1.237E-04 | 1.795E-04 | 2.323E-04 | 2.823E-04 | 3.177E-04 | 3.294E-04 | 3.740E-04 | 4.161E-04 |
| he 4 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 | 2.300E-02 |
| cu 65 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 | 6.936E-09 |
| zn 66 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 | 2.268E-06 |
| zn 67 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 | 6.373E-06 |
| zn 68 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 | 1.251E-05 |
| ga 69 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 | 2.425E-05 |
| zn 70 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 | 5.714E-05 |
| ge 70 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 | 3.071E-07 |
| ga 71 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 | 1.058E-04 |
| ge 71 | 3.012E-17 | 2.668E-17 | 2.031E-17 | 7.027E-18 | 3.600E-19 | 8.907E-21 | 1.713E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 72 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 | 2.589E-04 |
| ge 73 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 | 5.320E-04 |
| ge 73m | 1.691E-19 | 1.662E-19 | 1.599E-19 | 1.375E-19 | 9.006E-20 | 5.319E-20 | 5.887E-21 | 2.521E-22 | 1.080E-23 | 4.583E-25 | 4.380E-26 | 1.963E-26 | 8.404E-28 | 3.599E-29 |
| as 73 | 2.351E-12 | 2.311E-12 | 2.223E-12 | 1.911E-12 | 1.252E-12 | 7.396E-13 | 8.185E-14 | 3.505E-15 | 1.501E-16 | 6.372E-18 | 6.090E-19 | 2.729E-19 | 1.168E-20 | 5.004E-22 |
| ge 74 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 | 1.260E-03 |
| as 74 | 6.280E-14 | 5.809E-14 | 4.874E-14 | 2.463E-14 | 3.642E-15 | 3.372E-16 | 1.615E-20 | 1.059E-26 | 6.943E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 74 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 | 5.650E-09 |
| as 75 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 | 2.494E-03 |
| se 75 | 1.442E-10 | 1.425E-10 | 1.389E-10 | 1.255E-10 | 9.451E-11 | 6.640E-11 | 1.518E-11 | 1.837E-12 | 2.223E-13 | 2.674E-14 | 5.541E-15 | 3.235E-15 | 3.914E-16 | 4.736E-17 |
| ge 76 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 | 5.641E-03 |
| se 76 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 | 1.246E-04 |
| se 77 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 | 1.315E-02 |
| se 78 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 | 3.789E-02 |
| kr 78 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 | 2.805E-15 |
| se 79 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 | 8.049E-02 |
| br 79 | 4.397E-05 | 4.397E-05 | 4.397E-05 | 4.398E-05 | 4.401E-05 | 4.404E-05 | 4.417E-05 | 4.436E-05 | 4.455E-05 | 4.474E-05 | 4.488E-05 | 4.493E-05 | 4.512E-05 | 4.531E-05 |
| se 80 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 | 1.855E-01 |
| kr 80 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 | 7.503E-06 |
| br 81 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 |
| kr 81 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 | 6.421E-07 |
| se 82 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 | 4.880E-01 |
| kr 82 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 | 1.419E-02 |
| kr 83 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 | 5.538E-01 |
| kr 83m | 7.066E-13 | 6.953E-13 | 6.706E-13 | 5.826E-13 | 3.929E-13 | 2.406E-13 | 3.095E-14 | 1.644E-15 | 8.737E-17 | 4.604E-18 | 5.168E-19 | 2.446E-19 | 1.300E-20 | 6.905E-22 |
| kr 83 | 1.075E-09 | 1.058E-09 | 1.020E-09 | 8.861E-10 | 5.975E-10 | 3.659E-10 | 4.708E-11 | 2.501E-12 | 1.329E-13 | 7.003E-15 | 7.859E-16 | 3.721E-16 | 1.977E-17 | 1.050E-18 |
| kr 84 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 | 1.305E+00 |
| rb 84 | 1.639E-09 | 1.571E-09 | 1.428E-09 | 9.870E-10 | 3.507E-10 | 9.669E-11 | 4.431E-13 | 1.989E-16 | 8.928E-20 | 3.924E-23 | 1.256E-25 | 1.761E-26 | 7.906E-30 | 3.549E-33 |
| sr 84 | 1.219E-07 | 1.219E-07 | 1.219E-07 | 1.219E-07 | 1.219E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 | 1.220E-07 |
| kr 85 | 2.660E-01 | 2.659E-01 | 2.657E-01 | 2.649E-01 | 2.626E-01 | 2.598E-01 | 2.

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 89 | 4.428E+00 | 4.428E+00 | 4.429E+00 | 4.431E+00 | 4.434E+00 | 4.437E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 | 4.438E+00 |
| y 89m | 3.488E-12 | 3.393E-12 | 3.190E-12 | 2.509E-12 | 1.281E-12 | 5.549E-13 | 1.679E-14 | 1.124E-16 | 7.518E-19 | 4.962E-21 | 1.189E-22 | 3.320E-23 | 2.222E-25 | 1.487E-27 |
| sr 90 | 5.176E+00 | 5.175E+00 | 5.174E+00 | 5.168E+00 | 5.151E+00 | 5.130E+00 | 5.045E+00 | 4.925E+00 | 4.808E+00 | 4.693E+00 | 4.610E+00 | 4.582E+00 | 4.473E+00 | 4.366E+00 |
| y 90 | 1.313E-03 | 1.313E-03 | 1.312E-03 | 1.311E-03 | 1.307E-03 | 1.301E-03 | 1.280E-03 | 1.249E-03 | 1.220E-03 | 1.190E-03 | 1.169E-03 | 1.162E-03 | 1.135E-03 | 1.108E-03 |
| zr 90 | 2.847E-01 | 2.854E-01 | 2.869E-01 | 2.929E-01 | 3.095E-01 | 3.302E-01 | 4.158E-01 | 5.357E-01 | 6.528E-01 | 7.675E-01 | 8.509E-01 | 8.791E-01 | 9.880E-01 | 1.094E+00 |
| y 91 | 2.699E-02 | 2.635E-02 | 2.499E-02 | 2.031E-02 | 1.176E-02 | 5.517E-03 | 2.690E-04 | 3.563E-06 | 4.720E-08 | 6.178E-10 | 2.463E-11 | 8.183E-12 | 1.084E-13 | 1.436E-15 |
| zr 91 | 6.442E+00 | 6.443E+00 | 6.444E+00 | 6.449E+00 | 6.458E+00 | 6.464E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 | 6.469E+00 |
| nb 91 | 1.474E-10 | 1.474E-10 | 1.474E-10 | 1.474E-10 | 1.474E-10 | 1.473E-10 | 1.472E-10 | 1.471E-10 | 1.469E-10 | 1.468E-10 | 1.467E-10 | 1.466E-10 | 1.465E-10 | 1.463E-10 |
| nb 91m | 1.230E-16 | 1.202E-16 | 1.142E-16 | 9.356E-17 | 5.355E-17 | 2.673E-17 | 1.465E-18 | 2.292E-20 | 3.588E-22 | 5.553E-24 | 2.507E-25 | 8.692E-26 | 1.361E-27 | 2.130E-29 |
| zr 92 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 | 7.810E+00 |
| nb 92 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 | 1.277E-08 |
| nb 92m | 1.273E-19 | 1.111E-19 | 8.169E-20 | 2.473E-20 | 8.707E-22 | 1.351E-23 | 3.697E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo 92 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 | 9.441E-14 |
| zr 93 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.618E+00 | 9.617E+00 | 9.617E+00 | 9.617E+00 |
| nb 93 | 1.527E-06 | 1.530E-06 | 1.536E-06 | 1.560E-06 | 1.629E-06 | 1.720E-06 | 2.147E-06 | 2.893E-06 | 3.790E-06 | 4.835E-06 | 5.703E-06 | 6.018E-06 | 7.333E-06 | 8.776E-06 |
| nb 93m | 8.988E-06 | 9.009E-06 | 9.057E-06 | 9.241E-06 | 9.756E-06 | 1.039E-05 | 1.301E-05 | 1.662E-05 | 2.007E-05 | 2.339E-05 | 2.577E-05 | 2.657E-05 | 2.961E-05 | 3.252E-05 |
| mo 93 | 6.471E-09 | 6.471E-09 | 6.471E-09 | 6.470E-09 | 6.470E-09 | 6.470E-09 | 6.469E-09 | 6.468E-09 | 6.467E-09 | 6.466E-09 | 6.465E-09 | 6.465E-09 | 6.464E-09 | 6.463E-09 |
| zr 94 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 | 1.102E+01 |
| nb 94 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.729E-05 | 4.728E-05 | 4.728E-05 | 4.728E-05 | 4.728E-05 | 4.728E-05 |
| mo 94 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 | 2.159E-04 |
| zr 95 | 7.162E-02 | 7.009E-02 | 6.676E-02 | 5.524E-02 | 3.250E-02 | 1.679E-02 | 1.062E-01 | 3.929E-01 | 3.929E-01 | 3.935E-10 | 7.487E-09 | 1.438E-10 | 2.765E-12 | 5.318E-14 |
| nb 95 | 8.079E-02 | 7.915E-02 | 7.559E-02 | 6.313E-02 | 3.785E-02 | 1.984E-02 | 1.277E-03 | 2.540E-05 | 4.890E-07 | 9.302E-09 | 4.752E-10 | 1.734E-10 | 3.438E-12 | 6.619E-14 |
| nb 95m | 4.622E-05 | 4.523E-05 | 4.308E-05 | 3.565E-05 | 2.098E-05 | 1.084E-05 | 6.856E-07 | 1.319E-08 | 2.536E-10 | 4.825E-12 | 2.539E-13 | 9.279E-14 | 1.785E-15 | 3.432E-17 |
| mo 95 | 1.143E+01 | 1.144E+01 | 1.144E+01 | 1.147E+01 | 1.152E+01 | 1.155E+01 | 1.158E+01 | 1.159E+01 | 1.159E+01 | 1.159E+01 | 1.159E+01 | 1.159E+01 | 1.159E+01 | 1.159E+01 |
| tc 95 | 1.056E-19 | 1.032E-19 | 9.804E-20 | 8.036E-20 | 4.605E-20 | 2.303E-20 | 1.270E-21 | 2.007E-23 | 3.172E-25 | 4.955E-27 | 2.253E-28 | 7.831E-29 | 1.238E-30 | 0.000E+00 |
| tc 95m | 1.964E-16 | 1.920E-16 | 1.824E-16 | 1.495E-16 | 8.569E-17 | 4.285E-17 | 2.363E-18 | 3.735E-20 | 5.902E-22 | 9.221E-24 | 4.192E-25 | 1.457E-25 | 2.303E-27 | 3.639E-29 |
| zr 96 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 | 1.288E+01 |
| mo 96 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 | 6.932E-01 |
| ru 96 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 | 2.601E-15 |
| mo 97 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 | 1.396E+01 |
| tc 97 | 1.538E-07 | 1.538E-07 | 1.538E-07 | 1.540E-07 | 1.544E-07 | 1.547E-07 | 1.552E-07 | 1.553E-07 | 1.553E-07 | 1.553E-07 | 1.553E-07 | 1.553E-07 | 1.553E-07 | 1.553E-07 |
| tc 97m | 1.599E-09 | 1.575E-09 | 1.522E-09 | 1.332E-09 | 9.171E-10 | 5.763E-10 | 8.262E-11 | 5.124E-12 | 3.178E-13 | 1.956E-14 | 2.464E-15 | 1.213E-15 | 7.526E-17 | 4.668E-18 |
| mo 98 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 | 1.528E+01 |
| tc 98 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 | 1.591E-04 |
| ru 98 | 2.680E-08 | 2.680E-08 | 2.680E-08 | 2.680E-08 | 2.681E-08 | 2.681E-08 | 2.683E-08 | 2.686E-08 | 2.688E-08 | 2.691E-08 | 2.693E-08 | 2.693E-08 | 2.696E-08 | 2.699E-08 |
| tc 99 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 |
| ru 99 | 6.046E-04 | 6.049E-04 | 6.054E-04 | 6.077E-04 | 6.139E-04 | 6.217E-04 | 6.543E-04 | 7.010E-04 | 7.477E-04 | 7.944E-04 | 8.292E-04 | 8.411E-04 | 8.877E-04 | 9.344E-04 |
| mo100 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 | 1.800E+01 |
| ru100 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 | 2.441E+00 |
| ru101 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 | 1.552E+01 |
| rh101 | 8.347E-09 | 8.337E-09 | 8.316E-09 | 8.233E-09 | 8.004E-09 | 7.728E-09 | 6.674E-09 | 5.410E-09 | 4.386E-09 | 3.553E-09 | 3.039E-09 | 2.881E-09 | 2.335E-09 | 1.893E-09 |
| ru102 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 | 1.804E+01 |
| rh102 | 1.295E-05 | 1.284E-05 | 1.267E-05 | 1.195E-05 | 1.015E-05 | 8.277E-06 | 3.534E-06 | 1.048E-06 | 3.138E-07 | 9.599E-08 | 4.135E-08 | 1.183E-08 | 5.619E-09 | 2.669E-09 |
| rh102m | 2.931E-05 | 2.928E-05 | 2.921E-05 | 2.895E-05 | 2.824E-05 | 2.738E-05 | 2.406E-05 | 2.000E-05 | 1.662E-05 | 1.380E-05 | 1.202E-05 | 1.147E-05 | 9.531E-06 | 7.920E-06 |
| pd102 | 1.351E-05 | 1.353E-05 | 1.357E-05 | 1.373E-05 | 1.412E-05 | 1.454E-05 | 1.558E-05 | 1.613E-05 | 1.629E-05 | 1.634E-05 | 1.636E-05 | 1.636E-05 | 1.636E-05 | 1.637E-05 |
| ru103 | 1.345E-02 | 1.298E-02 | 1.199E-02 | 8.804E-03 | 3.705E-03 | 1.262E-03 | 1.397E-05 | 2.215E-08 | 3.514E-11 | 5.477E-14 | 4.490E-16 | 8.688E-17 | 1.378E-19 | 2.186E-22 |
| rh103 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 |
| rh103m | 1.321E-05 | 1.275E-05 | 1.178E-05 | 8.648E-06 | 3.640E-06 | 1.239E-06 | 1.372E-08 | 2.176E-11 | 3.452E-14 | 5.380E-17 | 4.410E-19 | 8.533E-20 | 1.354E-22 | 2.147E-25 |
| pd103 | 1.165E-10 | 1.074E-10 | 8.938E-11 | 4.377E-11 | 5.930E-12 | 4.924E-13 | 1.494E-17 | 5.101E-24 | 1.741E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ru104 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 | 1.694E+01 |
| pd104 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 | 6.096E+00 |
| pd105 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 |

1



0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag105 | 1.832E-16 | 1.771E-16 | 1.642E-16 | 1.224E-16 | 5.378E-17 | 1.931E-17 | 2.672E-19 | 5.830E-22 | 1.272E-24 | 2.730E-27 | 2.839E-29 | 5.958E-30 | 1.300E-32 | 2.837E-35 |
| ru106 | 3.341E+00 | 3.329E+00 | 3.301E+00 | 3.195E+00 | 2.916E+00 | 2.603E+00 | 1.618E+00 | 8.192E-01 | 4.148E-01 | 2.097E-01 | 1.263E-01 | 1.062E-01 | 5.376E-02 | 2.722E-02 |
| rh106 | 3.128E-06 | 3.116E-06 | 3.090E-06 | 2.991E-06 | 2.730E-06 | 2.436E-06 | 1.515E-06 | 7.669E-07 | 3.883E-07 | 1.963E-07 | 1.182E-07 | 9.938E-08 | 5.032E-08 | 2.548E-08 |
| pd106 | 1.091E+01 | 1.092E+01 | 1.095E+01 | 1.105E+01 | 1.133E+01 | 1.165E+01 | 1.263E+01 | 1.343E+01 | 1.384E+01 | 1.404E+01 | 1.412E+01 | 1.414E+01 | 1.420E+01 | 1.422E+01 |
| cd106 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 | 4.503E-15 |
| pd107 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 | 8.898E+00 |
| ag107 | 1.996E-06 | 2.001E-06 | 2.012E-06 | 2.058E-06 | 2.185E-06 | 2.344E-06 | 3.006E-06 | 3.954E-06 | 4.903E-06 | 5.853E-06 | 6.560E-06 | 6.802E-06 | 7.750E-06 | 8.698E-06 |
| pd108 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 | 6.183E+00 |
| ag108 | 9.420E-15 | 9.420E-15 | 9.420E-15 | 9.420E-15 | 9.418E-15 | 9.415E-15 | 9.405E-15 | 9.390E-15 | 9.375E-15 | 9.360E-15 | 9.349E-15 | 9.345E-15 | 9.331E-15 | 9.316E-15 |
| ag108m | 1.047E-05 | 1.047E-05 | 1.047E-05 | 1.047E-05 | 1.047E-05 | 1.047E-05 | 1.045E-05 | 1.044E-05 | 1.042E-05 | 1.040E-05 | 1.039E-05 | 1.039E-05 | 1.037E-05 | 1.036E-05 |
| cd108 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.204E-05 | 2.205E-05 | 2.205E-05 | 2.205E-05 | 2.205E-05 |
| ag109 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 |
| ag109m | 3.191E-12 | 3.182E-12 | 3.160E-12 | 3.078E-12 | 2.860E-12 | 2.609E-12 | 1.779E-12 | 1.028E-12 | 5.941E-13 | 3.428E-13 | 2.278E-13 | 1.981E-13 | 1.145E-13 | 6.616E-14 |
| cd109 | 3.212E-06 | 3.203E-06 | 3.181E-06 | 3.099E-06 | 2.879E-06 | 2.627E-06 | 1.791E-06 | 1.035E-06 | 5.980E-07 | 3.451E-07 | 2.293E-07 | 1.994E-07 | 1.152E-07 | 6.660E-08 |
| pd110 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 | 2.039E+00 |
| ag110 | 3.384E-10 | 3.365E-10 | 3.323E-10 | 3.165E-10 | 2.763E-10 | 2.333E-10 | 1.150E-10 | 4.174E-11 | 1.516E-11 | 5.489E-12 | 2.580E-12 | 1.993E-12 | 7.239E-13 | 2.629E-13 |
| ag110m | 2.182E-02 | 2.170E-02 | 2.143E-02 | 2.042E-02 | 1.782E-02 | 1.505E-02 | 7.414E-03 | 2.692E-03 | 9.777E-04 | 3.541E-04 | 1.664E-04 | 1.286E-04 | 4.669E-05 | 1.695E-05 |
| cd110 | 2.159E+00 | 2.159E+00 | 2.159E+00 | 2.160E+00 | 2.163E+00 | 2.166E+00 | 2.173E+00 | 2.178E+00 | 2.180E+00 | 2.181E+00 | 2.181E+00 | 2.181E+00 | 2.181E+00 | 2.181E+00 |
| ag111 | 2.023E-12 | 1.680E-12 | 1.105E-12 | 2.169E-13 | 2.272E-15 | 7.790E-18 | 3.870E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd111 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 | 9.783E-01 |
| cd112 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 | 4.626E-01 |
| sn112 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 | 4.290E-11 |
| cd113 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 | 4.706E-03 |
| cd113m | 6.785E-05 | 6.783E-05 | 6.779E-05 | 6.763E-05 | 6.718E-05 | 6.663E-05 | 6.439E-05 | 6.130E-05 | 5.836E-05 | 5.556E-05 | 5.356E-05 | 5.289E-05 | 5.036E-05 | 4.794E-05 |
| in113 | 1.046E-05 | 1.048E-05 | 1.052E-05 | 1.068E-05 | 1.112E-05 | 1.167E-05 | 1.391E-05 | 1.700E-05 | 1.993E-05 | 2.273E-05 | 2.473E-05 | 2.539E-05 | 2.792E-05 | 3.034E-05 |
| in113m | 6.546E-16 | 6.468E-16 | 6.295E-16 | 5.665E-16 | 4.217E-16 | 2.921E-16 | 6.288E-17 | 6.979E-18 | 7.746E-19 | 8.546E-20 | 1.661E-20 | 9.486E-21 | 1.053E-21 | 1.169E-22 |
| sn113 | 1.090E-12 | 1.077E-12 | 1.048E-12 | 9.432E-13 | 7.022E-13 | 4.863E-13 | 1.047E-13 | 1.162E-14 | 1.290E-15 | 1.423E-16 | 2.765E-17 | 1.579E-17 | 1.753E-18 | 1.946E-19 |
| cd114 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 | 4.936E-01 |
| in114 | 8.322E-14 | 8.092E-14 | 7.598E-14 | 5.947E-14 | 2.995E-14 | 1.275E-14 | 3.589E-16 | 2.166E-18 | 1.307E-20 | 7.781E-23 | 1.727E-24 | 4.696E-25 | 2.835E-27 | 1.711E-29 |
| in114m | 5.117E-09 | 4.976E-09 | 4.672E-09 | 3.657E-09 | 1.841E-09 | 7.839E-10 | 2.207E-11 | 1.332E-13 | 8.040E-16 | 4.785E-18 | 1.062E-19 | 2.888E-20 | 1.743E-22 | 1.052E-24 |
| sn114 | 2.241E-06 | 2.241E-06 | 2.241E-06 | 2.242E-06 | 2.244E-06 | 2.245E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 | 2.246E-06 |
| cd115m | 1.349E-05 | 1.308E-05 | 1.219E-05 | 9.288E-06 | 4.334E-06 | 1.678E-06 | 3.178E-08 | 1.087E-10 | 3.719E-13 | 1.253E-15 | 1.821E-17 | 4.286E-18 | 1.466E-20 | 5.017E-23 |
| in115 | 4.548E-02 | 4.548E-02 | 4.548E-02 | 4.548E-02 | 4.548E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 |
| in115m | 6.013E-12 | 5.832E-12 | 5.434E-12 | 4.139E-12 | 1.932E-12 | 7.478E-13 | 1.416E-14 | 4.845E-17 | 1.658E-19 | 5.584E-22 | 8.117E-24 | 1.910E-24 | 6.536E-27 | 2.236E-29 |
| sn115 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 | 7.170E-03 |
| cd116 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 | 1.634E-01 |
| in116 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 | 6.088E-02 |
| sn117 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 | 1.454E-01 |
| sn117m | 1.287E-10 | 1.162E-10 | 9.237E-11 | 3.786E-11 | 3.116E-12 | 1.391E-13 | 3.155E-19 | 2.629E-27 | 2.191E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn118 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 | 1.287E-01 |
| sn119 | 1.222E-01 | 1.222E-01 | 1.223E-01 | 1.223E-01 | 1.224E-01 | 1.225E-01 | 1.228E-01 | 1.231E-01 | 1.232E-01 | 1.232E-01 | 1.232E-01 | 1.232E-01 | 1.232E-01 | 1.232E-01 |
| sn119m | 9.945E-04 | 9.898E-04 | 9.793E-04 | 9.396E-04 | 8.368E-04 | 7.243E-04 | 3.962E-04 | 1.671E-04 | 7.046E-05 | 2.964E-05 | 1.558E-05 | 1.250E-05 | 5.271E-06 | 2.223E-06 |
| sn120 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 | 1.237E-01 |
| te120 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 | 3.777E-11 |
| sn121 | 5.887E-07 | 5.886E-07 | 5.885E-07 | 5.881E-07 | 5.868E-07 | 5.853E-07 | 5.789E-07 | 5.698E-07 | 5.609E-07 | 5.521E-07 | 5.456E-07 | 5.434E-07 | 5.349E-07 | 5.266E-07 |
| sn121m | 1.080E-02 | 1.080E-02 | 1.080E-02 | 1.079E-02 | 1.077E-02 | 1.074E-02 | 1.062E-02 | 1.045E-02 | 1.029E-02 | 1.013E-02 | 1.001E-02 | 9.969E-03 | 9.813E-03 | 9.659E-03 |
| sb121 | 1.202E-01 | 1.202E-01 | 1.202E-01 | 1.203E-01 | 1.203E-01 | 1.203E-01 | 1.204E-01 | 1.206E-01 | 1.207E-01 | 1.209E-01 | 1.210E-01 | 1.211E-01 | 1.212E-01 | 1.214E-01 |
| te121 | 5.538E-10 | 5.492E-10 | 5.388E-10 | 5.003E-10 | 4.067E-10 | 3.144E-10 | 1.072E-10 | 2.295E-11 | 4.916E-12 | 1.049E-12 | 3.327E-13 | 2.246E-13 | 4.812E-14 | 1.031E-14 |
| te121m | 4.726E-09 | 4.686E-09 | 4.598E-09 | 4.271E-09 | 3.473E-09 | 2.684E-09 | 9.148E-10 | 1.960E-10 | 4.198E-11 | 8.954E-12 | 2.840E-12 | 1.918E-12 | 4.109E-13 | 8.801E-14 |
| sn122 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 | 1.640E-01 |
| te122 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 | 1.146E-02 |
| sn123 | 1.202E-03 | 1.189E-03 | 1.161E-03 | 1.057E-03 | 8.124E-04 | 5.857E-04 | 1.491E-04 | 2.104E-05 | 2.969E-06 | 4.167E-07 | 9.685E-08 | 5.881E-08 | 8.298E-09 | 1.171E-09 |

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sb123 | 1.583E-01 | 1.584E-01 | 1.584E-01 | 1.585E-01 | 1.587E-01 | 1.590E-01 | 1.594E-01 | 1.595E-01 | 1.595E-01 | 1.595E-01 | 1.595E-01 | 1.595E-01 | 1.595E-01 | 1.595E-01 |
| te123 | 1.436E-04 | 1.437E-04 | 1.439E-04 | 1.446E-04 | 1.463E-04 | 1.478E-04 | 1.505E-04 | 1.512E-04 | 1.513E-04 | 1.513E-04 | 1.513E-04 | 1.513E-04 | 1.513E-04 | 1.513E-04 |
| te123m | 7.717E-06 | 7.628E-06 | 7.431E-06 | 6.712E-06 | 5.048E-06 | 3.540E-06 | 8.036E-07 | 9.622E-08 | 1.152E-08 | 1.371E-09 | 2.820E-10 | 1.642E-10 | 1.966E-11 | 2.354E-12 |
| sn124 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 | 2.620E-01 |
| sb124 | 7.378E-05 | 7.210E-05 | 6.846E-05 | 5.597E-05 | 3.183E-05 | 1.577E-05 | 8.370E-07 | 1.252E-08 | 1.872E-10 | 2.768E-12 | 1.208E-13 | 4.139E-14 | 6.191E-16 | 9.259E-18 |
| te124 | 8.193E-03 | 8.195E-03 | 8.198E-03 | 8.211E-03 | 8.235E-03 | 8.251E-03 | 8.266E-03 | 8.267E-03 | 8.267E-03 | 8.267E-03 | 8.267E-03 | 8.267E-03 | 8.267E-03 | 8.267E-03 |
| xe124 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 | 2.967E-15 |
| sn125 | 5.770E-11 | 4.997E-11 | 3.616E-11 | 1.027E-11 | 3.031E-13 | 3.773E-15 | 4.109E-23 | 1.643E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 2.077E-02 | 2.074E-02 | 2.067E-02 | 2.043E-02 | 1.975E-02 | 1.896E-02 | 1.599E-02 | 1.236E-02 | 9.617E-03 | 7.476E-03 | 6.200E-03 | 5.818E-03 | 4.525E-03 | 3.520E-03 |
| te125 | 1.417E-01 | 1.419E-01 | 1.426E-01 | 1.451E-01 | 1.520E-01 | 1.602E-01 | 1.911E-01 | 2.269E-01 | 2.547E-01 | 2.764E-01 | 2.893E-01 | 2.932E-01 | 3.063E-01 | 3.165E-01 |
| te125m | 2.880E-03 | 2.876E-03 | 2.868E-03 | 2.837E-03 | 2.748E-03 | 2.638E-03 | 2.217E-03 | 1.725E-03 | 1.342E-03 | 1.043E-03 | 8.650E-04 | 8.114E-04 | 

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te129m | 1.799E-04 | 1.726E-04 | 1.573E-04 | 1.097E-04 | 3.990E-05 | 1.134E-05 | 5.887E-08 | 3.160E-11 | 1.697E-14 | 8.923E-18 | 3.263E-20 | 4.790E-21 | 2.572E-24 | 1.381E-27 |
| i129 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 | 4.166E+00 |
| xe129 | 8.392E-04 | 8.392E-04 | 8.392E-04 | 8.392E-04 | 8.393E-04 | 8.393E-04 | 2.394E-04 | 2.396E-04 | 2.398E-04 | 2.400E-04 | 8.401E-04 | 8.402E-04 | 8.403E-04 | 8.405E-04 |
| xe129m | 2.610E-14 | 2.232E-14 | 1.571E-14 | 4.008E-15 | 8.747E-17 | 7.481E-19 | 1.696E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te130 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 | 7.953E+00 |
| xe130 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 | 1.605E-01 |
| i131 | 1.316E-10 | 1.107E-10 | 7.505E-11 | 1.655E-11 | 2.404E-13 | 1.238E-15 | 3.369E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 | 8.708E+00 |
| xe131m | 5.386E-09 | 4.791E-09 | 3.682E-09 | 1.322E-09 | 7.509E-11 | 2.112E-12 | 6.939E-19 | 3.641E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.419E-16 | 1.230E-16 | 8.917E-17 | 2.556E-17 | 7.749E-19 | 1.008E-20 | 2.080E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 2.642E-19 | 2.342E-19 | 1.786E-19 | 6.218E-20 | 3.249E-21 | 8.208E-23 | 1.734E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe132 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 | 2.309E+01 |
| cs132 | 2.895E-17 | 2.338E-17 | 1.445E-17 | 2.222E-18 | 1.176E-20 | 1.724E-23 | 2.457E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba132 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 | 4.494E-06 |
| xe133 | 3.231E-15 | 2.480E-15 | 1.368E-15 | 1.353E-16 | 2.080E-19 | 6.540E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs133 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 | 2.082E+01 |
| ba133 | 3.169E-06 | 3.168E-06 | 3.165E-06 | 3.155E-06 | 3.127E-06 | 3.093E-06 | 2.954E-06 | 2.766E-06 | 2.589E-06 | 2.424E-06 | 2.308E-06 | 2.269E-06 | 2.125E-06 | 1.989E-06 |
| xe134 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 | 2.795E+01 |
| cs134 | 2.313E+00 | 2.309E+00 | 2.299E+00 | 2.262E+00 | 2.163E+00 | 2.045E+00 | 1.618E+00 | 1.157E+00 | 8.271E-01 | 5.909E-01 | 4.602E-01 | 4.225E-01 | 3.021E-01 | 2.160E-01 |
| ba134 | 1.680E+00 | 1.684E+00 | 1.694E+00 | 1.730E+00 | 1.830E+00 | 1.948E+00 | 2.375E+00 | 2.836E+00 | 3.166E+00 | 3.402E+00 | 3.533E+00 | 3.570E+00 | 3.691E+00 | 3.777E+00 |
| cs135 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 | 1.024E+01 |
| ba135 | 8.222E-03 | 8.222E-03 | 8.222E-03 | 8.222E-03 | 8.223E-03 | 8.223E-03 | 8.225E-03 | 8.228E-03 | 8.232E-03 | 8.235E-03 | 8.237E-03 | 8.238E-03 | 8.241E-03 | 8.244E-03 |
| xe136 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 | 4.291E+01 |
| cs136 | 5.138E-08 | 4.625E-08 | 3.649E-08 | 1.452E-08 | 1.099E-09 | 4.422E-11 | 6.494E-17 | 2.906E-25 | 1.300E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 | 6.576E-01 |
| ba136m | 1.543E-15 | 1.389E-15 | 1.096E-15 | 4.360E-16 | 3.301E-17 | 1.328E-18 | 1.951E-24 | 8.727E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.306E+01 | 2.305E+01 | 2.305E+01 | 2.302E+01 | 2.295E+01 | 2.286E+01 | 2.250E+01 | 2.199E+01 | 2.149E+01 | 2.099E+01 | 2.064E+01 | 2.052E+01 | 2.005E+01 | 1.959E+01 |

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5 more years for cooling used fuel material fission products page 27

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba137 | 1.198E+00 | 1.201E+00 | 1.207E+00 | 1.233E+00 | 1.304E+00 | 1.392E+00 | 1.757E+00 | 2.269E+00 | 2.770E+00 | 3.260E+00 | 3.617E+00 | 3.738E+00 | 4.205E+00 | 4.662E+00 |
| ba137m | 3.522E-06 | 3.522E-06 | 3.521E-06 | 3.517E-06 | 3.506E-06 | 3.493E-06 | 3.437E-06 | 3.359E-06 | 3.282E-06 | 3.207E-06 | 3.153E-06 | 3.134E-06 | 3.063E-06 | 2.993E-06 |
| la137 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 | 6.990E-06 |
| ba138 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 | 2.304E+01 |
| la138 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 | 4.013E-04 |
| ce138 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 | 1.583E-07 |
| la139 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 |
| ce139 | 2.421E-05 | 2.397E-05 | 2.343E-05 | 2.145E-05 | 1.676E-05 | 1.233E-05 | 3.413E-06 | 5.431E-07 | 8.642E-08 | 1.368E-08 | 3.477E-09 | 2.177E-09 | 3.464E-10 | 5.511E-11 |
| ba140 | 7.189E-07 | 6.449E-07 | 5.049E-07 | 1.951E-07 | 1.360E-08 | 4.939E-10 | 4.725E-16 | 1.145E-24 | 2.772E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.090E-07 | 9.774E-08 | 7.653E-08 | 2.962E-08 | 2.061E-09 | 7.486E-11 | 7.161E-17 | 1.735E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce140 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 | 2.192E+01 |
| ce141 | 4.796E-03 | 4.596E-03 | 4.175E-03 | 2.875E-03 | 1.011E-03 | 2.754E-04 | 1.199E-06 | 4.996E-10 | 2.083E-13 | 8.500E-17 | 2.574E-19 | 3.543E-20 | 1.477E-23 | 6.158E-27 |
| pr141 | 1.943E+01 | 1.943E+01 | 1.943E+01 | 1.943E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 |
| ce142 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 | 1.899E+01 |
| nd142 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 | 3.215E-01 |
| pr143 | 1.511E-06 | 1.364E-06 | 1.084E-06 | 4.434E-07 | 3.629E-08 | 1.609E-09 | 3.546E-15 | 2.836E-23 | 2.268E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd143 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 | 1.383E+01 |
| pm143 | 2.557E-14 | 2.544E-14 | 2.514E-14 | 2.402E-14 | 2.113E-14 | 1.801E-14 | 9.245E-15 | 3.559E-15 | 1.370E-15 | 5.259E-16 | 2.582E-16 | 2.024E-16 | 7.792E-17 | 2.999E-17 |
| ce144 | 2.908E+00 | 2.894E+00 | 2.862E+00 | 2.743E+00 | 2.435E+00 | 2.099E+00 | 1.129E+00 | 4.644E-01 | 1.911E-01 | 7.844E-02 | 4.047E-02 | 3.228E-02 | 1.328E-02 | 5.465E-03 |
| pr144 | 1.225E-04 | 1.219E-04 | 1.206E-04 | 1.155E-04 | 1.026E-04 | 8.841E-05 | 4.754E-05 | 1.956E-05 | 8.049E-06 | 3.304E-06 | 1.705E-06 | 1.360E-06 | 5.594E-07 | 2.302E-07 |
| pr144m | 4.873E-07 | 4.849E-07 | 4.796E-07 | 4.596E-07 | 4.080E-07 | 3.517E-07 | 1.891E-07 | 7.782E-08 | 3.202E-08 | 1.314E-08 | 6.782E-09 | 5.408E-09 | 2.225E-09 | 9.157E-10 |
| nd144 | 1.597E+01 | 1.598E+01 | 1.601E+01 | 1.613E+01 | 1.644E+01 | 1.678E+01 | 1.775E+01 | 1.841E+01 | 1.868E+01 | 1.880E+01 | 1.884E+01 | 1.886E+01 | 1.887E+01 | 1.887E+01 |
| pm144 | 7.622E-12 | 7.592E-12 | 7.527E-12 | 7.280E-12 | 6.630E-12 | 5.901E-12 | 3.626E-12 | 1.806E-12 | 8.996E-13 | 4.472E-13 | 2.661E-13 | 2.228E-13 | 1.110E-13 | 5.527E-14 |
| sm144 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 | 8.543E-13 |
| nd145 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 | 1.065E+01 |
| pm145 | 5.212E-07 | 5.211E-07 | 5.209E-07 | 5.201E-07 | 5.178E-07 | 5.149E-07 | 5.024E-07 | 4.842E-07 | 4.662E-07 | 4.485E-07 | 4.357E-07 | 4.314E-07 | 4.149E-07 | 3.990E-07 |
| sm145 | 4.713E-09 | 4.694E-09 | 4.651E-09 | 4.488E-09 | 4.061E-09 | 3.586E-09 | 2.132E-09 | 1.013E-09 | 4.814E-10 | 2.283E-10 | 1.311E-10 | 1.085E-10 | 5.154E-11 | 2.449E-11 |
| nd146 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 | 1.192E+01 |
| pm146 | 5.496E-06 | 5.492E-06 | 5.484E-06 | 5.451E-06 | 5.360E-06 | 5.249E-06 | 4.809E-06 | 4.243E-06 | 3.743E-06 | 3.302E-06 | 3.007E-06 | 2.913E-06 | 2.570E-06 | 2.267E-06 |
| sm146 | 4.766E-05 | 4.766E-05 | 4.766E-05 | 4.767E-05 | 4.770E-05 | 4.774E-05 | 4.789E-05 | 4.808E-05 | 4.825E-05 | 4.840E-05 | 4.850E-05 | 4.853E-05 | 4.865E-05 | 4.875E-05 |
| nd147 | 3.047E-08 | 2.686E-08 | 2.021E-08 | 6.697E-09 | 3.037E-10 | 6.458E-12 | 6.590E-19 | 6.485E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.496E+00 | 2.492E+00 | 2.484E+00 | 2.453E+00 | 2.367E+00 | 2.265E+00 | 1.883E+00 | 1.446E+00 | 1.111E+00 | 8.524E-01 | 7.001E-01 | 6.546E-01 | 5.027E-01 | 3.860E-01 |
| sm147 | 1.602E+00 | 1.605E+00 | 1.614E+00 | 1.645E+00 | 1.730E+00 | 1.832E+00 | 2.214E+00 | 2.651E+00 | 2.987E+00 | 3.245E+00 | 3.397E+00 | 3.443E+00 | 3.595E+00 | 3.711E+00 |
| eu147 | 8.243E-20 | 7.782E-20 | 6.838E-20 | 4.133E-20 | 1.010E-20 | 1.747E-21 | 1.141E-24 | 3.147E-29 | 8.684E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd148 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 | 6.944E+00 |
| pm148 | 4.121E-06 | 3.984E-06 | 3.695E-06 | 2.754E-06 | 1.210E-06 | 4.350E-07 | 6.010E-09 | 1.312E-11 | 2.862E-14 | 6.142E-17 | 6.386E-19 | 1.340E-19 | 2.925E-22 | 6.382E-25 |
| pm148m | 6.565E-04 | 6.349E-04 | 5.887E-04 | 4.388E-04 | 1.928E-04 | 6.923E-05 | 9.574E-07 | 2.090E-09 | 4.560E-12 | 9.786E-15 | 1.017E-16 | 2.135E-17 | 4.660E-20 | 1.017E-22 |
| sm148 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 | 2.855E+00 |
| sm149 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 | 8.042E-02 |
| eu149 | 9.864E-13 | 9.719E-13 | 9.398E-13 | 8.250E-13 | 5.728E-13 | 3.637E-13 | 5.448E-14 | 3.598E-15 | 2.376E-16 | 1.557E-17 | 2.056E-18 | 1.029E-18 | 6.792E-20 | 4.486E-21 |
| nd150 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 | 4.085E+00 |
| sm150 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 | 5.935E+00 |
| sm151 | 3.382E-01 | 3.382E-01 | 3.382E-01 | 3.380E-01 | 3.377E-01 | 3.372E-01 | 3.354E-01 | 3.329E-01 | 3.303E-01 | 3.278E-01 | 3.259E-01 | 3.253E-01 | 3.228E-01 | 3.203E-01 |
| eu151 | 2.220E-03 | 2.234E-03 | 2.266E-03 | 2.391E-03 | 2.740E-03 | 3.174E-03 | 4.982E-03 | 7.554E-03 | 1.018E-02 | 1.265E-02 | 1.516E-02 | 1.765E-02 | 2.013E-02 | 2.261E-02 |
| gd151 | 1.099E-09 | 1.087E-09 | 1.060E-09 | 9.612E-10 | 7.309E-10 | 5.197E-10 | 1.249E-10 | 1.624E-11 | 2.111E-12 | 2.729E-13 | 5.965E-14 | 3.547E-14 | 4.611E-15 | 5.993E-16 |
| sm152 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 | 2.124E+00 |
| eu152 | 4.369E-04 | 4.368E-04 | 4.365E-04 | 4.354E-04 | 4.325E-04 | 4.288E-04 | 4.137E-04 | 3.931E-04 | 3.735E-04 | 3.548E-04 | 3.415E-04 | 3.371E-04 | 3.203E-04 | 3.043E-04 |
| gd152 | 9.311E-04 | 9.311E-04 | 9.312E-04 | 9.315E-04 | 9.323E-04 | 9.334E-04 | 9.376E-04 | 9.433E-04 | 9.488E-04 | 9.540E-04 | 9.577E-04 | 9.589E-04 | 9.636E-04 | 9.681E-04 |
| eu153 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 | 2.914E+00 |
| gd153 | 3.975E-05 | 3.952E-05 | 3.902E-05 | 3.710E-05 | 3.221E-05 | 2.701E-05 | 1.295E-05 | 4.521E-06 | 1.578E-06 | 5.493E-07 | 2.507E-07 | 1.918E-07 | 6.694E-08 | 2.337E-08 |
| sm154 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 | 1.163E+00 |
| eu154 | 8.380E-01 | 8.376E-01 | 8.368E-01 | 8.335E-01 | 8.246E-01 | 8.135E-01 | 7.690E-01 | 7.095E-01 | 6.546E-01 | 6.038E-01 | 5.687E-01 | 5.571E-01 | 5.140E-01 | 4.742E-01 |

1

5 more years for cooling used fuel material fission products page 28

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gd154 | 1.247E-01 | 1.250E-01 | 1.259E-01 | 1.291E-01 | 1.380E-01 | 1.491E-01 | 1.936E-01 | 2.531E-01 | 3.080E-01 | 3.587E-01 | 3.939E-01 | 4.054E-01 | 4.486E-01 | 4.883E-01 |
| eu155 | 2.089E-01 | 2.087E-01 | 2.083E-01 | 2.069E-01 | 2.029E-01 | 1.980E-01 | 1.788E-01 | 1.546E-01 | 1.336E-01 | 1.154E-01 | 1.036E-01 | 9.978E-02 | 8.625E-02 | 7.455E-02 |
| gd155 | 2.405E-02 | 2.421E-02 | 2.459E-02 | 2.604E-02 | 3.005E-02 | 3.493E-02 | 5.409E-02 | 7.834E-02 | 9.930E-02 | 1.175E-01 | 1.293E-01 | 1.331E-01 | 1.467E-01 | 1.584E-01 |
| eu156 | 1.766E-06 | 1.612E-06 | 1.313E-06 | 5.907E-07 | 6.314E-08 | 3.903E-09 | 3.450E-14 | 2.015E-21 | 1.177E-28 | 6.570E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| gd156 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 | 2.464E+00 |
| dy156 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 | 4.804E-14 |
| gd157 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 | 4.946E-03 |
| tb157 | 1.071E-08 | 1.071E-08 | 1.071E-08 | 1.070E-08 | 1.069E-08 | 1.067E-08 | 1.060E-08 | 1.049E-08 | 1.039E-08 | 1.029E-08 | 1.022E-08 | 1.019E-08 | 1.009E-08 | 9.995E-09 |
| gd158 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.847E-01 |
| tb158 | 1.484E-06 | 1.484E-06 | 1.484E-06 | 1.483E-06 | 1.483E-06 | 1.482E-06 | 1.478E-06 | 1.472E-06 | 1.466E-06 | 1.461E-06 | 1.457E-06 | 1.455E-06 | 1.449E-06 | 1.444E-06 |
| dy158 | 1.874E-09 | 1.879E-09 | 1.891E-09 | 1.936E-09 | 2.063E-09 | 2.222E-09 | 2.882E-09 | 3.824E-09 | 4.763E-09 | 5.700E-09 | 6.395E-09 | 6.632E-09 | 7.559E-09 | 8.483E-09 |
| tb159 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 |
| dy159 | 4.244E-09 | 4.204E-09 | 4.114E-09 | 3.783E-09 | 2.990E-09 | 2.231E-09 | 6.560E-10 | 1.138E-10 | 1.973E-11 | 3.404E-12 | 9.225E-13 | 5.903E-13 | 1.024E-13 | 1.775E-14 |
| gd160 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 | 4.571E-02 |
| tb160 | 3.229E-04 | 3.167E-04 | 3.034E-04 | 2.565E-04 | 1.603E-04 | 8.935E-05 | 7.751E-06 | 2.342E-07 | 7.077E-09 | 2.118E-10 | 1.561E-11 | 6.401E-12 | 1.934E-13 | 5.845E-15 |
| dy160 | 1.359E-02 | 1.360E-02 | 1.361E-02 | 1.366E-02 | 1.383E-02 | 1.391E-02 | 1.391E-02 | 1.392E-02 | 1.392E-02 | 1.392E-02 | 1.392E-02 | 1.392E-02 | 1.392E-02 | 1.392E-02 |
| tb161 | 1.149E-14 | 9.401E-15 | 5.985E-15 | 1.033E-14 | 1.556E-18 | 1.657E-20 | 1.270E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| dy161 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 | 1.722E-02 |
| dy162 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 | 1.072E-02 |
| er162 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 | 5.229E-14 |
| dy163 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 | 9.148E-03 |
| ho163 | 2.985E-09 | 2.985E-09 | 2.985E-09 | 2.985E-09 | 2.985E-09 | 2.985E-09 | 2.985E-09 | 2.984E-09 | 2.984E-09 | 2.984E-09 | 2.983E-09 | 2.983E-09 | 2.983E-09 | 2.982E-09 |
| dy164 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 | 3.545E-03 |
| er164 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 | 4.652E-08 |
| ho165 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 | 3.952E-03 |
| ho166m | 9.526E-06 | 9.526E-06 | 9.525E-06 | 9.525E-06 | 9.524E-06 | 9.524E-06 | 9.520E-06 | 9.514E-06 | 9.509E-06 | 9.503E-06 | 9.499E-06 | 9.498E-06 | 9.492E-06 | 9.487E-06 |
| er166 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 |
| er167 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 | 5.991E-05 |
| er168 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 | 1.937E-04 |
| tm168 | 1.651E-11 | 1.627E-11 | 1.573E-11 | 1.381E-11 | 9.589E-12 | 6.089E-12 | 9.121E-13 | 6.023E-14 | 3.978E-15 | 2.607E-16 | 3.441E-17 | 1.722E-17 | 1.137E-18 | 7.509E-20 |
| yb168 | 2.830E-14 | 2.833E-14 | 2.838E-14 | 2.857E-14 | 2.900E-14 | 2.935E-14 | 2.980E-14 | 2.995E-14 | 2.996E-14 | 2.996E-14 | 2.996E-14 | 2.996E-14 | 2.996E-14 | 2.996E-14 |
| er169 | 9.577E-15 | 8.262E-15 | 5.928E-15 | 1.629E-15 | 4.379E-17 | 4.856E-19 | 3.258E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm169 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 | 1.418E-05 |
| yb169 | 8.385E-14 | 8.030E-14 | 7.284E-14 | 4.987E-14 | 1.726E-14 | 4.609E-15 | 1.846E-17 | 6.830E-21 | 2.528E-24 | 9.153E-28 | 2.537E-30 | 3.387E-31 | 1.254E-34 | 0.000E+00 |
| er170 | 9.743E-06 | 9.743E-06 | 9.743E-06 | 9.743E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 | 9.744E-06 |
| tm170 | 8.910E-07 | 8.814E-07 | 8.603E-07 | 7.829E-07 | 6.012E-07 | 4.327E-07 | 1.095E-07 | 1.531E-08 | 2.140E-09 | 2.977E-10 | 6.871E-11 | 4.162E-11 | 5.820E-12 | 8.138E-13 |
| yb170 | 1.025E-05 | 1.026E-05 | 1.028E-05 | 1.035E-05 | 1.054E-05 | 1.070E-05 | 1.103E-05 | 1.112E-05 | 1.113E-05 | 1.114E-05 | 1.114E-05 | 1.114E-05 | 1.114E-05 | 1.114E-05 |
| tm171 | 2.648E-06 | 2.643E-06 | 2.632E-06 | 2.586E-06 | 2.464E-06 | 2.320E-06 | 1.803E-06 | 1.257E-06 | 8.757E-07 | 6.103E-07 | 4.664E-07 | 4.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| br | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 | 3.394E-01 |
| kr | 4.073E+00 | 4.073E+00 | 4.072E+00 | 4.071E+00 | 4.069E+00 | 4.066E+00 | 4.055E+00 | 4.039E+00 | 4.025E+00 | 4.011E+00 | 4.002E+00 | 3.999E+00 | 3.987E+00 | 3.975E+00 | |
| rb | 3.613E+00 | 3.613E+00 | 3.613E+00 | 3.614E+00 | 3.617E+00 | 3.619E+00 | 3.631E+00 | 3.646E+00 | 3.661E+00 | 3.674E+00 | 3.684E+00 | 3.687E+00 | 3.699E+00 | 3.710E+00 | |
| sr | 8.559E+00 | 8.558E+00 | 8.556E+00 | 8.548E+00 | 8.527E+00 | 8.505E+00 | 8.418E+00 | 8.298E+00 | 8.181E+00 | 8.066E+00 | 7.983E+00 | 7.954E+00 | 7.845E+00 | 7.739E+00 | |
| y | 4.456E+00 | 4.456E+00 | 4.455E+00 | 4.453E+00 | 4.447E+00 | 4.443E+00 | 4.440E+00 | 4.439E+00 | 4.439E+00 | 4.439E+00 | 4.439E+00 | 4.439E+00 | 4.439E+00 | 4.439E+00 | |
| zr | 4.812E+01 | 4.812E+01 | 4.812E+01 | 4.812E+01 | 4.812E+01 | 4.813E+01 | 4.821E+01 | 4.833E+01 | 4.844E+01 | 4.856E+01 | 4.864E+01 | 4.867E+01 | 4.878E+01 | 4.888E+01 | |
| nb | 8.089E-02 | 7.926E-02 | 7.569E-02 | 6.322E-02 | 3.793E-02 | 1.991E-02 | 1.340E-03 | 9.222E-05 | 7.165E-05 | 7.554E-05 | 7.877E-05 | 7.988E-05 | 8.423E-05 | 8.858E-05 | |
| mo | 5.937E+01 | 5.937E+01 | 5.938E+01 | 5.940E+01 | 5.945E+01 | 5.949E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | 5.952E+01 | |
| tc | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | 1.422E+01 | |
| ru | 5.630E+01 | 5.628E+01 | 5.626E+01 | 5.615E+01 | 5.586E+01 | 5.555E+01 | 5.456E+01 | 5.376E+01 | 5.336E+01 | 5.315E+01 | 5.307E+01 | 5.304E+01 | 5.300E+01 | 5.297E+01 | |
| rh | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.276E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | 1.277E+01 | |
| pd | 4.776E+01 | 4.777E+01 | 4.780E+01 | 4.791E+01 | 4.819E+01 | 4.850E+01 | 4.948E+01 | 5.028E+01 | 5.069E+01 | 5.089E+01 | 5.098E+01 | 5.100E+01 | 5.105E+01 | 5.107E+01 | |
| ag | 3.020E+00 | 3.020E+00 | 3.020E+00 | 3.019E+00 | 3.016E+00 | 3.013E+00 | 3.006E+00 | 3.001E+00 | 2.999E+00 | 2.999E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | 2.998E+00 | |
| cd | 4.262E+00 | 4.262E+00 | 4.262E+00 | 4.263E+00 | 4.266E+00 | 4.268E+00 | 4.276E+00 | 4.281E+00 | 4.283E+00 | 4.283E+00 | 4.283E+00 | 4.283E+00 | 4.283E+00 | 4.283E+00 | |
| in | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.549E-02 | 4.550E-02 | 4.550E-02 | 4.550E-02 | 4.551E-02 | 4.551E-02 | 4.551E-02 | 4.551E-02 | 4.551E-02 | 4.552E-02 | 4.552E-02 | |
| sn | 1.638E+00 | 1.638E+00 | 1.638E+00 | 1.638E+00 | 1.638E+00 | 1.638E+00 | 1.637E+00 | 1.637E+00 | 1.637E+00 | 1.636E+00 | 1.636E+00 | 1.636E+00 | 1.636E+00 | 1.636E+00 | |
| sb | 4.863E-01 | 4.860E-01 | 4.854E-01 | 4.831E-01 | 4.765E-01 | 4.687E-01 | 4.387E-01 | 4.037E-01 | 3.765E-01 | 3.552E-01 | 3.426E-01 | 3.388E-01 | 3.260E-01 | 3.161E-01 | |
| te | 1.050E+01 | 1.050E+01 | 1.051E+01 | 1.051E+01 | 1.052E+01 | 1.052E+01 | 1.055E+01 | 1.058E+01 | 1.061E+01 | 1.063E+01 | 1.065E+01 | 1.066E+01 | 1.067E+01 | 1.067E+01 | |
| i | 5.468E+00 | 5.468E+00 | 5.468E+00 | 5.468E+00 | 5.470E+00 | 5.470E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | 5.472E+00 | |
| xe | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | 1.029E+02 | |
| cs | 5.642E+01 | 5.642E+01 | 5.640E+01 | 5.634E+01 | 5.617E+01 | 5.596E+01 | 5.517E+01 | 5.420E+01 | 5.337E+01 | 5.264E+01 | 5.215E+01 | 5.199E+01 | 5.141E+01 | 5.086E+01 | |
| ba | 2.659E+01 | 2.659E+01 | 2.661E+01 | 2.667E+01 | 2.684E+01 | 2.705E+01 | 2.784E+01 | 2.881E+01 | 2.964E+01 | 3.037E+01 | 3.086E+01 | 3.102E+01 | 3.160E+01 | 3.215E+01 | |
| la | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | 2.136E+01 | |
| ce | 4.382E+01 | 4.380E+01 | 4.377E+01 | 4.365E+01 | 4.334E+01 | 4.301E+01 | 4.203E+01 | 4.137E+01 | 4.110E+01 | 4.098E+01 | 4.095E+01 | 4.094E+01 | 4.092E+01 | 4.091E+01 | |
| pr | 1.943E+01 | 1.943E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | 1.944E+01 | |
| nd | 6.372E+01 | 6.374E+01 | 6.377E+01 | 6.389E+01 | 6.420E+01 | 6.453E+01 | 6.550E+01 | 6.617E+01 | 6.644E+01 | 6.655E+01 | 6.659E+01 | 6.660E+01 | 6.662E+01 | 6.662E+01 | |
| pm | 2.496E+00 | 2.493E+00 | 2.484E+00 | 2.453E+00 | 2.367E+00 | 2.265E+00 | 1.883E+00 | 1.446E+00 | 1.111E+00 | 8.524E-01 | 7.001E-01 | 6.546E-01 | 5.027E-01 | 3.860E-01 | |
| sm | 1.410E+01 | 1.410E+01 | 1.411E+01 | 1.414E+01 | 1.423E+01 | 1.433E+01 | 1.471E+01 | 1.514E+01 | 1.547E+01 | 1.573E+01 | 1.588E+01 | 1.593E+01 | 1.608E+01 | 1.619E+01 | |
| eu | 3.963E+00 | 3.962E+00 | 3.961E+00 | 3.957E+00 | 3.944E+00 | 3.929E+00 | 3.867E+00 | 3.786E+00 | 3.712E+00 | 3.646E+00 | 3.601E+00 | 3.586E+00 | 3.532E+00 | 3.483E+00 | |
| gd | 3.349E+00 | 3.350E+00 | 3.351E+00 | 3.355E+00 | 3.368E+00 | 3.384E+00 | 3.448E+00 | 3.532E+00 | 3.608E+00 | 3.677E+00 | 3.724E+00 | 3.739E+00 | 3.796E+00 | 3.847E+00 | |
| tb | 1.013E-01 | 1.013E-01 | 1.013E-01 | 1.013E-01 | 1.012E-01 | 1.011E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | 1.010E-01 | |
| dy | 5.423E-02 | 5.424E-02 | 5.425E-02 | 5.430E-02 | 5.439E-02 | 5.447E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | 5.455E-02 | |
| ho | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | 3.962E-03 | |
| er | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | 1.544E-03 | |
| tm | 1.772E-05 | 1.771E-05 | 1.767E-05 | 1.755E-05 | 1.725E-05 | 1.694E-05 | 1.610E-05 | 1.546E-05 | 1.506E-05 | 1.479E-05 | 1.465E-05 | 1.461E-05 | 1.448E-05 | 1.439E-05 | |
| yb | 2.036E-05 | 2.037E-05 | 2.041E-05 | 2.053E-05 | 2.083E-05 | 2.115E-05 | 2.199E-05 | 2.263E-05 | 2.302E-05 | 2.329E-05 | 2.343E-05 | 2.347E-05 | 2.360E-05 | 2.369E-05 | |
| totals | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | 6.443E+02 | |

1

5 more years for cooling used fuel material fission products page 30

0

nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.049e+01 | 1.049E+01 | 1.048E+01 | 1.045E+01 | 1.037E+01 | 1.027E+01 | 9.878E+00 | 9.338E+00 | 8.828E+00 | 8.344E+00 | 8.001E+00 | 7.888E+00 | 7.456E+00 | 7.049E+00 |
| ga 68 | 2.739E-17 | 2.725E-17 | 2.694E-17 | 2.576E-17 | 2.273E-17 | 1.944E-17 | 1.013E-17 | 3.981E-18 | 1.565E-18 | 6.135E-19 | 3.059E-19 | 2.411E-19 | 9.479E-20 | 3.726E-20 |
| ge 68 | 2.739E-17 | 2.725E-17 | 2.694E-17 | 2.576E-17 | 2.272E-17 | 1.944E-17 | 1.012E-17 | 3.980E-18 | 1.564E-18 | 6.134E-19 | 3.059E-19 | 2.411E-19 | 9.477E-20 | 3.725E-20 |
| ge 71 | 4.849E-12 | 4.295E-12 | 3.269E-12 | 1.131E-12 | 5.795E-14 | 1.434E-15 | 2.758E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 5.240E-08 | 5.150E-08 | 4.954E-08 | 4.260E-08 | 2.790E-08 | 1.648E-08 | 1.824E-09 | 7.811E-11 | 3.345E-12 | 1.420E-13 | 1.357E-14 | 6.081E-15 | 2.604E-16 | 1.115E-17 |
| as 73 | 5.240E-08 | 5.150E-08 | 4.954E-08 | 4.260E-08 | 2.790E-08 | 1.648E-08 | 1.824E-09 | 7.811E-11 | 3.345E-12 | 1.420E-13 | 1.357E-14 | 6.081E-15 | 2.604E-16 | 1.115E-17 |
| as 74 | 6.239E-09 | 5.770E-09 | 4.841E-09 | 2.446E-09 | 3.618E-10 | 3.350E-11 | 1.604E-15 | 1.052E-21 | 6.898E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 2.096E-06 | 2.072E-06 | 2.019E-06 | 1.825E-06 | 1.374E-06 | 9.655E-07 | 2.208E-07 | 2.671E-08 | 3.232E-09 | 3.887E-10 | 8.056E-11 | 4.704E-11 | 5.691E-12 | 6.885E-13 |
| se 79 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 |
| kr 81 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 | 1.238E-08 |
| kr 83m | 1.459E-05 | 1.435E-05 | 1.384E-05 | 1.203E-05 | 8.109E-06 | 4.965E-06 | 6.389E-07 | 3.394E-08 | 1.803E-09 | 9.504E-11 | 1.067E-11 | 5.049E-12 | 2.683E-13 | 1.425E-14 |
| kr 83 | 1.962E-05 | 1.931E-05 | 1.862E-05 | 1.618E-05 | 1.091E-05 | 6.680E-06 | 8.595E-07 | 4.567E-08 | 2.426E-09 | 1.279E-10 | 1.435E-11 | 6.793E-12 | 3.609E-13 | 1.917E-14 |
| kr 84 | 7.764E-05 | 7.443E-05 | 6.768E-05 | 4.677E-05 | 1.662E-05 | 4.581E-06 | 2.099E-08 | 9.424E-12 | 4.230E-15 | 1.859E-18 | 5.950E-21 | 8.346E-22 | 3.746E-25 | 1.682E-28 |
| kr 85 | 1.041E+02 | 1.040E+02 | 1.040E+02 | 1.036E+02 | 1.027E+02 | 1.016E+02 | 9.717E+01 | 9.111E+01 | 8.542E+01 | 8.008E+01 | 7.633E+01 | 7.509E+01 | 7.040E+01 | 6.601E+01 |
| sr 85 | 6.445E-06 | 6.308E-06 | 6.012E-06 | 4.986E-06 | 2.953E-06 | 1.538E-06 | 1.007E-07 | 2.035E-09 | 4.112E-11 | 8.218E-13 | 4.487E-14 | 1.660E-14 | 3.354E-16 | 6.777E-18 |
| rb 86 | 3.809E-03 | 3.536E-03 | 2.991E-03 | 1.560E-03 | 2.520E-04 | 2.604E-05 | 1.975E-09 | 2.500E-15 | 3.166E-21 | 3.862E-27 | 1.556E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 |
| y 88 | 6.442E-03 | 6.359E-03 | 6.175E-03 | 5.511E-03 | 4.008E-03 | 2.696E-03 | 5.138E-04 | 4.790E-05 | 4.466E-06 | 4.137E-07 | 7.059E-08 | 3.857E-08 | 3.595E-09 | 3.352E-10 |
| zr 88 | 1.893E-09 | 1.862E-09 | 1.794E-09 | 1.551E-09 | 1.032E-09 | 6.216E-10 | 7.466E-11 | 3.594E-12 | 1.730E-13 | 8.262E-15 | 8.616E-16 | 3.978E-16 | 1.915E-17 | 9.219E-19 |
| sr 89 | 2.929E+02 | 2.850E+02 | 2.679E+02 | 2.108E+02 | 1.076E+02 | 4.661E+01 | 1.410E+00 | 9.436E-03 | 6.314E-05 | 4.167E-07 | 9.987E-09 | 2.789E-09 | 1.866E-11 | 1.249E-13 |
| y 89m | 2.824E-02 | 2.747E-02 | 2.583E-02 | 2.032E-02 | 1.037E-02 | 4.493E-03 | 1.359E-04 | 9.097E-07 | 6.087E-09 | 4.017E-11 | 9.627E-13 | 2.688E-13 | 1.799E-15 | 1.204E-17 |
| sr 90 | 7.144E+02 | 7.143E+02 | 7.141E+02 | 7.133E+02 | 7.110E+02 | 7.081E+02 | 6.963E+02 | 6.798E+02 | 6.636E+02 | 6.478E+02 | 6.363E+02 | 6.324E+02 | 6.174E+02 | 6.027E+02 |
| y 90 | 7.146E+02 | 7.145E+02 | 7.143E+02 | 7.135E+02 | 7.112E+02 | 7.083E+02 | 6.965E+02 | 6.800E+02 | 6.638E+02 | 6.480E+02 | 6.365E+02 | 6.326E+02 | 6.175E+02 | 6.029E+02 |
| y 91 | 6.621E+02 | 6.466E+02 | 6.130E+02 | 4.982E+02 | 2.788E+02 | 1.354E+02 | 6.600E+00 | 8.742E-02 | 1.158E-03 | 1.516E-05 | 6.042E-07 | 2.008E-07 | 2.659E-09 | 3.523E-11 |
| nb 91 | 8.519E-10 | 8.519E-10 | 8.518E-10 | 8.518E-10 | 8.517E-10 | 8.515E-10 | 8.509E-10 | 8.501E-10 | 8.492E-10 | 8.483E-10 | 8.477E-10 | 8.475E-10 | 8.466E-10 | 8.458E-10 |
| nb 91m | 2.901E-12 | 2.835E-12 | 2.694E-12 | 2.207E-12 | 1.263E-12 | 6.305E-13 | 3.454E-14 | 5.407E-16 | 8.464E-18 | 1.310E-19 | 5.913E-21 | 2.050E-21 | 3.209E-23 | 5.024E-25 |
| nb 92 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 | 1.431E-12 |
| nb 92m | 1.781E-14 | 1.554E-14 | 1.143E-14 | 3.459E-15 | 1.218E-16 | 1.890E-18 | 5.172E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 | 2.417E-02 |
| nb 93m | 2.143E-03 | 2.148E-03 | 2.159E-03 | 2.203E-03 | 2.326E-03 | 2.478E-03 | 3.101E-03 | 3.962E-03 | 4.786E-03 | 5.578E-03 | 6.144E-03 | 6.334E-03 | 7.059E-03 | 7.753E-03 |
| mo 93 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.220E-09 | 6.219E-09 | 6.218E-09 | 6.217E-09 | 6.216E-09 | 6.216E-09 | 6.214E-09 | 6.213E-09 |
| nb 94 | 8.864E-06 | 8.864E-06 | 8.864E-06 | 8.864E-06 | 8.864E-06 | 8.864E-06 | 8.863E-06 | 8.863E-06 | 8.863E-06 | 8.863E-06 | 8.862E-06 | 8.862E-06 | 8.862E-06 | 8.862E-06 |
| zr 95 | 1.538E+03 | 1.505E+03 | 1.434E+03 | 1.186E+03 | 6.979E+02 | 3.606E+02 | 2.281E+01 | 4.387E-01 | 8.438E-03 | 1.605E-04 | 8.449E-06 | 3.088E-06 | 5.938E-08 | 1.142E-09 |
| nb 95 | 3.175E+03 | 3.111E+03 | 2.971E+03 | 2.481E+03 | 1.488E+03 | 7.796E+02 | 5.980E+01 | 1.922E-01 | 4.434E-03 | 1.655E-04 | 8.812E-06 | 1.151E-07 | 2.601E-09 | 5.985E-11 |
| nb 95m | 1.761E+01 | 1.723E+01 | 1.641E+01 | 1.358E+01 | 7.990E+00 | 4.128E+00 | 2.611E-01 | 5.022E-03 | 9.659E-05 | 1.838E-06 | 9.672E-08 | 3.534E-08 | 6.797E-10 | 1.307E-11 |
| tc 95 | 1.742E-13 | 1.703E-13 | 1.618E-13 | 1.326E-13 | 7.599E-14 | 3.799E-14 | 2.096E-15 | 3.312E-17 | 5.233E-19 | 8.177E-21 | 3.718E-22 | 1.292E-22 | 2.042E-24 | 0.000E+00 |
| tc 95m | 4.428E-12 | 4.328E-12 | 4.113E-12 | 3.371E-12 | 1.932E-12 | 9.658E-13 | 5.327E-14 | 8.418E-16 | 1.330E-17 | 2.079E-19 | 9.451E-21 | 3.285E-21 | 5.191E-23 | 8.203E-25 |
| zr 96 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 | 2.399E-15 |
| tc 97 | 1.347E-10 | 1.347E-10 | 1.347E-10 | 1.349E-10 | 1.352E-10 | 1.355E-10 | 1.359E-10 | 1.360E-10 | 1.360E-10 | 1.360E-10 | 1.360E-10 | 1.360E-10 | 1.360E-10 | 1.360E-10 |
| tc 97m | 2.367E-05 | 2.331E-05 | 2.252E-05 | 1.971E-05 | 1.357E-05 | 8.528E-06 | 1.223E-06 | 7.583E-08 | 4.704E-09 | 2.895E-10 | 3.647E-11 | 1.796E-11 | 1.114E-12 | 6.908E-14 |
| tc 98 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 | 1.382E-07 |
| tc 99 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 |
| rh 99 | 2.496E-16 | 2.290E-16 | 1.887E-16 | 8.882E-17 | 1.077E-17 | 7.794E-19 | 1.330E-23 | 1.992E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 | 8.821E-15 |
| rh101 | 8.957E-06 | 8.947E-06 | 8.924E-06 | 8.834E-06 | 8.589E-06 | 8.293E-06 | 7.162E-06 | 5.806E-06 | 4.706E-06 | 3.813E-06 | 3.261E-06 | 3.091E-06 | 2.506E-06 | 2.031E-06 |
| rh102 | 8.001E-02 | 7.948E-02 | 7.829E-02 | 7.384E-02 | 6.269E-02 | 5.114E-02 | 2.183E-02 | 6.475E-03 | 1.938E-03 | 5.931E-04 | 2.555E-04 | 1.940E-04 | 7.308E-05 | 3.471E-05 |
| rh102m | 2.746E-02 | 2.744E-02 | 2.737E-02 | 2.713E-02 | 2.647E-02 | 2.566E-02 | 2.255E-02 | 1.874E-02 | 1.557E-02 | 1.293E-02 | 1.127E-02 | 1.075E-02 | 8.931E-03 | 7.422E-03 |
| ru103 | 4.347E+02 | 4.196E+02 | 3.875E+02 | 2.845E+02 | 1.197E+02 | 4.077E+01 | 4.513E-01 | 7.159E-04 | 1.136E-06 | 1.770E-09 | 1.451E-11 | 2.807E-12 | 4.453E-15 | 7.064E-18 |
| rh103m | 4.300E+02 | 4.151E+02 | 3.834E+02 | 2.814E+02 | 1.185E+02 | 4.033E+01 | 4.464E-01 | 7.082E-04 | 1.123E-06 | 1.751E-09 | 1.435E-11 | 2.777E-12 | 4.405E-15 | 6.988E-18 |
| pd103 | 8.698E-06 | 8.016E-06 | 6.672E-06 | 3.267E-06 | 4.426E-07 | 3.675E-08 | 1.115E-12 | 3.808E-19 | 1.300E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 5.519E-12 | 5.337E-12 | 4.948E-12 | 3.689E-12 | 1.620E-12 | 5.820E-13 | 8.050E-15 | 1.757E-17 | 3.833E-20 | 8.226E-23 | 8.553E-25 | 1.795E-25 | 3.917E-28 | 8.549E-31 |
| ru106 | 1.108E+04 | 1.103E+04 | 1.094E+04 | 1.059E+04 | 9.667E+03 | 8.627E+03 | 5.363E+03 | 2.716E+03 | 1.375E+03 | 6.950E+02 | 4.185E+02 | 3.519E+02 | 1.782E+02 | 9.023E+01 |

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5 more years for cooling used fuel material fission products page 31

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rh106 | 1.108E+04 | 1.103E+04 | 1.094E+04 | 1.059E+04 | 9.667E+03 | 8.627E+03 | 5.363E+03 | 2.716E+03 | 1.375E+03 | 6.950E+02 | 4.185E+02 | 3.519E+02 | 1.782E+02 | 9.023E+01 |
| ag106m | 1.003E-16 | 8.482E-17 | 5.820E-17 | 1.345E-17 | 2.224E-19 | 1.347E-21 | 7.220E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 |
| ag108 | 6.888E-06 | 6.888E-06 | 6.888E-06 | 6.887E-06 | 6.886E-06 | 6.884E-06 | 6.877E-06 | 6.866E-06 | 6.855E-06 | 6.844E-06 | 6.836E-06 | 6.833E-06 | 6.822E-06 | 6.812E-06 |
| ag108m | 7.917E-05 | 7.917E-05 | 7.917E-05 | 7.917E-05 | 7.915E-05 | 7.913E-05 | 7.904E-05 | 7.892E-05 | 7.879E-05 | 7.867E-05 | 7.857E-05 | 7.854E-05 | 7.842E-05 | 7.829E-05 |
| ag109m | 8.344E-03 | 8.319E-03 | 8.263E-03 | 8.049E-03 | 7.477E-03 | 6.823E-03 | 4.651E-03 | 2.688E-03 | 1.553E-03 | 8.963E-04 | 5.957E-04 | 5.180E-04 | 2.993E-04 | 1.730E-04 |
| cd109 | 8.344E-03 | 8.319E-03 | 8.263E-03 | 8.049E-03 | 7.477E-03 | 6.823E-03 | 4.651E-03 | 2.688E-03 | 1.553E-03 | 8.963E-04 | 5.957E-04 | 5.180E-04 | 2.993E-04 | 1.730E-04 |
| ag110 | 1.411E+00 | 1.403E+00 | 1.386E+00 | 1.320E+00 | 1.152E+00 | 9.730E-01 | 4.795E-01 | 1.741E-01 | 6.322E-02 | 2.290E-02 | 1.076E-02 | 8.314E-03 | 3.019E-03 | 1.096E-03 |
| ag110m | 1.038E+02 | 1.032E+02 | 1.019E+02 | 9.708E+01 | 8.474E+01 | 7.154E+01 | 3.525E+01 | 1.280E+01 | 4.649E+00 | 1.683E+00 | 7.914E-01 | 6.113E-01 | 2.220E-01 | 8.062E-02 |
| ag111 | 3.196E-07 | 2.654E-07 | 1.746E-07 | 3.427E-08 | 3.589E-10 | 1.231E-12 | 6.114E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 | 1.853E-15 |
| cd113m | 1.523E-02 | 1.523E-02 | 1.522E-02 | 1.518E-02 | 1.508E-02 | 1.496E-02 | 1.445E-02 | 1.376E-02 | 1.310E-02 | 1.247E-02 | 1.202E-02 | 1.187E-02 | 1.130E-02 | 1.076E-02 |
| in113m | 1.095E-08 | 1.082E-08 | 1.053E-08 | 9.480E-09 | 7.057E-09 | 4.888E-09 | 1.052E-09 | 1.168E-10 | 1.296E-11 | 1.438E-12 | 2.779E-13 | 1.587E-13 | 1.762E-14 | 1.956E-15 |
| sn113 | 1.095E-08 | 1.082E-08 | 1.053E-08 | 9.474E-09 | 7.053E-09 | 4.885E-09 | 1.052E-09 | 1.167E-10 | 1.296E-11 | 1.429E-12 | 2.778E-13 | 1.586E-13 | 1.761E-14 | 1.954E-15 |
| in114 | 1.146E-04 | 1.114E-04 | 1.046E-04 | 8.188E-05 | 4.124E-05 | 1.755E-05 | 4.942E-07 | 2.983E-09 | 1.800E-11 | 1.071E-13 | 2.378E-15 | 6.467E-16 | 3.903E-18 | 2.356E-20 |
| in114m | 1.184E-04 | 1.152E-04 | 1.081E-04 | 8.463E-05 | 4.262E-05 | 1.814E-05 | 5.108E-07 | 3.083E-09 | 1.861E-11 | 1.107E-13 | 2.457E-15 | 6.684E-16 | 4.034E-18 | 2.435E-20 |
| cd115m | 3.439E-01 | 3.334E-01 | 3.108E-01 | 2.368E-01 | 1.105E-01 | 4.278E-02 | 8.100E-04 | 2.771E-06 | 9.481E-09 | 3.194E-11 | 4.643E-13 | 1.093E-13 | 3.738E-16 | 1.279E-18 |
| in115 | 3.207E-13 | 3.207E-13 | 3.207E-13 | 3.207E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 | 3.208E-13 |
| in115m | 3.654E-05 | 3.544E-05 | 3.303E-05 | 2.516E-05 | 1.174E-05 | 4.545E-06 | 8.606E-08 | 2.944E-10 | 1.007E-12 | 3.393E-15 | 4.933E-17 | 1.161E-17 | 3.972E-20 | 1.359E-22 |
| cd116 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 | 1.625E-17 |
| sn117m | 1.056E-05 | 9.539E-06 | 7.584E-06 | 3.108E-06 | 2.558E-07 | 1.142E-08 | 5.590E-14 | 1.159E-22 | 1.799E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 3.726E+00 | 3.708E+00 | 3.669E+00 | 3.520E+00 | 3.135E+00 | 2.714E+00 | 1.484E+00 | 6.260E-01 | 2.640E-01 | 1.111E-01 | 5.835E-02 | 4.683E-02 | 1.975E-02 | 8.327E-03 |
| sb120m | 3.632E-16 | 2.855E-16 | 1.661E-16 | 2.022E-17 | 5.558E-20 | 3.605E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 5.643E-01 | 5.642E-01 | 5.641E-01 | 5.637E-01 | 5.625E-01 | 5.610E-01 | 5.549E-01 | 5.462E-01 | 5.376E-01 | 5.292E-01 | 5.230E-01 | 5.209E-01 | 5.128E-01 | 5.047E-01 |
| sn121m | 7.271E-01 | 7.270E-01 | 7.269E-01 | 7.264E-01 | 7.248E-01 | 7.229E-01 | 7.150E-01 | 7.038E-01 | 6.928E-01 | 6.819E-01 | 6.739E-01 | 6.712E-01 | 6.607E-01 | 6.504E-01 |
| te121 | 3.119E-05 | 3.093E-05 | 3.034E-05 | 2.818E-05 | 2.291E-05 | 1.770E-05 | 6.036E-06 | 1.292E-06 | 2.769E-07 | 5.906E-08 | 1.874E-08 | 1.265E-08 | 2.710E-09 | 5.805E-10 |
| te121m | 3.107E-05 | 3.081E-05 | 3.023E-05 | 2.808E-05 | 2.283E-05 | 1.765E-05 | 6.015E-06 | 1.288E-06 | 2.760E-07 | 5.887E-08 | 1.867E-08 | 1.261E-08 | 2.701E-09 | 5.787E-10 |
| sn123 | 9.880E+00 | 9.775E+00 | 9.541E+00 | 8.606E+00 | 6.678E+00 | 4.813E+00 | 1.027E+00 | 3.426E-01 | 3.462E-02 | 2.441E-03 | 

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te129m | 5.422E+00 | 5.203E+00 | 4.742E+00 | 3.305E+00 | 1.203E+00 | 3.417E-01 | 1.774E-03 | 9.525E-07 | 5.113E-10 | 2.689E-13 | 9.833E-16 | 1.444E-16 | 7.750E-20 | 4.161E-23 | |
| i129 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | |
| xe129m | 2.976E-09 | 2.546E-09 | 1.792E-09 | 4.571E-10 | 9.975E-12 | 8.531E-14 | 1.934E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| i131 | 1.635E-05 | 1.376E-05 | 9.326E-06 | 2.057E-06 | 2.987E-08 | 1.538E-10 | 4.186E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| xe131m | 4.536E-04 | 4.035E-04 | 3.101E-04 | 1.113E-04 | 6.324E-06 | 1.779E-07 | 5.844E-14 | 3.066E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cs131 | 1.460E-11 | 1.266E-11 | 9.177E-12 | 2.630E-12 | 7.975E-14 | 1.038E-15 | 2.141E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| ba131 | 2.291E-14 | 2.031E-14 | 1.548E-14 | 5.392E-15 | 2.813E-16 | 7.117E-18 | 1.504E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| cs132 | 4.422E-12 | 3.570E-12 | 2.206E-12 | 3.394E-13 | 1.796E-15 | 2.634E-18 | 3.753E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |

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5 more years for cooling used fuel material fission products page 32

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe133 | 6.053E-10 | 4.647E-10 | 2.563E-10 | 2.535E-11 | 3.896E-14 | 1.225E-17 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 8.103E-04 | 8.100E-04 | 8.094E-04 | 8.068E-04 | 7.997E-04 | 7.910E-04 | 7.554E-04 | 7.072E-04 | 6.622E-04 | 6.198E-04 | 5.901E-04 | 5.803E-04 | 5.433E-04 | 5.087E-04 |
| cs134 | 2.989E+03 | 2.984E+03 | 2.971E+03 | 2.924E+03 | 2.795E+03 | 2.643E+03 | 2.091E+03 | 1.495E+03 | 1.069E+03 | 7.637E+02 | 5.948E+02 | 5.460E+02 | 3.904E+02 | 2.792E+02 |
| cs135 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 |
| cs136 | 3.750E-03 | 3.375E-03 | 2.663E-03 | 1.059E-03 | 8.021E-05 | 3.227E-06 | 4.740E-12 | 2.121E-20 | 9.488E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 4.153E-04 | 3.738E-04 | 2.949E-04 | 1.173E-04 | 8.882E-06 | 3.574E-07 | 5.249E-13 | 2.348E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.001E+03 | 2.001E+03 | 2.000E+03 | 1.998E+03 | 1.992E+03 | 1.984E+03 | 1.953E+03 | 1.908E+03 | 1.865E+03 | 1.822E+03 | 1.791E+03 | 1.781E+03 | 1.740E+03 | 1.700E+03 |
| ba137m | 1.895E+03 | 1.895E+03 | 1.894E+03 | 1.892E+03 | 1.886E+03 | 1.879E+03 | 1.849E+03 | 1.807E+03 | 1.766E+03 | 1.726E+03 | 1.696E+03 | 1.686E+03 | 1.648E+03 | 1.610E+03 |
| la137 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 |
| la138 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 | 1.020E-11 |
| ce139 | 1.653E-01 | 1.636E-01 | 1.600E-01 | 1.465E-01 | 1.144E-01 | 8.418E-02 | 2.331E-02 | 3.708E-03 | 5.901E-04 | 9.342E-05 | 2.374E-05 | 1.486E-05 | 2.365E-06 | 3.763E-07 |
| ba140 | 5.260E-02 | 4.718E-02 | 3.694E-02 | 1.427E-02 | 9.950E-04 | 3.614E-05 | 3.317E-11 | 3.317E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 6.057E-02 | 5.433E-02 | 4.254E-02 | 1.647E-02 | 1.146E-03 | 4.161E-05 | 3.981E-11 | 9.643E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.367E+02 | 1.310E+02 | 1.190E+02 | 8.194E+01 | 2.882E+01 | 7.850E+00 | 3.416E-02 | 1.424E-05 | 5.936E-09 | 2.422E-12 | 7.336E-15 | 1.010E-15 | 4.210E-19 | 1.755E-22 |
| pr143 | 1.017E-01 | 9.183E-02 | 7.297E-02 | 2.985E-02 | 2.443E-03 | 1.083E-04 | 2.387E-10 | 1.909E-18 | 1.527E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 8.816E-11 | 8.770E-11 | 8.667E-11 | 8.279E-11 | 7.284E-11 | 6.209E-11 | 3.187E-11 | 1.227E-11 | 4.722E-12 | 1.813E-12 | 8.899E-13 | 6.978E-13 | 2.686E-13 | 1.034E-13 |
| ce144 | 9.259E+03 | 9.214E+03 | 9.113E+03 | 8.733E+03 | 7.752E+03 | 6.683E+03 | 3.594E+03 | 1.479E+03 | 6.084E+02 | 2.498E+02 | 1.289E+02 | 1.028E+02 | 4.229E+01 | 1.740E+01 |
| pr144 | 9.259E+03 | 9.214E+03 | 9.114E+03 | 8.734E+03 | 7.752E+03 | 6.683E+03 | 3.594E+03 | 1.479E+03 | 6.085E+02 | 2.498E+02 | 1.289E+02 | 1.028E+02 | 4.229E+01 | 1.740E+01 |
| pr144m | 8.840E+01 | 8.797E+01 | 8.701E+01 | 8.339E+01 | 7.402E+01 | 6.381E+01 | 3.431E+01 | 1.412E+01 | 5.809E+00 | 2.385E+00 | 1.230E+00 | 9.812E-01 | 4.037E-01 | 1.661E-01 |
| nd144 | 1.732E-11 | 1.733E-11 | 1.737E-11 | 1.750E-11 | 1.783E-11 | 1.820E-11 | 1.925E-11 | 1.997E-11 | 2.027E-11 | 2.039E-11 | 2.043E-11 | 2.044E-11 | 2.046E-11 | 2.047E-11 |
| pm144 | 1.905E-08 | 1.897E-08 | 1.881E-08 | 1.819E-08 | 1.657E-08 | 1.475E-08 | 9.062E-09 | 4.514E-09 | 2.248E-09 | 1.118E-09 | 6.649E-10 | 5.567E-10 | 2.773E-10 | 1.381E-10 |
| pm145 | 7.263E-05 | 7.262E-05 | 7.259E-05 | 7.248E-05 | 7.216E-05 | 7.175E-05 | 7.002E-05 | 6.748E-05 | 6.497E-05 | 6.250E-05 | 6.072E-05 | 6.012E-05 | 5.782E-05 | 5.560E-05 |
| sm145 | 1.249E-05 | 1.244E-05 | 1.232E-05 | 1.189E-05 | 1.076E-05 | 9.503E-06 | 5.650E-06 | 2.685E-06 | 1.276E-06 | 6.049E-07 | 3.474E-07 | 2.874E-07 | 1.366E-07 | 6.489E-08 |
| pm146 | 2.435E-03 | 2.433E-03 | 2.429E-03 | 2.415E-03 | 2.374E-03 | 2.325E-03 | 2.130E-03 | 1.880E-03 | 1.658E-03 | 1.463E-03 | 1.332E-03 | 1.290E-03 | 1.138E-03 | 1.004E-03 |
| sm146 | 1.133E-09 | 1.133E-09 | 1.134E-09 | 1.134E-09 | 1.135E-09 | 1.135E-09 | 1.139E-09 | 1.144E-09 | 1.148E-09 | 1.151E-09 | 1.154E-09 | 1.154E-09 | 1.157E-09 | 1.160E-09 |
| nd147 | 2.466E-03 | 2.174E-03 | 1.636E-03 | 5.420E-04 | 2.458E-05 | 5.226E-07 | 5.333E-14 | 5.248E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.314E+03 | 2.311E+03 | 2.304E+03 | 2.275E+03 | 2.195E+03 | 2.101E+03 | 1.747E+03 | 1.341E+03 | 1.030E+03 | 7.905E+02 | 6.493E+02 | 6.071E+02 | 4.662E+02 | 3.580E+02 |
| sm147 | 3.677E-08 | 3.685E-08 | 3.704E-08 | 3.775E-08 | 3.971E-08 | 4.206E-08 | 5.082E-08 | 6.085E-08 | 6.855E-08 | 7.448E-08 | 7.798E-08 | 7.902E-08 | 8.251E-08 | 8.519E-08 |
| eu147 | 3.040E-15 | 2.870E-15 | 2.521E-15 | 1.524E-15 | 3.724E-16 | 6.442E-17 | 4.206E-20 | 1.160E-24 | 3.202E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 6.775E-01 | 6.552E-01 | 6.075E-01 | 4.528E-01 | 1.989E-01 | 7.152E-02 | 9.882E-04 | 2.157E-06 | 4.706E-09 | 1.010E-11 | 1.050E-13 | 2.204E-14 | 4.809E-17 | 1.049E-19 |
| pm148m | 1.403E+01 | 1.357E+01 | 1.258E+01 | 9.380E+00 | 4.121E+00 | 1.480E+00 | 2.047E-02 | 4.467E-05 | 9.748E-08 | 2.092E-10 | 2.175E-12 | 4.565E-13 | 9.962E-16 | 2.174E-18 |
| sm148 | 9.855E-13 | 9.856E-13 | 9.856E-13 | 9.856E-13 | 9.857E-13 | 9.857E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 | 9.858E-13 |
| eu149 | 9.289E-09 | 9.152E-09 | 8.851E-09 | 7.769E-09 | 5.394E-09 | 3.425E-09 | 5.131E-10 | 3.388E-11 | 2.238E-12 | 1.467E-13 | 1.936E-14 | 9.686E-15 | 6.396E-16 | 4.224E-17 |
| nd150 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 | 1.233E-15 |
| sm151 | 8.901E+00 | 8.900E+00 | 8.899E+00 | 8.896E+00 | 8.887E+00 | 8.876E+00 | 8.828E+00 | 8.760E+00 | 8.693E+00 | 8.626E+00 | 8.577E+00 | 8.560E+00 | 8.495E+00 | 8.429E+00 |
| gd151 | 7.669E-06 | 7.584E-06 | 7.395E-06 | 6.706E-06 | 5.099E-06 | 3.626E-06 | 8.717E-07 | 1.133E-07 | 1.473E-08 | 1.904E-09 | 4.162E-10 | 2.475E-10 | 3.217E-11 | 4.181E-12 |
| eu152 | 7.594E-02 | 7.592E-02 | 7.587E-02 | 7.569E-02 | 7.517E-02 | 7.453E-02 | 7.191E-02 | 6.833E-02 | 6.492E-02 | 6.167E-02 | 5.936E-02 | 5.859E-02 | 5.567E-02 | 5.289E-02 |
| gd152 | 2.029E-14 | 2.029E-14 | 2.029E-14 | 2.029E-14 | 2.031E-14 | 2.034E-14 | 2.043E-14 | 2.055E-14 | 2.067E-14 | 2.078E-14 | 2.087E-14 | 2.089E-14 | 2.099E-14 | 2.109E-14 |
| gd153 | 1.412E-01 | 1.404E-01 | 1.386E-01 | 1.317E-01 | 1.144E-01 | 9.594E-02 | 4.599E-02 | 1.606E-02 | 5.605E-03 | 1.951E-03 | 8.905E-04 | 6.811E-04 | 2.378E-04 | 8.300E-05 |
| eu154 | 2.263E+02 | 2.262E+02 | 2.259E+02 | 2.251E+02 | 2.227E+02 | 2.197E+02 | 2.077E+02 | 1.916E+02 | 1.768E+02 | 1.630E+02 | 1.536E+02 | 1.504E+02 | 1.388E+02 | 1.281E+02 |
| eu155 | 1.014E+02 | 1.013E+02 | 1.011E+02 | 1.004E+02 | 9.848E+01 | 9.611E+01 | 8.685E+01 | 7.504E+01 | 6.488E+01 | 5.608E+01 | 5.027E+01 | 4.844E+01 | 4.187E+01 | 3.619E+01 |
| eu156 | 9.736E-02 | 8.887E-02 | 7.237E-02 | 3.256E-02 | 3.481E-03 | 2.152E-04 | 1.902E-09 | 1.111E-16 | 6.490E-24 | 3.622E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 3.436E-07 | 3.436E-07 | 3.435E-07 | 3.434E-07 | 3.429E-07 | 3.424E-07 | 3.400E-07 | 3.367E-07 | 3.335E-07 | 3.302E-07 | 3.278E-07 | 3.270E-07 | 3.238E-07 | 3.207E-07 |
| tb158 | 1.866E-05 | 1.866E-05 | 1.866E-05 | 1.865E-05 | 1.864E-05 | 1.863E-05 | 1.858E-05 | 1.851E-05 | 1.844E-05 | 1.837E-05 | 1.832E-05 | 1.830E-05 | 1.823E-05 | 1.816E-05 |
| dy159 | 2.415E-05 | 2.392E-05 | 2.341E-05 | 2.152E-05 | 1.701E-05 | 1.269E-05 | 3.732E-06 | 6.472E-07 | 1.122E-07 | 1.937E-08 | 5.249E-09 | 3.359E-09 | 5.825E-10 | 1.010E-10 |
| tb160 | 3.646E+00 | 3.577E+00 | 3.426E+00 | 2.896E+00 | 1.811E+00 | 1.009E+00 | 8.753E-02 | 2.645E-03 | 7.992E-05 | 2.392E-06 | 1.763E-07 | 7.228E-08 | 2.184E-09 | 6.600E-11 |
| tb161 | 1.350E-09 | 1.105E-09 | 7.031E-10 | 1.214E-10 | 8.878E-13 | 1.947E-15 | 1.492E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.433E-09 | 1.432E-09 | 1.432E-09 | 1.432E-09 |
| ho166m | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.709E-05 | 1.708E-05 | 1.707E-05 | 1.706E-05 | 1.706E-05 | 1.705E-05 | 1.704E-05 | 1.703E-05 |
| tm167 | 1.617E-16 | 1.392E-16 | 9.935E-17 | 2.677E-17 | 6.807E-19 | 7.044E-21 | 3.541E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.379E-07 | 1.359E-07 | 1.314E-07 | 1.154E-07 | 8.009E-08 | 5.086E-08 | 7.618E-09 | 5.031E-10 | 3.322E-11 | 2.178E-12 | 2.874E-13 | 1.438E-13 | 9.497E-15 | 6.271E-16 |
| er169 | 7.882E-10 | 6.800E-10 | 4.878E-10 | 1.341E-10 | 3.604E-12 | 3.996E-14 | 2.682E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material fission products page 33

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb169 | 2.024E-09 | 1.939E-09 | 1.759E-09 | 1.204E-09 | 4.168E-10 | 1.113E-10 | 4.456E-13 | 1.649E-16 | 6.102E-20 | 2.210E-23 | 6.124E-26 | 8.178E-27 | 3.026E-30 | 0.000E+00 |
| tm170 | 5.324E-03 | 5.267E-03 | 5.141E-03 | 4.678E-03 | 3.592E-03 | 2.586E-03 | 6.541E-04 | 9.146E-05 | 1.279E-05 | 1.779E-06 | 4.106E-07 | 2.487E-07 | 3.477E-08 | 4.862E-09 |
| tm171 | 2.885E-03 | 2.879E-03 | 2.867E-03 | 2.817E-03 | 2.684E-03 | 2.527E-03 | 1.964E-03 | 1.369E-03 | 9.546E-04 | 6.648E-04 | 5.081E-04 | 4.635E-04 | 3.231E-04 | 2.252E-04 |
| total | 5.902E+04 | 5.868E+04 | 5.793E+04 | 5.520E+04 | 4.890E+04 | 4.292E+04 | 2.772E+04 | 1.687E+04 | 1.151E+04 | 8.706E+03 | 7.479E+03 | 7.163E+03 | 6.248E+03 | 5.662E+03 |

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5 more years for cooling used fuel material fission products page 34

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element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.049E+01 | 1.049E+01 | 1.048E+01 | 1.045E+01 | 1.037E+01 | 1.027E+01 | 9.878E+00 | 9.338E+00 | 8.828E+00 | 8.344E+00 | 8.001E+00 | 7.888E+00 | 7.456E+00 | 7.049E+00 |
| ga | 2.739E-17 | 2.725E-17 | 2.694E-17 | 2.576E-17 | 2.273E-17 | 1.944E-17 | 1.013E-17 | 3.981E-18 | 1.565E-18 | 6.135E-19 | 3.059E-19 | 2.411E-19 | 9.479E-20 | 3.726E-20 |
| ge | 5.241E-08 | 5.151E-08 | 4.954E-08 | 4.260E-08 | 2.790E-08 | 1.648E-08 | 1.824E-09 | 7.811E-11 | 3.345E-12 | 1.420E-13 | 1.357E-14 | 6.081E-15 | 2.605E-16 | 1.119E-17 |
| as | 5.864E-08 | 5.727E-08 | 5.438E-08 | 4.504E-08 | 2.827E-08 | 1.651E-08 | 1.824E-09 | 7.811E-11 | 3.345E-12 | 1.420E-13 | 1.357E-14 | 6.081E-15 | 2.604E-16 | 1.115E-17 |
| se | 1.237E-03 | 1.237E-03 | 1.237E-03 | 1.237E-03 | 1.237E-03 | 1.236E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 | 1.235E-03 |
| kr | 1.041E+02 | 1.040E+02 | 1.040E+02 | 1.036E+02 | 1.027E+02 | 1.016E+02 | 9.717E+01 | 9.111E+01 | 8.542E+01 | 8.008E+01 | 7.633E+01 | 7.509E+01 | 7.040E+01 | 6.601E+01 |
| rb | 3.907E-03 | 3.630E-03 | 3.077E-03 | 1.623E-03 | 2.797E-04 | 3.752E-05 | 1.099E-06 | 2.622E-07 | 2.189E-07 | 2.166E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 | 2.165E-07 |
| sr | 1.007E+03 | 9.993E+02 | 9.821E+02 | 9.241E+02 | 8.186E+02 | 7.548E+02 | 6.978E+02 | 6.798E+02 | 6.636E+02 | 6.478E+02 | 6.363E+02 | 6.324E+02 | 6.174E+02 | 6.027E+02 |
| y | 1.377E+03 | 1.361E+03 | 1.327E+03 | 1.212E+03 | 9.900E+02 | 8.437E+02 | 7.031E+02 | 6.801E+02 | 6.638E+02 | 6.480E+02 | 6.365E+02 | 6.326E+02 | 6.175E+02 | 6.029E+02 |
| zr | 1.538E+03 | 1.505E+03 | 1.434E+03 | 1.186E+03 | 6.979E+02 | 3.606E+02 | 2.284E+01 | 4.629E-01 | 3.261E-02 | 2.433E-02 | 2.418E-02 | 2.418E-02 | 2.417E-02 | 2.417E-02 |
| nb | 3.192E+03 | 3.128E+03 | 2.987E+03 | 2.494E+03 | 1.496E+03 | 7.837E+02 | 5.044E+01 | 1.007E+00 | 2.411E-02 | 5.954E-03 | 6.172E-03 | 6.350E-03 | 7.068E-03 | 7.762E-03 |
| mo | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.221E-09 | 6.220E-09 | 6.219E-09 | 6.218E-09 | 6.217E-09 | 6.216E-09 | 6.216E-09 | 6.215E-09 | 6.213E-09 |
| tc | 2.434E-01 | 2.434E-01 | 2.434E-01 | 2.434E-01 | 2.434E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 | 2.433E-01 |
| ru | 1.151E+04 | 1.145E+04 | 1.133E+04 | 1.088E+04 | 9.786E+03 | 8.668E+03 | 5.363E+03 | 2.716E+03 | 1.375E+03 | 6.950E+02 | 4.185E+02 | 3.519E+02 | 1.782E+02 | 9.023E+01 |
| rh | 1.151E+04 | 1.145E+04 | 1.133E+04 | 1.087E+04 | 9.785E+03 | 8.668E+03 | 5.363E+03 | 2.716E+03 | 1.375E+03 | 6.950E+02 | 4.186E+02 | 3.519E+02 | 1.782E+02 | 9.024E+01 |
| pd | 4.584E-03 | 4.584E-03 | 4.582E-03 | 4.579E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 | 4.576E-03 |
| ag | 1.052E+02 | 1.046E+02 | 1.033E+02 | 9.841E+01 | 8.590E+01 | 7.252E+01 | 3.574E+01 | 1.298E+01 | 4.714E+00 | 1.707E+00 | 8.028E-01 | 6.203E-01 | 2.254E-01 | 8.197E-02 |
| cd | 3.675E+01 | 3.569E+01 | 3.343E+01 | 2.600E+01 | 1.330E+01 | 6.456E-02 | 1.991E-02 | 1.645E-02 | 1.465E-02 | 1.337E-02 | 1.262E-02 | 1.239E-02 | 1.160E-02 | 1.093E-02 |
| in | 2.696E-04 | 2.620E-04 | 2.458E-04 | 1.917E-04 | 9.560E-05 | 4.025E-05 | 1.095E-05 | 4.477E-09 | 5.090E-11 | 1.972E-12 | 6.036E-13 | 4.809E-13 | 1.384E-13 | 3.228E-13 |
| sn | 1.490E+01 | 1.478E+01 | 1.451E+01 | 1.350E+01 | 1.111E+01 | 8.820E+00 | 3.988E+00 | 2.056E+00 | 1.526E+00 | 1.333E+00 | 1.264E+00 | 1.247E+00 | 1.201E+00 | 1.171E+00 |
| sb | 2.167E+02 | 2.164E+02 | 2.156E+02 | 2.129E+02 | 2.054E+02 | 1.967E+02 | 1.648E+02 | 1.282E+02 | 9.976E+01 | 7.755E+01 | 6.432E+01 | 6.033E+01 | 4.694E+01 | 3.652E+01 |
| te | 1.399E+02 | 1.384E+02 | 1.354E+02 | 1.245E+02 | 1.014E+02 | 8.212E+01 | 4.698E+01 | 3.205E+01 | 2.449E+01 | 1.899E+01 | 1.575E+01 | 1.477E+01 | 1.149E+01 | 8.940E+00 |
| i | 7.524E-04 | 7.498E-04 | 7.454E-04 | 7.380E-04 | 7.359E-04 | 7.358E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 | 7.357E-04 |
| xe | 4.870E-04 | 4.356E-04 | 3.395E-04 | 1.324E-04 | 1.462E-05 | 2.775E-06 | 2.021E-08 | 1.937E-11 | 1.856E-14 | 1.744E-17 | 9.820E-20 | 1.671E-20 | 1.601E-23 | 1.534E-26 |
| cs | 4.990E+03 | 4.984E+03 | 4.972E+03 | 4.922E+03 | 4.787E+03 | 4.627E+03 | 4.043E+03 | 3.403E+03 | 2.934E+03 | 2.586E+03 | 2.386E+03 | 2.327E+03 | 2.131E+03 | 1.980E+03 |
| ba | 1.895E+03 | 1.895E+03 | 1.894E+03 | 1.892E+03 | 1.886E+03 | 1.879E+03 | 1.849E+03 | 1.807E+03 | 1.766E+03 | 1.726E+03 | 1.696E+03 | 1.686E+03 | 1.648E+03 | 1.610E+03 |
| la | 6.057E-02 | 5.433E-02 | 4.254E-02 | 1.647E-02 | 1.146E-03 | 4.161E-05 | 3.042E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 | 3.041E-07 |
| ce | 9.395E+03 | 9.345E+03 | 9.232E+03 | 8.816E+03 | 7.781E+03 | 6.691E+03 | 3.594E+03 | 1.479E+03 | 6.084E+02 | 2.498E+02 | 1.289E+02 | 1.028E+02 | 4.229E+01 | 1.740E+01 |
| pr | 9.347E+03 | 9.302E+03 | 9.201E+03 | 8.817E+03 | 7.826E+03 | 6.747E+03 | 3.628E+03 | 1.493E+03 | 6.143E+02 | 2.521E+02 | 1.301E+02 | 1.038E+02 | 4.269E+01 | 1.757E+01 |
| nd | 2.466E-03 | 2.174E-03 | 1.636E-03 | 5.420E-04 | 2.458E-05 | 5.227E-07 | 1.930E-11 | 1.997E-11 | 2.027E-11 | 2.039E-11 | 2.043E-11 | 2.044E-11 | 2.046E-11 | 2.047E-11 |
| pm | 2.329E+03 | 2.325E+03 | 2.317E+03 | 2.284E+03 | 2.200E+03 | 2.102E+03 | 1.747E+03 | 1.341E+03 | 1.030E+03 | 7.905E+02 | 6.493E+02 | 6.071E+02 | 4.662E+02 | 3.580E+02 |
| sm | 8.901E+00 | 8.900E+00 | 8.899E+00 | 8.896E+00 | 8.887E+00 | 8.876E+00 | 8.828E+00 | 8.760E+00 | 8.693E+00 | 8.626E+00 | 8.577E+00 | 8.560E+00 | 8.495E+00 | 8.429E+00 |
| eu | 3.278E+02 | 3.276E+02 | 3.272E+02 | 3.256E+02 | 3.212E+02 | 3.159E+02 | 2.945E+02 | 2.667E+02 | 2.417E+02 | 2.192E+02 | 2.039E+02 | 1.989E+02 | 1.807E+02 | 1.643E+02 |
| gd | 1.412E-01 | 1.404E-01 | 1.386E-01 | 1.318E-01 | 1.144E-01 | 9.594E-02 | 4.599E-02 | 1.606E-02 | 5.605E-03 | 1.951E-03 | 8.905E-04 | 6.811E-04 | 2.378E-04 | 8.300E-05 |
| tb | 3.646E+00 | 3.577E+00 | 3.426E+00 | 2.897E+00 | 1.811E+00 | 1.009E+00 | 8.755E-02 | 2.664E-03 | 9.870E-05 | 2.109E-05 | 1.882E-05 | 1.870E-05 | 1.855E-05 | 1.848E-05 |
| dy | 2.415E-05 | 2.392E-05 | 2.341E-05 | 2.152E-05 | 1.701E-05 | 1.269E-05 | 3.732E-06 | 6.472E-07 | 1.122E-07 | 1.937E-08 | 5.249E-09 | 3.359E-09 | 5.825E-10 | 1.010E-10 |
| ho | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.710E-05 | 1.709E-05 | 1.708E-05 | 1.707E-05 | 1.706E-05 | 1.706E-05 | 1.705E-05 | 1.704E-05 | 1.703E-05 |
| er | 7.882E-10 | 6.800E-10 | 4.878E-10 | 1.341E-10 | 3.604E-12 | 3.996E-14 | 2.682E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 8.209E-03 | 8.146E-03 | 8.007E-03 | 7.495E-03 | 6.276E-03 | 5.113E-03 | 2.618E-03 | 1.461E-03 | 9.674E-04 | 6.666E-04 | 5.085E-04 | 4.637E-04 | 3.231E-04 | 2.252E-04 |
| yb | 2.024E-09 | 1.939E-09 | 1.759E-09 | 1.204E-09 | 4.168E-10 | 1.113E-10 | 4.456E-13 | 1.649E-16 | 6.102E-20 | 2.210E-23 | 6.124E-26 | 8.178E-27 | 3.026E-30 | 0.000E+00 |
| totals | 5.902E+04 | 5.868E+04 | 5.793E+04 | 5.520E+04 | 4.890E+04 | 4.292E+04 | 2.772E+04 | 1.687E+04 | 1.151E+04 | 8.706E+03 | 7.479E+03 | 7.163E+03 | 6.248E+03 | 5.662E+03 |

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5 more years for cooling used fuel material fission products page 35

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nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 3.538E-04 | 3.536E-04 | 3.534E-04 | 3.524E-04 | 3.498E-04 | 3.465E-04 | 3.332E-04 | 3.150E-04 | 2.977E-04 | 2.814E-04 | 2.699E-04 | 2.660E-04 | 2.515E-04 | 2.377E-04 |
| ga 68 | 2.746E-19 | 2.732E-19 | 2.701E-19 | 2.582E-19 | 2.278E-19 | 1.949E-19 | 1.015E-19 | 3.990E-20 | 1.568E-20 | 6.149E-21 | 3.066E-21 | 2.417E-21 | 9.501E-22 | 3.735E-22 |
| ge 71 | 2.613E-16 | 2.315E-16 | 1.762E-16 | 6.096E-17 | 3.123E-18 | 7.727E-20 | 1.486E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 2.055E-11 | 2.020E-11 | 1.943E-11 | 1.671E-11 | 1.094E-11 | 6.464E-12 | 7.154E-13 | 3.063E-14 | 1.312E-15 | 5.569E-17 | 5.322E-18 | 2.385E-18 | 1.021E-19 | 4.373E-21 |
| as 73 | 3.029E-12 | 2.977E-12 | 2.864E-12 | 2.463E-12 | 1.613E-12 | 9.528E-13 | 1.055E-13 | 4.516E-15 | 1.934E-16 | 8.209E-18 | 7.846E-19 | 3.515E-19 | 1.505E-20 | 6.446E-22 |
| as 74 | 3.787E-11 | 3.503E-11 | 2.939E-11 | 1.485E-11 | 2.196E-12 | 2.034E-13 | 9.738E-18 | 6.385E-24 | 4.187E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 5.010E-09 | 4.953E-09 | 4.825E-09 | 4.361E-09 | 3.284E-09 | 2.307E-09 | 5.276E-10 | 6.383E-11 | 7.723E-12 | 9.291E-13 | 1.925E-13 | 1.124E-13 | 1.360E-14 | 1.646E-15 |
| se 79 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 | 4.086E-07 |
| kr 81 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 | 8.851E-13 |
| kr 83m | 3.569E-09 | 3.513E-09 | 3

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sr 89 | 1.016E+00 | 9.888E-01 | 9.297E-01 | 7.312E-01 | 3.734E-01 | 1.617E-01 | 4.893E-03 | 3.274E-05 | 2.191E-07 | 1.446E-09 | 3.465E-11 | 9.676E-12 | 6.474E-14 | 4.332E-16 |
| y 89m | 1.522E-04 | 1.480E-04 | 1.392E-04 | 1.095E-04 | 5.590E-05 | 2.421E-05 | 7.325E-07 | 4.902E-09 | 3.280E-11 | 2.165E-13 | 5.188E-15 | 1.448E-15 | 9.692E-18 | 6.486E-20 |
| sr 90 | 8.292E-01 | 8.291E-01 | 8.288E-01 | 8.279E-01 | 8.252E-01 | 8.219E-01 | 2.082E-01 | 1.890E-01 | 7.702E-01 | 1.519E-01 | 7.385E-01 | 7.340E-01 | 7.165E-01 | 6.995E-01 |
| y 90 | 3.952E+00 | 3.952E+00 | 3.951E+00 | 3.946E+00 | 3.933E+00 | 3.917E+00 | 3.852E+00 | 3.761E+00 | 3.671E+00 | 3.584E+00 | 3.520E+00 | 3.499E+00 | 3.415E+00 | 3.334E+00 |
| y 91 | 2.379E+00 | 2.323E+00 | 2.203E+00 | 1.790E+00 | 1.002E+00 | 4.864E-01 | 2.371E-02 | 3.141E-04 | 4.161E-06 | 5.446E-08 | 2.171E-09 | 7.214E-10 | 9.556E-12 | 1.266E-13 |
| nb 91 | 8.936E-14 | 8.936E-14 | 8.936E-14 | 8.936E-14 | 8.934E-14 | 8.933E-14 | 8.926E-14 | 8.917E-14 | 8.908E-14 | 8.899E-14 | 8.892E-14 | 8.890E-14 | 8.881E-14 | 8.872E-14 |
| nb 91m | 2.172E-15 | 2.123E-15 | 2.017E-15 | 1.653E-15 | 9.459E-16 | 4.722E-16 | 2.587E-17 | 4.049E-19 | 6.339E-21 | 9.809E-23 | 4.428E-24 | 1.535E-24 | 2.403E-26 | 3.762E-28 |
| nb 92 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 | 1.281E-14 |
| nb 92m | 1.030E-16 | 8.983E-17 | 6.606E-17 | 2.000E-17 | 7.042E-19 | 1.093E-20 | 2.990E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 | 2.730E-06 |
| nb 93m | 3.721E-07 | 3.729E-07 | 3.749E-07 | 3.826E-07 | 4.039E-07 | 4.302E-07 | 5.385E-07 | 6.879E-07 | 8.310E-07 | 9.685E-07 | 1.067E-06 | 1.100E-06 | 1.226E-06 | 1.346E-06 |
| mo 93 | 5.953E-13 | 5.953E-13 | 5.953E-13 | 5.953E-13 | 5.953E-13 | 5.953E-13 | 5.952E-13 | 5.951E-13 | 5.950E-13 | 5.949E-13 | 5.948E-13 | 5.948E-13 | 5.947E-13 | 5.946E-13 |
| nb 94 | 9.247E-08 | 9.247E-08 | 9.247E-08 | 9.247E-08 | 9.247E-08 | 9.247E-08 | 9.246E-08 | 9.246E-08 | 9.246E-08 | 9.246E-08 | 9.245E-08 | 9.245E-08 | 9.245E-08 | 9.245E-08 |
| zr 95 | 7.751E+00 | 7.585E+00 | 7.224E+00 | 5.977E+00 | 3.517E+00 | 1.817E+00 | 1.150E-01 | 2.211E-03 | 4.252E-05 | 8.090E-07 | 4.258E-08 | 1.556E-08 | 2.992E-10 | 5.755E-12 |
| nb 95 | 1.522E+01 | 1.492E+01 | 1.425E+01 | 1.190E+01 | 7.133E+00 | 3.738E+00 | 2.406E-01 | 4.786E-03 | 9.216E-05 | 1.753E-06 | 8.955E-08 | 3.267E-08 | 6.478E-10 | 1.247E-11 |
| nb 95m | 2.602E-02 | 2.546E-02 | 2.425E-02 | 2.007E-02 | 1.181E-02 | 6.101E-03 | 3.860E-04 | 7.423E-06 | 1.428E-07 | 2.716E-09 | 1.430E-10 | 5.224E-11 | 1.005E-12 | 1.932E-14 |
| tc 95 | 8.295E-16 | 8.109E-16 | 7.704E-16 | 6.315E-16 | 3.619E-16 | 1.809E-16 | 9.980E-18 | 1.577E-19 | 2.492E-21 | 3.894E-23 | 1.770E-24 | 6.154E-25 | 9.725E-27 | 0.000E+00 |
| tc 95m | 1.846E-14 | 1.805E-14 | 1.715E-14 | 1.406E-14 | 8.054E-15 | 4.027E-15 | 2.221E-16 | 3.510E-18 | 5.547E-20 | 8.667E-22 | 3.941E-23 | 1.370E-23 | 2.164E-25 | 3.420E-27 |
| zr 96 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 | 2.380E-17 |
| tc 97 | 1.404E-14 | 1.404E-14 | 1.405E-14 | 1.406E-14 | 1.410E-14 | 1.413E-14 | 1.417E-14 | 1.418E-14 | 1.418E-14 | 1.418E-14 | 1.418E-14 | 1.418E-14 | 1.418E-14 | 1.418E-14 |
| tc 97m | 1.300E-08 | 1.280E-08 | 1.237E-08 | 1.083E-08 | 7.455E-09 | 4.685E-09 | 6.716E-10 | 4.166E-11 | 2.584E-12 | 1.590E-13 | 2.003E-14 | 9.864E-15 | 6.118E-16 | 3.795E-17 |
| tc 98 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 | 1.242E-09 |
| tc 99 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 | 7.962E-05 |
| rh 99 | 2.015E-18 | 1.849E-18 | 1.524E-18 | 7.172E-19 | 8.699E-20 | 6.293E-21 | 1.074E-25 | 1.608E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 | 7.932E-17 |
| rh101 | 1.665E-08 | 1.663E-08 | 1.659E-08 | 1.642E-08 | 1.597E-08 | 1.541E-08 | 1.331E-08 | 1.079E-08 | 8.748E-09 | 7.088E-09 | 6.062E-09 | 5.746E-09 | 4.658E-09 | 3.776E-09 |
| rh102 | 3.179E-04 | 3.158E-04 | 3.111E-04 | 2.934E-04 | 2.491E-04 | 2.032E-04 | 8.674E-05 | 2.573E-05 | 7.702E-06 | 2.356E-06 | 1.015E-06 | 7.710E-07 | 2.904E-07 | 1.379E-07 |
| rh102m | 3.524E-04 | 3.520E-04 | 3.512E-04 | 3.481E-04 | 3.396E-04 | 3.292E-04 | 2.893E-04 | 2.404E-04 | 1.998E-04 | 1.659E-04 | 1.445E-04 | 1.379E-04 | 1.146E-04 | 9.522E-05 |
| ru103 | 1.449E+00 | 1.398E+00 | 1.292E+00 | 9.482E-01 | 3.991E-01 | 1.359E-01 | 1.504E-03 | 2.386E-06 | 3.785E-09 | 5.898E-12 | 4.835E-14 | 9.356E-15 | 1.484E-17 | 2.354E-20 |
| rh103m | 9.918E-02 | 9.574E-02 | 8.843E-02 | 6.492E-02 | 2.732E-02 | 9.303E-03 | 1.030E-04 | 1.633E-07 | 2.591E-10 | 4.038E-13 | 3.310E-15 | 6.406E-16 | 1.016E-18 | 1.612E-21 |
| pd103 | 1.042E-09 | 9.605E-10 | 7.994E-10 | 3.915E-10 | 5.304E-11 | 4.404E-12 | 1.336E-16 | 4.562E-23 | 1.557E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 1.626E-14 | 1.572E-14 | 1.458E-14 | 1.087E-14 | 4.774E-15 | 1.715E-15 | 2.372E-17 | 5.117E-19 | 1.129E-22 | 2.424E-25 | 2.520E-27 | 5.289E-28 | 1.154E-30 | 2.519E-33 |
| ru106 | 6.585E-01 | 6.561E-01 | 6.506E-01 | 6.297E-01 | 5.747E-01 | 5.129E-01 | 2.188E-01 | 1.615E-01 | 8.175E-02 | 4.132E-02 | 2.488E-02 | 2.092E-02 | 1.059E-02 | 5.365E-03 |
| rh106 | 1.063E+02 | 1.059E+02 | 1.050E+02 | 1.017E+02 | 9.280E+01 | 8.282E+01 | 5.148E+01 | 2.607E+01 | 1.320E+01 | 6.672E+00 | 4.018E+00 | 3.378E+00 | 1.711E+00 | 8.662E-01 |

1

5 more years for cooling used fuel material fission products page 36

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag106m | 1.676E-18 | 1.418E-18 | 9.726E-19 | 2.247E-19 | 3.717E-21 | 2.251E-23 | 1.207E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 | 2.677E-07 |
| ag108 | 2.558E-08 | 2.558E-08 | 2.558E-08 | 2.558E-08 | 2.557E-08 | 2.556E-08 | 2.554E-08 | 2.550E-08 | 2.546E-08 | 2.542E-08 | 2.539E-08 | 2.538E-08 | 2.534E-08 | 2.530E-08 |
| ag108m | 7.680E-07 | 7.680E-07 | 7.680E-07 | 7.679E-07 | 7.677E-07 | 7.675E-07 | 7.667E-07 | 7.655E-07 | 7.643E-07 | 7.631E-07 | 7.622E-07 | 7.619E-07 | 7.607E-07 | 7.594E-07 |
| ag109m | 4.304E-06 | 4.292E-06 | 4.263E-06 | 4.152E-06 | 3.857E-06 | 3.520E-06 | 2.399E-06 | 1.387E-06 | 8.013E-07 | 4.624E-07 | 3.073E-07 | 2.672E-07 | 1.544E-07 | 8.924E-08 |
| cd109 | 1.044E-06 | 1.041E-06 | 1.034E-06 | 1.007E-06 | 9.353E-07 | 8.534E-07 | 5.818E-07 | 3.362E-07 | 1.943E-07 | 1.121E-07 | 7.451E-08 | 6.479E-08 | 3.744E-08 | 2.164E-08 |
| ag110 | 1.011E-02 | 1.006E-02 | 9.930E-03 | 9.460E-03 | 8.257E-03 | 6.971E-03 | 3.435E-03 | 1.247E-03 | 4.530E-04 | 1.640E-04 | 7.711E-05 | 5.957E-05 | 2.163E-05 | 7.855E-06 |
| ag110m | 1.744E+00 | 1.734E+00 | 1.712E+00 | 1.631E+00 | 1.424E+00 | 1.202E+00 | 5.924E-01 | 2.151E-01 | 7.812E-02 | 2.829E-02 | 1.330E-02 | 1.027E-02 | 3.730E-03 | 1.355E-03 |
| ag111 | 7.150E-10 | 5.936E-10 | 3.905E-10 | 7.665E-11 | 8.028E-13 | 2.753E-15 | 1.368E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 | 1.017E-18 |
| cd113m | 1.677E-05 | 1.676E-05 | 1.675E-05 | 1.671E-05 | 1.660E-05 | 1.647E-05 | 1.591E-05 | 1.515E-05 | 1.442E-05 | 1.373E-05 | 1.324E-05 | 1.307E-05 | 1.244E-05 | 1.185E-05 |
| in113m | 2.543E-11 | 2.512E-11 | 2.445E-11 | 2.201E-11 | 1.638E-11 | 1.135E-11 | 2.442E-12 | 2.711E-13 | 3.009E-14 | 3.320E-15 | 6.451E-16 | 3.685E-16 | 4.090E-17 | 4.539E-18 |
| sn113 | 1.931E-12 | 1.908E-12 | 1.857E-12 | 1.671E-12 | 1.244E-12 | 8.615E-13 | 1.855E-13 | 2.059E-14 | 2.285E-15 | 2.521E-16 | 4.899E-17 | 2.798E-17 | 3.105E-18 | 3.447E-19 |
| in114 | 5.271E-07 | 5.126E-07 | 4.813E-07 | 3.767E-07 | 1.897E-07 | 8.075E-08 | 2.274E-09 | 1.372E-11 | 8.282E-14 | 4.929E-16 | 1.094E-17 | 2.975E-18 | 1.796E-20 | 1.084E-22 |
| in114m | 1.564E-07 | 1.521E-07 | 1.428E-07 | 1.118E-07 | 5.628E-08 | 2.396E-08 | 6.745E-10 | 4.071E-12 | 2.457E-14 | 1.462E-16 | 3.245E-18 | 8.826E-19 | 5.327E-21 | 3.215E-23 |
| cd115m | 1.299E-03 | 1.260E-03 | 1.174E-03 | 8.945E-04 | 4.174E-04 | 1.616E-04 | 3.060E-06 | 1.047E-08 | 3.582E-11 | 1.207E-13 | 1.754E-15 | 4.128E-16 | 1.412E-18 | 4.832E-21 |
| in115 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 | 2.928E-16 |
| in115m | 7.242E-08 | 7.025E-08 | 6.546E-08 | 4.986E-08 | 2.327E-08 | 9.008E-09 | 1.706E-10 | 5.836E-13 | 1.997E-15 | 6.725E-18 | 9.776E-20 | 2.301E-20 | 7.872E-23 | 2.693E-25 |
| cd116 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 | 1.353E-19 |
| sn117m | 1.976E-08 | 1.785E-08 | 1.419E-08 | 5.815E-09 | 4.786E-10 | 2.137E-11 | 4.846E-17 | 4.039E-25 | 3.365E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 1.934E-03 | 1.925E-03 | 1.905E-03 | 1.828E-03 | 1.628E-03 | 1.409E-03 | 7.707E-04 | 3.250E-04 | 1.371E-04 | 5.766E-05 | 3.030E-05 | 2.431E-05 | 1.025E-05 | 4.324E-06 |
| sb120m | 5.405E-18 | 4.249E-18 | 2.472E-18 | 3.010E-19 | 8.272E-22 | 5.366E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 3.874E-04 | 3.874E-04 | 3.873E-04 | 3.870E-04 | 3.862E-04 | 3.852E-04 | 3.809E-04 | 3.750E-04 | 3.691E-04 | 3.633E-04 | 3.591E-04 | 3.576E-04 | 3.520E-04 | 3.465E-04 |
| sn121m | 1.637E-04 | 1.637E-04 | 1.637E-04 | 1.636E-04 | 1.632E-04 | 1.628E-04 | 1.610E-04 | 1.585E-04 | 1.560E-04 | 1.535E-04 | 1.518E-04 | 1.511E-04 | 1.488E-04 | 1.464E-04 |
| te121 | 1.087E-07 | 1.078E-07 | 1.058E-07 | 9.822E-08 | 7.985E-08 | 6.172E-08 | 2.104E-08 | 4.506E-09 | 9.651E-10 | 2.059E-10 | 6.531E-11 | 4.410E-11 | 9.446E-12 | 2.023E-12 |
| te121m | 5.445E-08 | 5.399E-08 | 5.297E-08 | 4.920E-08 | 4.001E-08 | 3.092E-08 | 1.054E-08 | 2.258E-09 | 4.836E-10 | 1.032E-10 | 3.272E-11 | 2.210E-11 | 4.733E-12 | 1.014E-12 |
| sn123 | 3.104E-02 | 3.071E-02 | 2.998E-02 | 2.729E-02 | 2.098E-02 | 1.513E-02 | 3.851E-03 | 5.435E-04 | 7.669E-05 | 1.076E-05 | 2.502E-06 | 1.519E-06 | 2.143E-07 | 3.024E-08 |
| te123m | 1.014E-04 | 1.002E-04 | 9.765E-05 | 8.820E-05 | 6.633E-05 | 4.652E-05 | 1.056E-05 | 1.264E-06 | 1.514E-07 | 1.802E-08 | 3.706E-09 | 2.158E-09 | 2.584E-10 | 3.094E-11 |
| sb124 | 1.711E-02 | 1.672E-02 | 1.587E-02 | 1.298E-02 | 7.381E-03 | 3.657E-03 | 1.941E-04 | 2.902E-06 | 4.341E-08 | 6.417E-10 | 2.800E-11 | 9.597E-12 | 1.435E-13 | 2.147E-15 |
| sn125 | 4.211E-08 | 3.647E-08 | 2.639E-08 | 7.498E-09 | 2.212E-10 | 2.754E-12 | 2.999E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 6.812E-01 | 6.803E-01 | 6.781E-01 | 6.700E-01 | 6.478E-01 | 6.212E-01 | 5.212E-01 | 4.055E-01 | 3.155E-01 | 2.452E-01 | 2.034E-01 | 1.908E-01 | 1.484E-01 | 1.155E-01 |
| te125m | 4.521E-02 | 4.515E-02 | 4.502E-02 | 4.453E-02 | 4.314E-02 | 4.142E-02 | 3.480E-02 | 2.707E-02 | 2.106E-02 | 1.637E-02 | 1.358E-02 | 1.274E-02 | 9.909E-03 | 7.708E-03 |
| i125 | 1.200E-10 | 1.172E-10 | 1.112E-10 | 9.070E-11 | 5.120E-11 | 2.513E-11 | 1.282E-12 | 1.811E-14 | 2.560E-16 | 3.576E-18 | 1.496E-19 | 5.054E-20 | 7.142E-22 | 1.009E-23 |
| sn126 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 | 7.326E-06 |
| sb126 | 1.987E-05 | 1.986E-05 | 1.980E-05 | 1.964E-05 | 1.954E-05 | 1.954E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 | 1.953E-05 |
| sb126m | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 | 9.825E-05 |
| i126 | 2.528E-10 | 2.271E-10 | 1.784E-10 | 6.983E-11 | 5.049E-12 | 1.919E-13 | 7.054E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 1.860E-18 | 1.297E-18 | 5.771E-19 | 2.471E-20 | 3.644E-24 | 6.194E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 5.285E-02 | 5.218E-02 | 5.073E-02 | 4.537E-02 | 3.322E-02 | 2.254E-02 | 4.454E-03 | 4.372E-04 | 4.292E-05 | 4.186E-06 | 7.424E-07 | 4.109E-07 | 4.034E-08 | 3.960E-09 |
| te127m | 2.168E-02 | 2.140E-02 | 2.080E-02 | 1.861E-02 | 1.363E-02 | 9.245E-03 | 1.827E-03 | 1.793E-04 | 1.760E-05 | 1.717E-06 | 3.045E-07 | 1.685E-07 | 1.655E-08 | 1.624E-09 |
| xe127 | 6.176E-08 | 5.945E-08 | 5.457E-08 | 3.910E-08 | 1.538E-08 | 4.814E-09 | 3.747E-11 | 3.590E-14 | 3.439E-17 | 3.233E-20 | 1.820E-22 | 3.097E-23 | 2.968E-26 | 2.843E-29 |
| te128 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 | 1.934E-18 |
| te129 | 1.234E-02 | 1.184E-02 | 1.079E-02 | 7.523E-03 | 2.738E-03 | 7.778E-04 | 4.039E-06 | 2.168E-09 | 1.164E-12 | 6.121E-16 | 2.238E-18 | 3.286E-19 | 1.764E-22 | 9.471E-26 |
| te129m | 9.930E-03 | 9.528E-03 | 8.684E-03 | 6.052E-03 | 2.202E-03 | 6.257E-04 | 3.249E-06 | 1.744E-09 | 9.364E-13 | 4.925E-16 | 1.801E-18 | 2.644E-19 | 1.419E-22 | 7.620E-26 |
| i129 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 | 3.242E-07 |
| xe129m | 4.142E-12 | 3.543E-12 | 2.494E-12 | 6.362E-13 | 1.388E-14 | 1.187E-16 | 2.692E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 5.557E-08 | 4.676E-08 | 3.170E-08 | 6.992E-09 | 1.015E-10 | 5.229E-13 | 1.423E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 4.381E-07 | 3.897E-07 | 2.995E-07 | 1.075E-07 | 6.108E-09 | 1.718E-10 | 5.644E-17 | 2.961E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.565E-15 | 2.224E-15 | 1.612E-15 | 4.621E-16 | 1.401E-17 | 1.823E-19 | 3.761E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 7.270E-17 | 6.444E-17 | 4.913E-17 | 1.711E-17 | 8.925E-19 | 2.258E-20 | 4.773E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.909E-14 | 1.542E-14 | 9.526E-15 | 1.465E-15 | 7.755E-18 | 1.137E-20 | 1.620E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe133 | 6.568E-13 | 5.042E-13 | 2.781E-13 | 2.751E-14 | 4.227E-17 | 1.330E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 37

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba133 | 2.196E-06 | 2.195E-06 | 2.194E-06 | 2.187E-06 | 2.167E-06 | 2.144E-06 | 2.047E-06 | 1.917E-06 | 1.795E-06 | 1.680E-06 | 1.599E-06 | 1.573E-06 | 1.472E-06 | 1.379E-06 |
| cs134 | 3.045E+01 | 3.039E+01 | 3.027E+01 | 2.978E+01 | 2.847E+01 | 2.692E+01 | 2.130E+01 | 1.523E+01 | 1.089E+01 | 7.779E+00 | 5.562E+00 | 3.977E+00 | 2.844E+00 | 2.034E+00 |
| cs135 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 | 5.293E-06 |
| cs136 | 4.559E-05 | 4.103E-05 | 3.237E-05 | 1.288E-05 | 9.750E-07 | 3.923E-08 | 5.762E-14 | 2.578E-22 | 1.153E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 4.996E-06 | 4.497E-06 | 3.548E-06 | 1.411E-06 | 1.069E-07 | 4.300E-09 | 6.315E-15 | 2.825E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.129E+00 | 2.128E+00 | 2.128E+00 | 2.125E+00 | 2.119E+00 | 2.111E+00 | 2.077E+00 | 2.030E+00 | 1.984E+00 | 1.938E+00 | 1.905E+00 | 1.894E+00 | 1.851E+00 | 1.809E+00 |
| ba137m | 7.430E+00 | 7.429E+00 | 7.426E+00 | 7.418E+00 | 7.395E+00 | 7.367E+00 | 7.249E+00 | 7.084E+00 | 6.923E+00 | 6.765E+00 | 6.650E+00 | 6.611E+00 | 6.461E+00 | 6.313E+00 |
| la137 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 | 5.802E-11 |
| la138 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 |
| ce139 | 1.918E-04 | 1.899E-04 | 1.856E-04 | 1.700E-04 | 1.328E-04 | 9.767E-05 | 2.704E-05 | 4.303E-06 | 6.847E-07 | 1.084E-07 | 2.755E-08 | 1.725E-08 | 2.744E-09 | 4.366E-10 |
| ba140 | 1.560E-04 | 1.400E-04 | 1.096E-04 | 4.233E-05 | 2.951E-06 | 1.072E-07 | 1.025E-13 | 2.484E-22 | 6.017E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.021E-03 | 9.159E-04 | 7.172E-04 | 2.776E-04 | 1.932E-05 | 7.015E-07 | 6.711E-13 | 1.626E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 2.000E-01 | 1.916E-01 | 1.741E-01 | 1.199E-01 | 4.217E-02 | 1.148E-02 | 4.998E-05 | 2.083E-08 | 8.685E-12 | 3.544E-15 | 1.073E-17 | 1.478E-18 | 6.159E-22 | 2.568E-25 |
| pr143 | 1.900E-04 | 1.715E-04 | 1.363E-04 | 5.576E-05 | 4.563E-06 | 2.023E-07 | 4.459E-13 | 3.566E-21 | 2.852E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.693E-13 | 1.684E-13 | 1.664E-13 | 1.590E-13 | 1.399E-13 | 1.192E-13 | 6.120E-14 | 2.356E-14 | 9.068E-15 | 3.481E-15 | 1.709E-15 | 1.340E-15 | 5.158E-16 | 1.985E-16 |
| ce144 | 6.069E-02 | 6.040E-02 | 5.974E-02 | 5.725E-02 | 5.082E-02 | 4.381E-02 | 2.356E-02 | 9.693E-03 | 3.989E-03 | 1.641E-03 | 8.447E-02 | 6.737E-02 | 2.772E-02 | 1.141E-02 |
| pr144 | 6.791E+01 | 6.758E+01 | 6.685E+01 | 6.406E+01 | 5.686E+01 | 4.902E+01 | 2.636E+01 | 1.085E+01 | 4.463E+00 | 1.832E+00 | 9.452E-01 | 7.538E-01 | 3.102E-01 | 1.276E-01 |
| pr144m | 3.064E-02 | 3.049E-02 | 3.016E-02 | 2.890E-02 | 2.565E-02 | 2.211E-02 | 1.189E-02 | 4.893E-03 | 2.013E-03 | 8.264E-04 | 4.264E-04 | 3.401E-04 | 1.399E-04 | 5.758E-05 |
| nd144 | 1.954E-13 | 1.956E-13 | 1.960E-13 | 1.974E-13 | 2.012E-13 | 2.053E-13 | 2.172E-13 | 2.253E-13 | 2.287E-13 | 2.301E-13 | 2.305E-13 | 2.306E-13 | 2.308E-13 | 2.309E-13 |
| pm144 | 1.784E-10 | 1.777E-10 | 1.762E-10 | 1.704E-10 | 1.552E-10 | 1.381E-10 | 8.487E-11 | 4.227E-11 | 2.106E-11 | 1.047E-11 | 6.227E-12 | 5.214E-12 | 2.597E-12 | 1.294E-12 |
| pm145 | 1.940E-08 | 1.940E-08 | 1.939E-08 | 1.936E-08 | 1.927E-08 | 1.916E-08 | 1.870E-08 | 1.802E-08 | 1.735E-08 | 1.669E-08 | 1.622E-08 | 1.606E-08 | 1.544E-08 | 1.485E-08 |
| sm145 | 6.815E-09 | 6.788E-09 | 6.726E-09 | 6.490E-09 | 5.873E-09 | 5.186E-09 | 3.084E-09 | 1.465E-09 | 6.962E-10 | 3.301E-10 | 1.896E-10 | 1.569E-10 | 7.453E-11 | 3.541E-11 |
| pm146 | 1.216E-05 | 1.215E-05 | 1.214E-05 | 1.206E-05 | 1.186E-05 | 1.162E-05 | 1.064E-05 | 9.390E-06 | 8.284E-06 | 7.306E-06 | 6.655E-06 | 6.446E-06 | 5.687E-06 | 5.018E-06 |
| sm146 | 1.698E-11 | 1.698E-11 | 1.699E-11 | 1.700E-11 | 1.701E-11 | 1.702E-11 | 1.704E-11 | 1.713E-11 | 1.719E-11 | 1.725E-11 | 1.728E-11 | 1.729E-11 | 1.733E-11 | 1.737E-11 |
| nd147 | 6.026E-06 | 5.311E-06 | 3.998E-06 | 1.324E-06 | 6.007E-08 | 1.277E-09 | 1.303E-16 | 1.282E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 8.476E-01 | 8.464E-01 | 8.436E-01 | 8.330E-01 | 8.040E-01 | 7.693E-01 | 6.397E-01 | 4.913E-01 | 3.773E-01 | 2.895E-01 | 2.378E-01 | 2.223E-01 | 1.707E-01 | 1.311E-01 |
| sm147 | 5.032E-10 | 5.043E-10 | 5.069E-10 | 5.167E-10 | 5.435E-10 | 5.756E-10 | 6.955E-10 | 8.328E-10 | 9.382E-10 | 1.019E-09 | 1.067E-09 | 1.081E-09 | 1.129E-09 | 1.166E-09 |
| eu147 | 8.598E-18 | 8.118E-18 | 7.132E-18 | 4.312E-18 | 1.053E-18 | 1.822E-19 | 1.190E-22 | 3.283E-27 | 9.058E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 5.236E-03 | 5.063E-03 | 4.695E-03 | 3.500E-03 | 1.537E-03 | 5.528E-04 | 7.637E-06 | 1.667E-08 | 3.637E-11 | 7.805E-14 | 8.115E-16 | 1.703E-16 | 3.717E-19 | 8.111E-22 |
| pm148m | 1.797E-01 | 1.738E-01 | 1.611E-01 | 1.201E-01 | 5.276E-02 | 1.895E-02 | 2.621E-04 | 5.719E-07 | 1.248E-09 | 2.678E-12 | 2.785E-14 | 5.845E-15 | 1.275E-17 | 2.783E-20 |
| sm148 | 1.159E-14 | 1.159E-14 | 1.159E-14 | 1.159E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.

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     ho166m  1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.761E-07 1.760E-07 1.759E-07 1.758E-07 1.757E-07 1.757E-07 1.756E-07 1.755E-07
     tm167   2.655E-19 2.285E-19 1.631E-19 4.395E-20 1.118E-21 1.157E-23 5.813E-32 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
     tm168   1.101E-09 1.085E-09 1.049E-09 9.209E-10 6.394E-10 4.060E-10 6.081E-11 4.016E-12 2.652E-13 1.738E-14 2.294E-15 1.148E-15 7.582E-17 5.007E-18
     er169   4.799E-13 4.140E-13 2.970E-13 8.163E-14 2.194E-15 2.433E-17 1.633E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
     yb169   5.161E-12 4.943E-12 4.484E-12 3.070E-12 1.063E-12 2.837E-13 1.136E-15 4.204E-19 1.556E-22 5.634E-26 1.561E-28 2.085E-29 7.716E-33 0.000E+00
1
     5 more years for cooling used fuel material                                                    fission products         page   38
0                                                 nuclide thermal power, watts
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     tm170   1.048E-05 1.037E-05 1.012E-05 9.207E-06 7.070E-06 5.089E-06 1.287E-06 1.800E-07 2.517E-08 3.501E-09 8.081E-10 4.895E-10 6.844E-11 9.570E-12
     tm171   4.455E-07 4.446E-07 4.426E-07 4.350E-07 4.144E-07 3.902E-07 3.033E-07 2.114E-07 1.474E-07 1.026E-07 7.845E-08 7.156E-08 4.989E-08 3.478E-08
   total     2.599E+02 2.584E+02 2.552E+02 2.435E+02 2.159E+02 1.892E+02 1.201E+02 7.001E+01 4.494E+01 3.174E+01 2.595E+01 2.446E+01 2.020E+01 1.754E+01
1
     5 more years for cooling used fuel material                                                    fission products         page   39
0                                                 element thermal power, watts
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
       h     3.538E-04 3.536E-04 3.534E-04 3.524E-04 3.498E-04 3.465E-04 3.332E-04 3.150E-04 2.977E-04 2.814E-04 2.699E-04 2.660E-04 2.515E-04 2.377E-04
      ga     2.746E-19 2.732E-19 2.701E-19 2.582E-19 2.278E-19 1.949E-19 1.015E-19 3.990E-20 1.568E-20 6.149E-21 3.066E-21 2.417E-21 9.501E-22 3.735E-22
      ge     2.055E-11 2.020E-11 1.943E-11 1.671E-11 1.094E-11 6.464E-12 7.154E-13 3.063E-14 1.312E-15 5.569E-17 5.322E-18 2.385E-18 1.021E-19 4.375E-21
      as     4.090E-11 3.801E-11 3.225E-11 1.731E-11 3.809E-12 1.156E-12 1.055E-13 4.516E-15 1.934E-16 8.209E-18 7.846E-19 3.515E-19 1.505E-20 6.446E-22
      se     4.136E-07 4.135E-07 4.134E-07 4.129E-07 4.119E-07 4.109E-07 4.091E-07 4.086E-07 4.086E-07 4.086E-07 4.086E-07 4.086E-07 4.086E-07 4.086E-07
      kr     1.560E-01 1.559E-01 1.558E-01 1.553E-01 1.540E-01 1.523E-01 1.456E-01 1.365E-01 1.280E-01 1.200E-01 1.144E-01 1.125E-01 1.055E-01 9.893E-02
      rb     1.775E-05 1.649E-05 1.399E-05 7.385E-06 1.274E-06 1.661E-07 2.791E-09 2.402E-10 1.120E-10 1.052E-10 1.049E-10 1.049E-10 1.049E-10 1.049E-10
      sr     1.846E+00 1.818E+00 1.758E+00 1.559E+00 1.199E+00 9.836E-01 8.131E-01 7.890E-01 7.702E-01 7.519E-01 7.385E-01 7.340E-01 7.165E-01 6.995E-01
       y     6.331E+00 6.275E+00 6.153E+00 5.736E+00 4.935E+00 4.404E+00 3.876E+00 3.761E+00 3.671E+00 3.584E+00 3.520E+00 3.499E+00 3.415E+00 3.334E+00
      zr     7.751E+00 7.585E+00 7.224E+00 5.977E+00 3.517E+00 1.817E+00 1.150E-01 2.214E-03 4.525E-05 3.539E-06 2.773E-06 2.746E-06 2.730E-06 2.730E-06
      nb     1.525E+01 1.494E+01 1.427E+01 1.192E+01 7.145E+00 3.745E+00 2.410E-01 4.794E-03 9.323E-05 2.817E-06 1.249E-06 1.225E-06 1.319E-06 1.439E-06
      mo     5.954E-13 5.954E-13 5.954E-13 5.954E-13 5.954E-13 5.953E-13 5.953E-13 5.952E-13 5.951E-13 5.950E-13 5.949E-13 5.948E-13 5.947E-13 5.946E-13
      tc     7.964E-05 7.964E-05 7.964E-05 7.964E-05 7.963E-05 7.963E-05 7.963E-05 7.963E-05 7.963E-05 7.963E-05 7.962E-05 7.962E-05 7.962E-05 7.962E-05
      ru     2.107E+00 2.054E+00 1.942E+00 1.578E+00 9.738E-01 6.488E-01 3.204E-01 1.615E-01 8.175E-02 4.132E-02 2.488E-02 2.092E-02 1.059E-02 5.365E-03
      rh     1.064E+02 1.060E+02 1.051E+02 1.017E+02 9.283E+01 8.283E+01 5.148E+01 2.607E+01 1.320E+01 6.672E+00 4.018E+00 3.378E+00 1.711E+00 8.663E-01
      pd     2.687E-07 2.687E-07 2.685E-07 2.681E-07 2.678E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07 2.677E-07
      ag     1.754E+00 1.744E+00 1.722E+00 1.641E+00 1.432E+00 1.209E+00 5.958E-01 2.164E-01 7.857E-02 2.845E-02 1.338E-02 1.033E-02 3.753E-03 1.363E-03
      cd     1.317E-03 1.277E-03 1.192E-03 9.122E-04 4.349E-04 1.789E-04 1.955E-05 1.550E-05 1.462E-05 1.384E-05 1.331E-05 1.314E-05 1.248E-05 1.187E-05
      in     7.560E-07 7.349E-07 6.895E-07 5.383E-07 2.693E-07 1.137E-07 3.121E-09 1.865E-11 1.398E-13 4.258E-15 9.523E-16 6.652E-16 3.338E-16 2.974E-16
      sn     3.354E-02 3.320E-02 3.244E-02 2.968E-02 2.317E-02 1.709E-02 5.171E-03 1.409E-03 7.462E-04 5.926E-04 5.509E-04 5.419E-04 5.186E-04 5.046E-04
      sb     6.984E-01 6.971E-01 6.941E-01 6.831E-01 6.553E-01 6.250E-01 5.216E-01 4.056E-01 3.156E-01 2.454E-01 2.035E-01 1.909E-01 1.485E-01 1.156E-01
      te     1.421E-01 1.402E-01 1.361E-01 1.222E-01 9.499E-02 7.465E-02 4.110E-02 2.769E-02 2.112E-02 1.638E-02 1.358E-02 1.274E-02 9.909E-03 7.708E-03
       i     3.801E-07 3.713E-07 3.562E-07 3.313E-07 3.243E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07 3.242E-07
      xe     4.999E-07 4.492E-07 3.541E-07 1.466E-07 2.149E-08 4.986E-09 3.747E-11 3.590E-14 3.439E-17 3.233E-20 1.820E-22 3.097E-23 2.968E-26 2.843E-29
      cs     3.258E+01 3.252E+01 3.240E+01 3.191E+01 3.059E+01 2.903E+01 2.337E+01 1.726E+01 1.287E+01 9.717E+00 7.964E+00 7.456E+00 5.828E+00 4.653E+00
      ba     7.430E+00 7.429E+00 7.427E+00 7.418E+00 7.395E+00 7.367E+00 7.249E+00 7.084E+00 6.923E+00 6.765E+00 6.650E+00 6.611E+00 6.461E+00 6.313E+00
      la     1.021E-03 9.159E-04 7.172E-04 2.776E-04 1.932E-05 7.015E-07 5.877E-11 5.810E-11 5.810E-11 5.810E-11 5.809E-11 5.809E-11 5.809E-11 5.809E-11
      ce     6.270E+00 6.232E+00 6.148E+00 5.845E+00 5.124E+00 4.392E+00 2.356E+00 9.693E-01 3.989E-01 1.637E-01 8.447E-02 6.737E-02 2.772E-02 1.141E-02
      pr     6.794E+01 6.761E+01 6.688E+01 6.409E+01 5.689E+01 4.904E+01 2.637E+01 1.085E+01 4.465E+00 1.833E+00 9.456E-01 7.542E-01 3.103E-01 1.277E-01
      nd     6.026E-06 5.311E-06 3.998E-06 1.324E-06 6.007E-08 1.277E-09 2.173E-13 2.253E-13 2.287E-13 2.301E-13 2.305E-13 2.306E-13 2.309E-13 2.310E-13
      pm     1.033E+00 1.025E+00 1.009E+00 9.566E-01 8.583E-01 7.888E-01 6.400E-01 4.913E-01 3.773E-01 2.895E-01 2.378E-01 2.223E-01 1.707E-01 1.311E-01
      sm     1.046E-03 1.046E-03 1.045E-03 1.045E-03 1.044E-03 1.043E-03 1.037E-03 1.029E-03 1.021E-03 1.013E-03 1.008E-03 1.006E-03 9.978E-04 9.902E-04
      eu     2.109E+00 2.108E+00 2.105E+00 2.097E+00 2.073E+00 2.045E+00 1.930E+00 1.777E+00 1.636E+00 1.506E+00 1.417E+00 1.387E+00 1.278E+00 1.177E+00
      gd     1.232E-04 1.225E-04 1.209E-04 1.150E-04 9.984E-05 8.374E-05 4.014E-05 1.401E-05 4.892E-06 1.703E-06 7.773E-07 5.944E-07 2.075E-07 7.244E-08
      tb     2.988E-02 2.931E-02 2.807E-02 2.374E-02 1.484E-02 8.269E-03 7.174E-04 2.178E-05 7.549E-07 1.191E-07 1.007E-07 9.972E-08 9.877E-08 9.837E-08
      dy     8.164E-09 8.086E-09 7.913E-09 7.276E-09 5.751E-09 4.291E-09 1.262E-09 2.188E-10 3.794E-11 6.548E-12 1.774E-12 1.135E-12 1.969E-13 3.415E-14
      ho     1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.762E-07 1.761E-07 1.760E-07 1.759E-07 1.758E-07 1.757E-07 1.757E-07 1.756E-07 1.755E-07
      er     4.799E-13 4.140E-13 2.970E-13 8.163E-14 2.194E-15 2.433E-17 1.633E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
      tm     1.093E-05 1.081E-05 1.056E-05 9.643E-06 7.485E-06 5.480E-06 1.591E-06 3.914E-07 1.726E-07 1.061E-07 7.926E-08 7.205E-08 4.995E-08 3.479E-08
      yb     5.161E-12 4.943E-12 4.484E-12 3.070E-12 1.063E-12 2.837E-13 1.136E-15 4.204E-19 1.556E-22 5.634E-26 1.561E-28 2.085E-29 7.716E-33 0.000E+00
  totals     2.599E+02 2.584E+02 2.552E+02 2.435E+02 2.159E+02 1.892E+02 1.201E+02 7.001E+01 4.494E+01 3.174E+01 2.595E+01 2.446E+01 2.020E+01 1.754E+01

    56$ array     20 entries read

     0t
1  * normal termination of execution *
0                                  table of contents for material tables
0                                    case or subcase printed      page

                                        1                 1
```

# B.4 ORIGEN RESULTS FOR COOLING MOX FUEL ROD B14

```
 ******************************************************************************
 *                                                                            *
 *                              SCALE 6.1.3                                   *
 *                             -------------                                  *
 *                             October  2013                                  *
 *                                                                            *
 *          SCALE:  A Comprehensive Modeling and Simulation Suite             *
 *                  for Nuclear Safety Analysis and Design                    *
 *                                                                            *
 *                     Reactor and Nuclear Systems Division                   *
 *                       Oak Ridge National Laboratory                        *
 *                                                                            *
 *                          http://scale.ornl.gov                             *
 *                           scalehelp@ornl.gov                               *
 *                                                                            *
 ******************************************************************************

 ******************************************************************************

                  Job Information
                  ---------------
      Job started on jupiter on Mon 21/10/2013 11:43:10
      Working directory: /tmp/scale.8re.5497
      Input file name  : /home/8re/MOX/b14xmox.inp
      Output file name : /home/8re/MOX/b14xmox.out

 ******************************************************************************
          primary module access and input record ( Scale 6.1 driver )


    module shell will be called at 11:43:10.392 on 10/21/2013.
    sequence specification record:#shell

    Input Data:

      cp $RTNDIR/ft71_mox_b14x ft71f001

    module shell  is finished. completion code     0. total cpu time used .04 seconds.


    module origens will be called at 11:43:10.427 on 10/21/2013.
    sequence specification record:#origens

    Input Data:

      0$$ a11 71 e t
      Decay Case
      3$$ 21 1 1 0 a16 2 a33 0 e t
      35$$ 0 t
      54$$ a1 1 a8 1 a11 0  e
      56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
      57** 0 a3 0.0 e
      95$$ 0 t
      5 more years for cooling used fuel material
      ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
      '
      '
      '                  14      365      365       366       272       93
      '
      '      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      ' 60** 2         6.5  24      73      134     389     754     1119    1485    1757     1850    2215    2580
      '
      60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
      61** 1e-20 1e-20 5r1e-20
      65$$
      'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
      t
      56$$ f0 t

    module origens  is finished. completion code     0. total cpu time used .14 seconds.

    Scale is finished at 11:43:10.570 on 10/21/2013
1



        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                    program verification information                                       *****
        *****                                                                                                          *****
        *****                                 code system:  SCALE    version:  6.1                                     *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****              program:  origen                                                                            *****
        *****                                                                                                          *****
        *****        creation date:  21_feb_2013                                                                       *****
        *****                                                                                                          *****
        *****              library:  /scale/scale6.1/Linux_x86_64/bin                                                  *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        *****      production code:  origen                                                                            *****
        *****                                                                                                          *****
        *****             revision:  6.1.2                                                                             *****
        *****                                                                                                          *****
        *****              jobname:  8re                                                                               *****
        *****                                                                                                          *****
        *****         machine name:  jupiter.ornl.gov                                                                  *****
        *****                                                                                                          *****
        *****    date of execution:  21_oct_2013                                                                       *****
        *****                                                                                                          *****
        *****    time of execution:  11:43:10.43                                                                       *****
        *****                                                                                                          *****
        *****                                                                                                          *****
        ******************************************************************************************************************
        ******************************************************************************************************************
        ******************************************************************************************************************
1
1            * input echo * (with break between col. 1-72 and 73-80)
0        note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0...............................columns 1-72...............................                ..73-80.

 0$$ a11 71 e t
 Decay Case
 3$$ 21 1 1 0 a16 2 a33 0 e t
 35$$ 0 t
 54$$ a1 1 a8 1 a11 0  e
 56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
 57** 0 a3 0.0 e
 95$$ 0 t
 5 more years for cooling used fuel material
 ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
 '
 '
 '                  14      365      365       366       272       93
 '
```

```
'      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/                22/13 10
' 60** 2         6.5  24      73      134     389     754     1119    14               85    17
'
 60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
 61** 1e-20 1e-20 5r1e-20
 65$$
 'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
 t
 56$$ f0 t
0when job "fails", make sure no fido input............................................. is out here!


     0$ array     12 entries read

     0t

     3$ array     33 entries read

     0t
1library information...

          cross-section data taken from position number    1 of library on unit 21.

          ****************************************************************************
          *                          ENDF/B-VII.1 decay data                         *
          *                         compiled August 30, 2012                         *
          *                     i.c. gauld, g. ilas, m. pigni                        *
          *                  reactor and nuclear systems division                    *
          *                       oak ridge national laboratory                      *
          ****************************************************************************
0         ****************************************************************************
0                   .other identification and sizes of library.
0                    data set name:  /scale/scale6.1/data/origen.rev03.end7dec
0                 8/31/2012    date library was produced
0                      2237    total number of nuclides in library
                        910    number of light-element nuclides
                        176    number of actinide nuclides
                       1151    number of fission product nuclides
0                      2636    number of nonzero off-diagonal matrix elements
0         ****************************************************************************

    35$ array      1 entries read

     0t

    54$ array     12 entries read

    56$ array     20 entries read

    57* array      5 entries read

    95$ array      1 entries read

     0t


                    14      365      365       366       272       93

      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10
 60** 2         6.5  24      73      134     389     754     1119    1485    17


    60* array     13 entries read

    61* array      7 entries read
 gram-atoms   grams   curies   watts-all   watts-gamma

    65$ array     63 entries read

     0t
0  obtaining data from position no.   43 on unit no.   71
1
     5 more years for cooling used fuel material                                                    light elements         page    1
0                                                  nuclide concentrations, grams
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
      h  1   9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05 9.692E-05
      h  2   2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05 2.071E-05
      h  3   8.401E-07 8.399E-07 8.393E-07 8.370E-07 8.307E-07 8.229E-07 7.913E-07 7.480E-07 7.071E-07 6.683E-07 6.409E-07 6.318E-07 5.973E-07 5.646E-07
     he  3   1.944E-07 1.946E-07 1.952E-07 1.975E-07 2.038E-07 2.115E-07 2.432E-07 2.865E-07 3.274E-07 3.662E-07 3.936E-07 4.027E-07 4.372E-07 4.699E-07
     he  4   5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02 5.663E-02
     li  6   3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12 3.850E-12
     li  7   3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13 3.676E-13
     be  9   3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08 3.584E-08
     be 10   1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06 1.857E-06
      b 10   8.699E-13 8.746E-13 8.851E-13 9.259E-13 1.040E-12 1.183E-12 1.778E-12 2.630E-12 3.481E-12 4.336E-12 4.970E-12 5.187E-12 6.039E-12 6.891E-12
      b 11   1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09 1.054E-09
      c 12   1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03 1.157E-03
      c 13   1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01 1.828E-01
      c 14   5.607E-06 5.607E-06 5.607E-06 5.607E-06 5.607E-06 5.607E-06 5.606E-06 5.606E-06 5.605E-06 5.604E-06 5.604E-06 5.604E-06 5.603E-06 5.602E-06
      n 14   7.097E-08 7.098E-08 7.099E-08 7.102E-08 7.111E-08 7.122E-08 7.170E-08 7.238E-08 7.306E-08 7.375E-08 7.443E-08 7.511E-08 7.579E-08
      n 15   1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04 1.707E-04
      o 16   2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03 2.027E+03
      o 17   4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04 4.809E-04
      o 18   1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09 1.873E-09
      f 19   1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15 1.397E-15
     na 23   6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16 6.287E-16
     mg 24   6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16 6.569E-16
     mg 25   6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16
     mg 26   7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16
     al 27   7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16 7.383E-16
     si 28   7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16
     si 29   7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16 7.942E-16
     si 30   8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16 8.251E-16
      p 31   8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16 8.484E-16
      s 32   8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16 8.742E-16
      s 33   8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16 8.983E-16
      s 34   9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16 9.307E-16
      s 36   9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16 9.845E-16
     cl 35   9.111E-16 9.111E-16 9.111E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16 9.112E-16
     cl 36   4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17 4.973E-17
     cl 37   1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15 1.021E-15
     ar 36   9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16 9.758E-16
     ar 38   1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15
     ar 39   1.823E-18 1.823E-18 1.823E-18 1.823E-18 1.822E-18 1.822E-18 1.818E-18 1.814E-18 1.809E-18 1.804E-18 1.801E-18 1.800E-18 1.795E-18 1.790E-18
     ar 40   1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15 1.099E-15
      k 39   1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15 1.062E-15
      k 40   1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15 1.053E-15
      k 41   1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15 1.158E-15
     ca 40   1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15 1.091E-15
     ca 41   6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19 6.105E-19
     ca 42   1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15
     ca 43   1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15 1.160E-15
     ca 44   1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15 1.220E-15
     ca 46   1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15
     ca 48   1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15 1.311E-15
     sc 45   1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15 1.193E-15
     sc 46   7.481E-19 7.358E-19 7.089E-19 6.134E-19 4.090E-19 2.469E-19 2.995E-20 1.462E-21 7.141E-23 3.458E-24 3.644E-25 1.688E-25 8.244E-27 4.025E-28
1
     5 more years for cooling used fuel material                                                    light elements         page    2
0                                                  nuclide concentrations, grams
                                                   basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     ti 46   1.296E-15 1.296E-15 1.296E-15 1.296E-15 1.296E-15 1.296E-15 1.297E-15 1.297E-15 1.297E-15 1.297E-15 1.297E-15 1.297E-15 1.297E-15 1.297E-15
     ti 47   1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15
     ti 48   1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15 1.305E-15
     ti 49   1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15 1.352E-15
     ti 50   1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15 1.371E-15
      v 50   8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19 8.750E-19
      v 51   2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17 2.694E-17
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| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cr 50 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 | 1.341E-15 |
| cr 52 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 |
| cr 53 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 | 1.420E-15 |
| cr 54 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.509E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 | 1.510E-15 |
| mn 54 | 3.587E-19 | 3.571E-19 | 3.536E-19 | 3.401E-19 | 3.050E-19 | 2.664E-19 | 1.512E-19 | 6.720E-20 | 2.987E-20 | 1.325E-20 | 7.241E-21 | 5.890E-21 | 2.618E-21 | 1.164E-21 |
| mn 55 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.474E-15 | 1.474E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 |
| fe 54 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 | 1.471E-15 |
| fe 55 | 2.871E-18 | 2.867E-18 | 2.858E-18 | 2.824E-18 | 2.730E-18 | 2.617E-18 | 2.194E-18 | 1.704E-18 | 1.324E-18 | 1.028E-18 | 8.517E-19 | 7.987E-19 | 6.205E-19 | 4.821E-19 |
| fe 56 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 | 1.607E-15 |
| fe 57 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 |
| fe 58 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 | 4.586E-15 |
| co 59 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 | 1.613E-15 |
| co 60 | 1.509E-16 | 1.508E-16 | 1.505E-16 | 1.496E-16 | 1.470E-16 | 1.438E-16 | 1.312E-16 | 1.150E-16 | 1.009E-16 | 8.841E-17 | 8.016E-17 | 7.752E-17 | 6.798E-17 | 5.960E-17 |
| ni 58 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 | 1.575E-15 |
| ni 59 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 |
| ni 60 | 1.974E-15 | 1.974E-15 | 1.974E-15 | 1.975E-15 | 1.977E-15 | 1.981E-15 | 1.993E-15 | 2.009E-15 | 2.024E-15 | 2.036E-15 | 2.044E-15 | 2.047E-15 | 2.056E-15 | 2.065E-15 |
| ni 61 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 |
| ni 62 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 | 1.674E-15 |
| ni 63 | 2.810E-17 | 2.810E-17 | 2.810E-17 | 2.809E-17 | 2.806E-17 | 2.803E-17 | 2.790E-17 | 2.770E-17 | 2.752E-17 | 2.733E-17 | 2.719E-17 | 2.714E-17 | 2.696E-17 | 2.677E-17 |
| ni 64 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 | 1.758E-15 |
| cu 63 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.707E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 | 1.708E-15 |
| cu 65 | 3.573E-18 | 3.573E-18 | 3.573E-18 | 3.573E-18 | 3.573E-18 | 3.574E-18 | 3.574E-18 | 3.575E-18 | 3.575E-18 | 3.575E-18 | 3.575E-18 | 3.575E-18 | 3.575E-18 | 3.575E-18 |
| zn 64 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 | 6.303E-18 |
| te123 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 | 1.443E-17 |
| te124 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 | 3.344E-15 |
| te125 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 |
| te126 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 | 4.057E-19 |
| xe131 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 | 4.903E-16 |
| xe132 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 | 2.016E-16 |
| cs133 | 5.239E-19 | 5.239E-19 | 5.239E-19 | 5.241E-19 | 5.245E-19 | 5.250E-19 | 5.270E-19 | 5.297E-19 | 5.322E-19 | 5.346E-19 | 5.363E-19 | 5.369E-19 | 5.390E-19 | 5.409E-19 |
| ba130 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 | 2.869E-15 |
| ba132 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 | 1.402E-18 |
| la137 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 | 2.563E-16 |
| la138 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 | 2.450E-17 |
| la139 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 | 3.226E-18 |
| ce136 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 | 3.438E-15 |
| yb176 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 | 1.727E-18 |
| lu175 | 4.488E-15 | 4.489E-15 | 4.489E-15 | 4.492E-15 | 4.498E-15 | 4.502E-15 | 4.506E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 | 4.507E-15 |
| lu176 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 | 1.094E-16 |
| hf174 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 | 2.206E-15 |
| hf175 | 1.856E-17 | 1.819E-17 | 1.740E-17 | 1.463E-17 | 9.007E-18 | 4.923E-18 | 3.941E-19 | 1.062E-20 | 2.860E-22 | 7.627E-24 | 5.159E-25 | 2.054E-25 | 5.533E-27 | 1.490E-28 |
| hf176 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 | 4.972E-15 |
| hf177 | 8.003E-16 | 8.003E-16 | 8.003E-16 | 8.003E-16 | 8.003E-16 | 8.003E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 | 8.004E-16 |
| hf178 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 | 5.115E-15 |
| hf179 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 | 1.147E-14 |

1

5 more years for cooling used fuel material light elements page 3

0

nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hf180 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 | 8.893E-15 |
| hf181 | 5.268E-19 | 5.099E-19 | 4.737E-19 | 3.558E-19 | 1.597E-19 | 5.889E-20 | 9.103E-22 | 2.329E-24 | 5.958E-27 | 1.499E-29 | 1.755E-31 | 3.836E-32 | 9.814E-35 | 0.000E+00 |
| hf182 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 |
| ta180m | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 | 3.041E-19 |
| ta181 | 2.738E-15 | 2.738E-15 | 2.738E-15 | 2.738E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 | 2.739E-15 |
| ta182 | 1.224E-17 | 1.209E-17 | 1.177E-17 | 1.059E-17 | 7.873E-18 | 5.446E-18 | 1.167E-18 | 1.287E-19 | 1.419E-20 | 1.555E-21 | 3.011E-22 | 1.719E-22 | 1.943E-23 | 2.616E-24 |
| w182 | 4.242E-15 | 4.242E-15 | 4.242E-15 | 4.243E-15 | 4.246E-15 | 4.248E-15 | 4.253E-15 | 4.254E-15 | 4.254E-15 | 4.254E-15 | 4.254E-15 | 4.254E-15 | 4.254E-15 | 4.254E-15 |
| w183 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 | 9.767E-15 |
| w184 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 | 8.405E-15 |
| w185 | 2.201E-18 | 2.161E-18 | 2.073E-18 | 1.764E-18 | 1.122E-18 | 6.389E-19 | 6.072E-20 | 2.090E-21 | 7.197E-23 | 2.455E-24 | 1.994E-25 | 8.453E-26 | 2.910E-27 | 1.002E-28 |
| w186 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 | 3.222E-15 |
| re185 | 1.015E-15 | 1.015E-15 | 1.015E-15 | 1.015E-15 | 1.016E-15 | 1.016E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 | 1.017E-15 |
| re186m | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 | 3.012E-18 |
| re187 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 | 5.356E-15 |
| os186 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 | 3.202E-15 |
| os187 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 | 5.054E-16 |
| os188 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 | 1.996E-15 |
| os189 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 | 1.300E-16 |
| os190 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 | 3.370E-17 |
| os192 | 1.379E-16 | 1.379E-16 | 1.379E-16 | 1.379E-16 | 1.380E-16 | 1.380E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 | 1.381E-16 |
| ir191 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 | 1.621E-16 |
| ir192 | 4.354E-18 | 4.273E-18 | 4.096E-18 | 3.475E-18 | 2.194E-18 | 1.237E-18 | 1.129E-19 | 3.668E-21 | 1.192E-22 | 3.835E-24 | 2.983E-25 | 1.246E-25 | 4.047E-27 | 1.315E-28 |
| ir193 | 2.658E-15 | 2.658E-15 | 2.658E-15 | 2.658E-15 | 2.659E-15 | 2.660E-15 | 2.662E-15 | 2.667E-15 | 2.671E-15 | 2.675E-15 | 2.677E-15 | 2.678E-15 | 2.682E-15 | 2.686E-15 |
| pt192 | 2.368E-15 | 2.368E-15 | 2.368E-15 | 2.369E-15 | 2.370E-15 | 2.371E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 | 2.372E-15 |
| pt193 | 3.014E-16 | 3.014E-16 | 3.013E-16 | 3.011E-16 | 3.006E-16 | 2.999E-16 | 2.970E-16 | 2.929E-16 | 2.889E-16 | 2.849E-16 | 2.820E-16 | 2.810E-16 | 2.771E-16 | 2.733E-16 |
| pt194 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 | 4.877E-15 |
| pt195 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 | 3.883E-17 |
| pt196 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 | 5.825E-18 |
| au197 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 | 3.453E-15 |
| hg196 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 | 3.890E-16 |
| hg198 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 | 9.997E-15 |
| hg199 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 |
| hg200 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 | 1.160E-14 |
| hg201 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 | 5.307E-15 |
| hg202 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 | 5.717E-15 |
| hg204 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 | 5.560E-15 |
| tl203 | 4.186E-17 | 4.186E-17 | 4.187E-17 | 4.189E-17 | 4.192E-17 | 4.194E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 | 4.196E-17 |
| tl204 | 8.149E-19 | 8.141E-19 | 8.122E-19 | 8.051E-19 | 7.856E-19 | 7.619E-19 | 6.704E-19 | 5.582E-19 | 4.648E-19 | 3.869E-19 | 3.375E-19 | 3.221E-19 | 2.682E-19 | 2.234E-19 |
| tl205 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 | 1.999E-17 |
| pb204 | 2.454E-19 | 2.462E-19 | 2.480E-19 | 2.549E-19 | 2.739E-19 | 2.969E-19 | 3.857E-19 | 4.946E-19 | 5.852E-19 | 6.609E-19 | 7.089E-19 | 7.238E-19 | 7.761E-19 | 8.197E-19 |
| total | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 |

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5 more years for cooling used fuel material light elements page 4

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element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.185E-04 | 1.184E-04 | 1.184E-04 | 1.183E-04 | 1.183E-04 | 1.183E-04 | 1.183E-04 | 1.182E-04 | 1.182E-04 |
| he | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 | 5.663E-02 |
| li | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 | 4.218E-12 |
| be | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 | 1.893E-06 |
| b | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.055E-09 | 1.056E-09 | 1.056E-09 | 1.057E-09 | 1.058E-09 | 1.059E-09 | 1.059E-09 | 1.060E-09 | 1.060E-09 | 1.061E-09 |
| c | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 | 1.840E-01 |
| n | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 | 1.707E-04 |
| o | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 | 2.027E+03 |
| f | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 | 1.397E-15 |
| ne | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 | 2.145E-19 |
| na | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 | 6.287E-16 |
| mg | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 |
| al | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 | 7.383E-16 |
| si | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 | 2.385E-15 |
| p | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 | 8.484E-16 |
| s | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 | 3.688E-15 |
| cl | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 | 1.982E-15 |
| ar | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 |
| k | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 | 3.272E-15 |
| ca | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 |
| sc | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.194E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 | 1.193E-15 |
| ti | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.607E-15 | 6.608E-15 | 6.608E-15 | 6.608E-15 | 6.608E-15 | 6.608E-15 | 6.608E-15 | 6.608E-15 |
| v | 2.781E-17 | 2.781E-17 | 2.781E-17 | 2.781E-17 | 2.782E-17 | 2.782E-17 | 2.782E-17 | 2.782E-17 | 2.781E-17 | 2.781E-17 | 2.781E-17 | 2.781E-17 | 2.781E-17 | 2.781E-17 |
| cr | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 | 5.691E-15 |
| mn | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.474E-15 | 1.474E-15 | 1.474E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 | 1.475E-15 |
| fe | 9.226E-15 | 9.226E-15 | 9.226E-15 | 9.226E-15 | 9.226E-15 | 9.226E-15 | 9.225E-15 | 9.225E-15 | 9.224E-15 | 9.224E-15 | 9.224E-15 | 9.224E-15 | 9.224E-15 | 9.224E-15 |
| co | 1.764E-15 | 1.764E-15 | 1.764E-15 | 1.763E-15 | 1.760E-15 | 1.757E-15 | 1.744E-15 | 1.728E-15 | 1.714E-15 | 1.702E-15 | 1.693E-15 | 1.691E-15 | 1.681E-15 | 1.673E-15 |
| ni | 9.956E-15 | 9.956E-15 | 9.957E-15 | 9.958E-15 | 9.960E-15 | 9.963E-15 | 9.976E-15 | 9.992E-15 | 1.001E-14 | 1.002E-14 | 1.003E-14 | 1.003E-14 | 1.004E-14 | 1.005E-14 |
| cu | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.712E-15 | 1.712E-15 | 1.712E-15 |
| zn | 6.313E-18 | 6.313E-18 | 6.313E-18 | 6.313E-18 | 6.313E-18 | 6.312E-18 | 6.312E-18 | 6.311E-18 | 6.311E-18 | 6.311E-18 | 6.311E-18 | 6.311E-18 | 6.311E-18 | 6.311E-18 |
| te | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 | 3.392E-15 |
| xe | 6.919E-16 | 6.919E-16 | 6.919E-16 | 6.919E-16 | 6.919E-16

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 6.267E-17 | 6.267E-17 | 6.267E-17 | 6.269E-17 | 6.270E-17 | 6.270E-17 | 6.262E-17 | 6.251E-17 | 6.241E-17 | 6.233E-17 | 6.228E-17 | 6.227E-17 | 6.222E-17 | 6.217E-17 | |
| pb | 2.568E-19 | 2.576E-19 | 2.593E-19 | 2.662E-19 | 2.852E-19 | 3.082E-19 | 3.970E-19 | 5.059E-19 | 5.966E-19 | 6.723E-19 | 7.202E-19 | 7.351E-19 | 7.875E-19 | 8.310E-19 | |
| totals | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | 2.028E+03 | |

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5 more years for cooling used fuel material light elements page 5

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nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 8.130E-03 | 8.127E-03 | 8.121E-03 | 8.100E-03 | 8.039E-03 | 7.964E-03 | 7.657E-03 | 7.238E-03 | 6.842E-03 | 6.467E-03 | 6.202E-03 | 6.114E-03 | 5.779E-03 | 5.464E-03 |
| be 10 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 |
| c 14 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.512E-05 | 2.512E-05 | 2.512E-05 | 2.512E-05 | 2.511E-05 | 2.511E-05 | 2.511E-05 |
| na 22 | 8.229E-21 | 8.217E-21 | 8.190E-21 | 8.086E-21 | 7.803E-21 | 7.463E-21 | 6.197E-21 | 4.749E-21 | 3.639E-21 | 2.787E-21 | 2.285E-21 | 2.136E-21 | 1.637E-21 | 1.254E-21 |
| si 32 | 5.539E-21 | 5.539E-21 | 5.538E-21 | 5.537E-21 | 5.534E-21 | 5.530E-21 | 5.512E-21 | 5.487E-21 | 5.462E-21 | 5.438E-21 | 5.419E-21 | 5.413E-21 | 5.389E-21 | 5.364E-21 |
| p 32 | 7.725E-20 | 7.061E-20 | 5.783E-20 | 2.788E-20 | 7.600E-21 | 5.638E-21 | 5.514E-21 | 5.489E-21 | 5.464E-21 | 5.439E-21 | 5.421E-21 | 5.415E-21 | 5.390E-21 | 5.366E-21 |
| p 33 | 6.273E-18 | 5.939E-18 | 5.251E-18 | 3.254E-18 | 8.516E-19 | 1.605E-19 | 1.501E-22 | 6.921E-27 | 3.192E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 2.283E-15 | 2.247E-15 | 2.169E-15 | 1.888E-15 | 1.281E-15 | 7.900E-16 | 1.048E-16 | 5.819E-18 | 3.230E-19 | 1.779E-20 | 2.063E-21 | 9.876E-22 | 5.483E-23 | 3.044E-24 |
| cl 36 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 |
| ar 37 | 2.995E-16 | 2.879E-16 | 2.634E-16 | 1.863E-16 | 7.067E-17 | 2.114E-17 | 1.363E-19 | 9.970E-23 | 7.294E-26 | 5.231E-29 | 2.409E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 6.216E-17 | 6.216E-17 | 6.216E-17 | 6.215E-17 | 6.213E-17 | 6.210E-17 | 6.199E-17 | 6.183E-17 | 6.167E-17 | 6.151E-17 | 6.140E-17 | 6.136E-17 | 6.120E-17 | 6.104E-17 |
| ar 42 | 1.027E-22 | 1.027E-22 | 1.026E-22 | 1.025E-22 | 1.022E-22 | 1.019E-22 | 1.004E-22 | 9.830E-23 | 9.625E-23 | 9.424E-23 | 9.277E-23 | 9.228E-23 | 9.035E-23 | 8.847E-23 |
| k 40 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 | 7.542E-21 |
| k 42 | 1.027E-22 | 1.027E-22 | 1.026E-22 | 1.025E-22 | 1.022E-22 | 1.019E-22 | 1.004E-22 | 9.830E-23 | 9.625E-23 | 9.424E-23 | 9.278E-23 | 9.228E-23 | 9.036E-23 | 8.847E-23 |
| ca 41 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 | 5.221E-20 |
| ca 45 | 2.775E-15 | 2.751E-15 | 2.699E-15 | 2.505E-15 | 2.033E-15 | 1.567E-15 | 5.285E-16 | 1.115E-16 | 2.353E-17 | 4.944E-18 | 1.551E-18 | 1.043E-18 | 2.201E-19 | 4.645E-20 |
| sc 45m | 5.272E-20 | 5.227E-20 | 5.128E-20 | 4.759E-20 | 3.862E-20 | 2.978E-20 | 1.004E-20 | 2.118E-21 | 4.470E-22 | 9.394E-23 | 2.946E-23 | 1.982E-23 | 4.182E-24 | 8.825E-25 |
| sc 46 | 2.535E-14 | 2.494E-14 | 2.403E-14 | 2.079E-14 | 1.386E-14 | 8.368E-15 | 1.015E-15 | 4.956E-17 | 2.420E-18 | 1.172E-19 | 1.235E-20 | 5.722E-21 | 2.794E-22 | 1.364E-23 |
| v 49 | 6.737E-18 | 6.708E-18 | 6.645E-18 | 6.406E-18 | 5.779E-18 | 5.084E-18 | 2.976E-18 | 1.382E-18 | 6.422E-19 | 2.977E-19 | 1.681E-19 | 1.383E-19 | 6.425E-20 | 2.985E-20 |
| cr 51 | 2.873E-16 | 2.733E-16 | 2.442E-16 | 1.576E-16 | 4.625E-17 | 1.005E-17 | 1.702E-20 | 1.839E-24 | 1.986E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 | 9.965E-24 |
| mn 54 | 2.781E-15 | 2.769E-15 | 2.741E-15 | 2.637E-15 | 2.365E-15 | 2.065E-15 | 1.172E-15 | 5.210E-16 | 2.316E-16 | 1.027E-16 | 5.614E-17 | 4.566E-17 | 2.030E-17 | 9.022E-18 |
| fe 55 | 6.804E-15 | 6.794E-15 | 6.773E-15 | 6.692E-15 | 6.469E-15 | 6.202E-15 | 5.199E-15 | 4.039E-15 | 3.138E-15 | 2.436E-15 | 2.018E-15 | 1.893E-15 | 1.470E-15 | 1.142E-15 |
| fe 59 | 1.050E-15 | 1.018E-15 | 9.487E-16 | 7.223E-16 | 3.367E-16 | 1.302E-16 | 2.451E-18 | 8.319E-21 | 2.822E-23 | 9.425E-26 | 1.362E-27 | 3.198E-28 | 1.085E-30 | 0.000E+00 |
| fe 60 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 |
| co 56 | 7.539E-23 | 7.405E-23 | 7.112E-23 | 6.078E-23 | 3.915E-23 | 2.265E-23 | 2.297E-24 | 8.678E-26 | 3.279E-27 | 1.228E-28 | 1.069E-29 | 4.640E-30 | 1.753E-31 | 0.000E+00 |
| co 57 | 1.492E-17 | 1.484E-17 | 1.467E-17 | 1.403E-17 | 1.238E-17 | 1.060E-17 | 5.530E-18 | 2.180E-18 | 8.591E-19 | 3.377E-19 | 1.688E-19 | 1.331E-19 | 5.247E-20 | 2.068E-20 |
| co 58 | 3.700E-16 | 3.628E-16 | 3.472E-16 | 2.925E-16 | 1.811E-16 | 9.974E-17 | 8.234E-18 | 2.317E-19 | 6.522E-21 | 1.818E-22 | 1.270E-23 | 5.115E-24 | 1.440E-25 | 4.052E-27 |
| co 60 | 1.706E-13 | 1.705E-13 | 1.702E-13 | 1.692E-13 | 1.662E-13 | 1.626E-13 | 1.483E-13 | 1.301E-13 | 1.141E-13 | 9.998E-14 | 9.065E-14 | 8.767E-14 | 7.687E-14 | 6.741E-14 |
| co 60m | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 | 4.726E-23 |
| ni 59 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 | 1.020E-16 |
| ni 63 | 1.576E-15 | 1.576E-15 | 1.576E-15 | 1.576E-15 | 1.574E-15 | 1.572E-15 | 1.566E-15 | 1.554E-15 | 1.544E-15 | 1.533E-15 | 1.525E-15 | 1.523E-15 | 1.512E-15 | 1.502E-15 |
| zn 65 | 1.561E-17 | 1.552E-17 | 1.532E-17 | 1.458E-17 | 1.269E-17 | 1.067E-17 | 5.168E-18 | 1.832E-18 | 6.493E-19 | 2.295E-19 | 1.060E-19 | 8.135E-20 | 2.883E-20 | 1.022E-20 |
| sn119m | 2.661E-22 | 2.649E-22 | 2.621E-22 | 2.515E-22 | 2.239E-22 | 1.938E-22 | 1.060E-22 | 4.471E-23 | 1.886E-23 | 7.932E-24 | 4.168E-24 | 3.345E-24 | 1.411E-24 | 5.948E-25 |
| sn121 | 5.135E-21 | 5.135E-21 | 5.134E-21 | 5.130E-21 | 5.119E-21 | 5.106E-21 | 5.050E-21 | 4.971E-21 | 4.893E-21 | 4.816E-21 | 4.760E-21 | 4.741E-21 | 4.666E-21 | 4.593E-21 |
| sn121m | 6.617E-21 | 6.617E-21 | 6.615E-21 | 6.610E-21 | 6.596E-21 | 6.579E-21 | 6.507E-21 | 6.405E-21 | 6.305E-21 | 6.206E-21 | 6.133E-21 | 6.108E-21 | 6.013E-21 | 5.919E-21 |
| sn123 | 1.983E-24 | 1.962E-24 | 1.915E-24 | 1.744E-24 | 1.341E-24 | 9.665E-25 | 2.461E-25 | 3.472E-26 | 4.900E-27 | 6.877E-28 | 1.598E-28 | 9.704E-29 | 1.369E-29 | 1.932E-30 |
| sb124 | 2.781E-20 | 2.718E-20 | 2.581E-20 | 2.110E-20 | 1.200E-20 | 5.945E-21 | 3.155E-22 | 4.719E-24 | 7.057E-26 | 1.043E-27 | 4.553E-29 | 1.560E-29 | 2.334E-31 | 0.000E+00 |
| sb125 | 2.653E-22 | 2.650E-22 | 2.641E-22 | 2.610E-22 | 2.523E-22 | 2.420E-22 | 2.030E-22 | 1.579E-22 | 1.229E-22 | 9.552E-22 | 7.922E-22 | 7.431E-22 | 5.781E-22 | 4.497E-22 |
| te121 | 4.023E-22 | 3.989E-22 | 3.913E-22 | 3.634E-22 | 2.954E-22 | 2.283E-22 | 7.784E-23 | 1.667E-23 | 3.570E-24 | 7.616E-25 | 2.416E-25 | 1.631E-25 | 3.026E-31 | 0.000E+00 |
| te121m | 4.007E-22 | 3.974E-22 | 3.899E-22 | 3.621E-22 | 2.945E-22 | 2.276E-22 | 7.757E-23 | 1.662E-23 | 3.559E-24 | 7.592E-25 | 2.408E-25 | 1.626E-25 | 3.484E-26 | 7.462E-27 |
| te123m | 3.021E-17 | 2.986E-17 | 2.909E-17 | 2.628E-17 | 1.976E-17 | 1.386E-17 | 3.146E-18 | 3.767E-19 | 4.510E-20 | 5.369E-21 | 1.104E-21 | 6.428E-22 | 7.697E-23 | 9.215E-24 |
| te125m | 4.764E-17 | 4.650E-17 | 4.404E-17 | 3.565E-17 | 1.973E-17 | 9.446E-18 | 4.349E-19 | 5.679E-21 | 3.654E-22 | 2.347E-22 | 1.940E-22 | 1.820E-22 | 1.416E-22 | 1.101E-22 |
| te127 | 8.482E-20 | 8.375E-20 | 8.142E-20 | 7.282E-20 | 5.332E-20 | 3.618E-20 | 7.148E-21 | 7.017E-22 | 6.888E-23 | 6.719E-24 | 1.191E-24 | 6.595E-25 | 0.000E+00 | 0.000E+00 |
| te127m | 8.660E-20 | 8.550E-20 | 8.309E-20 | 7.434E-20 | 5.444E-20 | 3.693E-20 | 7.297E-21 | 7.164E-22 | 7.032E-23 | 6.859E-24 | 1.216E-24 | 6.733E-25 | 6.610E-26 | 6.489E-27 |
| te129 | 4.172E-24 | 4.003E-24 | 3.648E-24 | 2.543E-24 | 9.253E-25 | 2.629E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 6.612E-24 | 6.345E-24 | 5.782E-24 | 4.030E-24 | 1.467E-24 | 4.167E-25 | 2.164E-27 | 1.162E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 1.461E-19 | 1.428E-19 | 1.355E-19 | 1.104E-19 | 6.235E-20 | 3.060E-20 | 1.561E-21 | 2.206E-23 | 3.118E-25 | 4.355E-27 | 1.822E-28 | 6.154E-29 | 8.698E-31 | 0.000E+00 |
| i126 | 4.626E-24 | 4.156E-24 | 3.265E-24 | 1.278E-24 | 9.239E-26 | 3.511E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 8.389E-20 | 8.076E-20 | 7.413E-20 | 5.312E-20 | 2.089E-20 | 6.539E-21 | 5.089E-23 | 4.876E-26 | 4.671E-29 | 4.391E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 1.318E-21 | 1.172E-21 | 9.008E-22 | 3.234E-22 | 1.836E-23 | 5.163E-25 | 1.696E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 3.001E-18 | 2.663E-18 | 2.037E-18 | 7.163E-19 | 3.808E-20 | 9.758E-22 | 1.166E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material light elements page 6

0

nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cs134 | 3.855E-17 | 3.848E-17 | 3.832E-17 | 3.771E-17 | 3.605E-17 | 3.408E-17 | 2.696E-17 | 1.928E-17 | 1.379E-17 | 9.848E-18 | 7.670E-18 | 7.042E-18 | 5.035E-18 | 3.601E-18 |
| cs135 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 | 2.252E-24 |
| cs137 | 2.085E-24 | 2.085E-24 | 2.085E-24 | 2.082E-24 | 2.076E-24 | 2.068E-24 | 2.035E-24 | 1.988E-24 | 1.943E-24 | 1.899E-24 | 1.867E-24 | 1.856E-24 | 1.813E-24 | 1.772E-24 |
| ba131 | 5.008E-19 | 4.440E-19 | 3.385E-19 | 1.179E-19 | 6.149E-21 | 1.556E-22 | 1.288E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 1.170E-17 | 1.170E-17 | 1.169E-17 | 1.165E-17 | 1.155E-17 | 1.142E-17 | 1.091E-17 | 1.022E-17 | 9.564E-18 | 8.953E-18 | 8.524E-18 | 8.382E-18 | 7.848E-18 | 7.347E-18 |
| ba137m | 1.975E-24 | 1.975E-24 | 1.974E-24 | 1.972E-24 | 1.966E-24 | 1.958E-24 | 1.927E-24 | 1.883E-24 | 1.840E-24 | 1.798E-24 | 1.768E-24 | 1.757E-24 | 1.717E-24 | 1.678E-24 |
| la137 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 |
| ce139 | 8.338E-20 | 8.255E-20 | 8.070E-20 | 7.389E-20 | 5.773E-20 | 4.246E-20 | 1.176E-20 | 1.871E-21 | 2.977E-22 | 4.712E-23 | 1.198E-23 | 7.498E-24 | 1.193E-24 | 1.898E-25 |
| ce141 | 2.012E-22 | 1.928E-22 | 1.752E-22 | 1.206E-22 | 4.243E-23 | 1.156E-23 | 5.029E-26 | 2.096E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 9.794E-25 | 9.689E-25 | 9.457E-25 | 8.606E-25 | 6.608E-25 | 4.757E-25 | 1.203E-25 | 1.683E-26 | 2.353E-27 | 3.272E-28 | 7.553E-29 | 4.575E-29 | 6.398E-30 | 8.946E-31 |
| tm171 | 2.949E-21 | 2.943E-21 | 2.930E-21 | 2.880E-21 | 2.743E-21 | 2.583E-21 | 1.919E-21 | 1.199E-21 | 9.752E-22 | 5.193E-22 | 4.397E-22 | 3.302E-22 | 2.302E-22 | 2.302E-22 |
| lu172 | 2.547E-21 | 2.546E-21 | 2.542E-21 | 2.508E-21 | 2.388E-21 | 2.245E-21 | 1.716E-21 | 1.185E-21 | 8.181E-22 | 5.643E-22 | 4.281E-22 | 3.896E-22 | 2.690E-22 | 1.857E-22 |
| lu172m | 2.547E-21 | 2.542E-21 | 2.530E-21 | 2.485E-21 | 2.365E-21 | 2.223E-21 | 1.716E-21 | 1.185E-21 | 8.181E-22 | 5.643E-22 | 4.281E-22 | 3.896E-22 | 2.690E-22 | 1.857E-22 |
| lu173 | 8.057E-17 | 8.034E-17 | 7.984E-17 | 7.793E-17 | 7.282E-17 | 6.692E-17 | 4.700E-17 | 2.835E-17 | 1.710E-17 | 1.030E-17 | 7.065E-18 | 6.211E-18 | 3.746E-18 | 2.260E-18 |
| lu174 | 1.131E-16 | 1.130E-16 | 1.128E-16 | 1.120E-16 | 1.096E-16 | 1.065E-16 | 9.336E-17 | 7.616E-17 | 6.185E-17 | 5.015E-17 | 4.291E-17 | 4.068E-17 | 3.300E-17 | 2.677E-17 |
| lu174m | 3.361E-17 | 3.329E-17 | 3.256E-17 | 2.990E-17 | 2.354E-17 | 1.748E-17 | 5.033E-18 | 8.473E-19 | 1.427E-19 | 2.390E-20 | 6.335E-21 | 4.023E-21 | 6.774E-22 | 1.140E-22 |
| lu176 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 | 5.915E-24 |
| lu177 | 1.344E-16 | 1.332E-16 | 1.308E-16 | 1.211E-16 | 9.802E-17 | 7.531E-17 | 2.503E-17 | 5.119E-18 | 1.068E-18 | 2.198E-19 | 6.786E-20 | 4.541E-20 | 9.381E-21 | 1.938E-21 |
| lu177m | 6.018E-16 | 5.966E-16 | 5.852E-16 | 5.426E-16 | 4.390E-16 | 3.373E-16 | 1.121E-16 | 2.316E-17 | 4.785E-18 | 9.844E-19 | 3.040E-19 | 2.034E-19 | 4.202E-20 | 8.682E-21 |
| hf172 | 2.547E-21 | 2.542E-21 | 2.530E-21 | 2.485E-21 | 2.365E-21 | 2.223E-21 | 1.716E-21 | 1.185E-21 | 8.181E-22 | 5.643E-22 | 4.281E-22 | 3.896E-22 | 2.690E-22 | 1.857E-22 |
| hf175 | 1.979E-13 | 1.940E-13 | 1.856E-13 | 1.560E-13 | 9.605E-14 | 5.250E-14 | 4.203E-15 | 1.132E-16 | 3.049E-18 | 8.133E-20 | 5.502E-21 | 2.191E-21 | 5.901E-23 | 1.589E-24 |
| hf177m | 4.730E-16 | 4.690E-16 | 4.599E-16 | 4.264E-16 | 3.451E-16 | 2.651E-16 | 8.811E-17 | 1.820E-17 | 3.761E-18 | 7.737E-19 | 2.389E-19 | 1.599E-19 | 3.303E-20 | 6.824E-21 |
| hf181 | 8.969E-15 | 8.681E-15 | 8.065E-15 | 6.058E-15 | 2.719E-15 | 1.003E-15 | 1.550E-17 | 3.965E-20 | 1.014E-22 | 2.553E-25 | 2.988E-27 | 6.531E-28 | 1.671E-30 | 0.000E+00 |
| hf182 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 | 3.330E-21 |
| ta179 | 4.398E-19 | 4.388E-19 | 4.368E-19 | 4.289E-19 | 4.075E-19 | 3.824E-19 | 2.931E-19 | 2.003E-19 | 1.369E-19 | 9.348E-20 | 7.039E-20 | 6.389E-20 | 4.366E-20 | 2.984E-20 |
| ta182 | 7.655E-14 | 7.563E-14 | 7.360E-14 | 6.622E-14 | 4.925E-14 | 3.407E-14 | 7.300E-15 | 5.049E-16 | 8.874E-17 | 9.728E-18 | 1.884E-18 | 1.075E-18 | 1.215E-19 | 1.636E-20 |
| w181 | 7.204E-17 | 7.122E-17 | 6.941E-17 | 6.280E-17 | 4.745E-17 | 3.348E-17 | 7.787E-18 | 9.656E-19 | 1.197E-19 | 1.476E-20 | 3.116E-21 | 1.831E-21 | 2.270E-22 | 2.815E-23 |
| w185 | 2.069E-14 | 2.031E-14 | 1.949E-14 | 1.658E-14 | 1.055E-14 | 6.007E-15 | 5.709E-16 | 1.965E-17 | 6.767E-19 | 2.308E-20 | 1.875E-21 | 7.948E-22 | 2.736E-23 | 9.421E-25 |
| w188 | 3.664E-16 | 3.592E-16 | 3.435E-16 | 2.887E-16 | 1.774E-16 | 9.680E-17 | 7.687E-18 | 2.047E-19 | 5.452E-21 | 1.438E-22 | 9.643E-24 | 3.828E-24 | 1.019E-25 | 2.715E-27 |
| re183 | 1.423E-20 | 1.395E-20 | 1.335E-20 | 1.122E-20 | 6.908E-21 | 3.776E-21 | 3.023E-22 | 8.142E-24 | 2.193E-25 | 5.849E-27 | 3.957E-28 | 1.576E-28 | 4.244E-30 | 1.143E-31 |
| re184 | 2.210E-18 | 2.186E-18 | 2.132E-18 | 1.941E-18 | 1.528E-18 | 1.164E-18 | 4.037E-19 | 9.063E-20 | 2.028E-20 | 4.520E-21 | 1.476E-21 | 1.008E-21 | 2.264E-22 | 5.067E-23 |
| re184m | 2.111E-18 | 2.094E-18 | 2.056E-18 | 1.914E-18 | 1.565E-18 | 1.219E-18 | 4.282E-19 | 9.583E-20 | 2.145E-20 | 4.780E-21 | 1.566E-21 | 1.070E-21 | 2.394E-22 | 5.357E-23 |
| re186 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 |
| re186m | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 | 2.896E-20 |
| re187 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 | 2.366E-22 |
| re188 | 3.701E-16 | 3.629E-16 | 3.470E-16 | 2.916E-16 | 1.792E-16 | 9.779E-17 | 7.766E-18 | 2.068E-19 | 5.508E-21 | 1.452E-22 | 9.742E-24 | 3.867E-24 | 0.000E+00 | 0.000E+00 |
| os185 | 2.838E-17 | 2.796E-17 | 2.704E-17 | 2.376E-17 | 1.653E-17 | 1.052E-17 | 1.592E-18 | 1.067E-19 | 7.146E-21 | 4.753E-22 | 6.341E-23 | 3.185E-23 | 2.134E-24 | 1.430E-25 |
| os191 | 2.962E-20 | 2.707E-20 | 2.211E-20 | 1.006E-20 | 1.108E-21 | 7.115E-23 | 7.372E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| os194 | 2.310E-20 | 2.308E-20 | 2.305E-20 | 2.292E-20 | 2.257E-20 | 2.214E-20 | 2.042E-20 | 1.820E-20 | 1.621E-20 | 1.444E-20 | 1.325E-20 | 1.286E-20 | 1.146E-20 | 1.021E-20 |
| ir190 | 8.046E-24 | 7.153E-24 | 5.489E-24 | 1.960E-24 | 1.097E-25 | 3.029E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir191m | 2.962E-20 | 2.707E-20 | 2.211E-20 | 1.006E-20 | 1.108E-21 | 7.115E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir192 | 4.012E-14 | 3.938E-14 | 3.775E-14 | 3.203E-14 | 2.022E-14 | 1.140E-14 | 1.041E-15 | 3.380E-17 | 1.098E-18 | 3.534E-20 | 2.749E-21 | 1.148E-21 | 3.730E-23 | 1.212E-24 |
| ir193m | 7.862E-21 | 6.892E-21 | 5.125E-21 | 1.620E-21 | 6.436E-23 | 1.161E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir194 | 2.310E-20 | 2.309E-20 | 2.306E-20 | 2.293E-20 | 2.258E-20 | 2.215E-20 | 2.043E-20 | 1.820E-20 | 1.622E-20 | 1.444E-20 | 1.325E-20 | 1.287E-20 | 1.147E-20 | 1.022E-20 |
| pt193 | 1.117E-14 | 1.117E-14 | 1.117E-14 | 1.116E-14 | 1.114E-14 | 1.111E-14 | 1.101E-14 | 1.086E-14 | 1.071E-14 | 1.056E-14 | 1.045E-14 | 1.041E-14 | 1.027E-14 | 1.013E-14 |
| au194 | 1.266E-22 | 1.266E-22 | 1.266E-22 | 1.267E-22 | 1.266E-22 | 1.265E-22 | 1.264E-22 | 1.262E-22 | 1.260E-22 | 1.258E-22 | 1.257E-22 | 1.256E-22 | 1.254E-22 | 1.252E-22 |
| au195 | 1.391E-17 | 1.381E-17 | 1.358E-17 | 1.272E-17 | 1.060E-17 | 8.446E-18 | 3.267E-18 | 8.390E-19 | 2.154E-19 | 5.512E-20 | 2.001E-20 | 1.415E-20 | 3.635E-21 | 9.334E-22 |
| hg194 | 1.266E-22 | 1.266E-22 | 1.266E-22 | 1.266E-22 | 1.266E-22 | 1.265E-22 | 1.264E-22 | 1.262E-22 | 1.260E-22 | 1.258E-22 | 1.257E-22 | 1.256E-22 | 1.254E-22 | 1.252E-22 |
| hg203 | 1.310E-15 | 1.272E-15 | 1.190E-15 | 9.170E-16 | 4.424E-16 | 1.785E-16 | 4.020E-18 | 1.762E-20 | 7.724E-23 | 3.336E-25 | 5.833E-27 | 1.462E-27 | 6.410E-30 | 0.000E+00 |
| tl202 | 3.112E-24 | 2.781E-24 | 2.158E-24 | 8.057E-25 | 5.106E-26 | 1.663E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.823E-29 | 0.000E+00 | 0.000E+00 |
| tl204 | 3.777E-16 | 3.773E-16 | 3.764E-16 | 3.731E-16 | 3.641E-16 | 3.531E-16 | 3.107E-16 | 2.587E-16 | 2.154E-16 | 1.793E-16 | 1.564E-16 | 1.493E-16 | 1.243E-16 | 1.035E-16 |
| total | 8.155E-03 | 8.152E-03 | 8.147E-03 | 8.125E-03 | 8.064E-03 | 7.989E-03 | 7.682E-03 | 7.263E-03 | 6.868E-03 | 6.493E-03 | 6.227E-03 | 6.139E-03 | 5.805E-03 | 5.489E-03 |

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5 more years for cooling used fuel material light elements page 7

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element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 8.130E-03 | 8.127E-03 | 8.121E-03 | 8.100E-03 | 8.039E-03 | 7.964E-03 | 7.657E-03 | 7.238E-03 | 6.842E-03 | 6.467E-03 | 6.202E-03 | 6.114E-03 | 5.779E-03 | 5.464E-03 |
| be | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 | 4.398E-08 |
| c | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.513E-05 | 2.512E-05 | 2.512E-05 | 2.512E-05 | 2.512E-05 | 2.511E-05 | 2.511E-05 | 2.511E-05 |
| na | 8.229E-21 | 8.217E-21 | 8.190E-21 | 8.086E-21 | 7.803E-21 | 7.463E-21 | 6.197E-21 | 4.749E-21 | 3.639E-21 | 2.787E-21 | 2.285E-21 | 2.136E-21 | 1.637E-21 | 1.254E-21 |
| si | 5.539E-21 | 5.539E-21 | 5.538E-21 | 5.537E-21 | 5.534E-21 | 5.530E-21 | 5.512E-21 | 5.487E-21 | 5.462E-21 | 5.438E-21 | 5.419E-21 | 5.413E-21 | 5.389E-21 | 5.364E-21 |
| p | 6.350E-18 | 6.010E-18 | 5.309E-18 | 3.281E-18 | 8.592E-19 | 1.662E-19 | 5.666E-21 | 5.489E-21 | 5.464E-21 | 5.439E-21 | 5.421E-21 | 5.415E-21 | 5.390E-21 | 5.366E-21 |
| s | 2.283E-15 | 2.247E-15 | 2.169E-15 | 1.888E-15 | 1.281E-15 | 7.900E-16 | 1.048E-16 | 5.819E-18 | 3.230E-19 | 1.779E-20 | 2.063E-21 | 9.876E-22 | 5.483E-23 | 3.044E-24 |
| cl | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 | 1.641E-18 |
| ar | 3.617E-16 | 3.500E-16 | 3.255E-16 | 2.484E-16 | 1.328E-16 | 8.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te | 7.802E-17 | 7.653E-17 | 7.330E-17 | 6.208E-17 | 3.960E-17 | 2.338E-17 | 3.595E-18 | 3.838E-19 | 4.561E-20 | 5.619E-21 | 1.301E-21 | 8.265E-22 | 2.186E-22 | 1.194E-22 |
| i | 1.461E-19 | 1.428E-19 | 1.355E-19 | 1.104E-19 | 6.235E-20 | 3.060E-20 | 1.561E-21 | 2.206E-23 | 3.130E-25 | 5.555E-27 | 1.383E-27 | 1.262E-27 | 1.202E-27 | 1.201E-27 |
| xe | 8.521E-20 | 8.193E-20 | 7.503E-20 | 5.344E-20 | 2.091E-20 | 5.540E-21 | 1.089E-23 | 4.876E-26 | 4.671E-29 | 4.391E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 4.155E-17 | 4.114E-17 | 4.036E-17 | 3.842E-17 | 3.609E-17 | 3.408E-17 | 2.696E-17 | 1.928E-17 | 1.379E-17 | 9.848E-18 | 7.670E-18 | 7.042E-18 | 5.035E-18 | 3.601E-18 |
| ba | 1.220E-17 | 1.214E-17 | 1.203E-17 | 1.177E-17 | 1.156E-17 | 1.142E-17 | 1.091E-17 | 1.022E-17 | 9.564E-18 | 8.953E-18 | 8.524E-18 | 8.382E-18 | 7.848E-18 | 7.347E-18 |
| la | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 | 1.115E-17 |
| ce | 8.358E-20 | 8.274E-20 | 8.087E-20 | 7.401E-20 | 5.777E-20 | 4.247E-20 | 1.176E-20 | 1.871E-21 | 2.977E-22 | 4.712E-23 | 1.198E-23 | 7.498E-24 | 1.193E-24 | 1.898E-25 |
| tm | 2.950E-21 | 2.944E-21 | 2.931E-21 | 2.880E-21 | 2.744E-21 | 2.583E-21 | 2.008E-21 | 1.399E-21 | 9.756E-22 | 6.794E-22 | 5.193E-22 | 4.737E-22 | 3.302E-22 | 2.302E-22 |
| lu | 9.634E-16 | 9.565E-16 | 9.410E-16 | 8.835E-16 | 7.430E-16 | 6.035E-16 | 2.825E-16 | 1.337E-16 | 8.494E-17 | 6.168E-17 | 5.036E-17 | 4.715E-17 | 3.680E-17 | 2.904E-17 |
| hf | 2.073E-13 | 2.032E-13 | 1.941E-13 | 1.625E-13 | 9.911E-14 | 5.377E-14 | 4.307E-15 | 1.315E-16 | 6.815E-18 | 8.590E-19 | 2.482E-19 | 1.658E-19 | 3.669E-20 | 1.034E-20 |
| ta | 7.655E-14 | 7.563E-14 | 7.360E-14 | 6.622E-14 | 4.925E-14 | 3.407E-14 | 1.301E-15 | 7.051E-16 | 8.888E-17 | 9.821E-18 | 1.954E-18 | 1.139E-18 | 1.652E-19 | 4.620E-20 |
| w | 2.113E-14 | 2.074E-14 | 1.990E-14 | 1.693E-14 | 1.077E-14 | 6.138E-15 | 5.864E-16 | 2.083E-17 | 8.019E-19 | 3.799E-20 | 5.001E-21 | 2.629E-21 | 2.545E-22 | 2.909E-23 |
| re | 3.745E-16 | 3.672E-16 | 3.513E-16 | 2.956E-16 | 1.824E-16 | 1.002E-16 | 8.657E-18 | 4.514E-19 | 1.054E-19 | 6.760E-20 | 6.121E-20 | 6.023E-20 | 5.862E-20 | 5.826E-20 |
| os | 2.843E-17 | 2.801E-17 | 2.709E-17 | 2.379E-17 | 1.655E-17 | 1.054E-17 | 1.612E-18 | 1.248E-19 | 2.336E-20 | 1.491E-20 | 1.331E-20 | 1.290E-20 | 1.146E-20 | 1.021E-20 |
| ir | 4.012E-14 | 3.938E-14 | 3.775E-14 | 3.203E-14 | 2.022E-14 | 1.140E-14 | 1.041E-15 | 3.382E-17 | 1.114E-18 | 4.978E-20 | 1.600E-20 | 1.402E-20 | 1.150E-20 | 1.022E-20 |
| pt | 1.117E-14 | 1.117E-14 | 1.117E-14 | 1.116E-14 | 1.114E-14 | 1.111E-14 | 1.101E-14 | 1.086E-14 | 1.071E-14 | 1.056E-14 | 1.045E-14 | 1.041E-14 | 1.027E-14 | 1.013E-14 |
| au | 1.391E-17 | 1.381E-17 | 1.358E-17 | 1.272E-17 | 1.060E-17 | 8.446E-18 | 3.267E-18 | 8.391E-19 | 2.156E-19 | 5.524E-20 | 2.014E-20 | 1.428E-20 | 3.760E-21 | 1.059E-21 |
| hg | 1.310E-15 | 1.272E-15 | 1.190E-15 | 9.170E-16 | 4.424E-16 | 1.785E-16 | 4.020E-18 | 1.775E-20 | 2.032E-22 | 1.261E-22 | 1.257E-22 | 1.256E-22 | 1.254E-22 | 1.252E-22 |
| tl | 3.777E-16 | 3.773E-16 | 3.764E-16 | 3.731E-16 | 3.641E-16 | 3.531E-16 | 3.107E-16 | 2.587E-16 | 2.154E-16 | 1.793E-16 | 1.564E-16 | 1.493E-16 | 1.243E-16 | 1.035E-16 |
| totals | 8.155E-03 | 8.152E-03 | 8.147E-03 | 8.125E-03 | 8.064E-03 | 7.989E-03 | 7.682E-03 | 7.263E-03 | 6.868E-03 | 6.493E-03 | 6.227E-03 | 6.139E-03 | 5.805E-03 | 5.489E-03 |

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nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 2.742E-07 | 2.741E-07 | 2.739E-07 | 2.732E-07 | 2.711E-07 | 2.686E-07 | 2.583E-07 | 2.441E-07 | 2.308E-07 | 2.181E-07 | 2.092E-07 | 2.062E-07 | 1.949E-07 | 1.843E-07 |
| be 10 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 |
| c 14 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.368E-09 | 7.367E-09 | 7.366E-09 | 7.366E-09 | 7.365E-09 | 7.365E-09 | 7.364E-09 | 7.363E-09 |
| na 22 | 1.165E-22 | 1.163E-22 | 1.159E-22 | 1.144E-22 | 1.104E-22 | 1.056E-22 | 8.771E-23 | 6.721E-23 | 5.151E-23 | 3.944E-23 | 3.235E-23 | 3.023E-23 | 2.316E-23 | 1.775E-23 |
| al 26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 |
| si 32 | 2.247E-24 | 2.247E-24 | 2.247E-24 | 2.246E-24 | 2.245E-24 | 2.243E-24 | 2.236E-24 | 2.226E-24 | 2.216E-24 | 2.206E-24 | 2.198E-24 | 2.196E-24 | 2.186E-24 | 2.176E-24 |
| p 32 | 3.182E-22 | 2.908E-22 | 2.382E-22 | 1.148E-22 | 3.130E-23 | 2.322E-23 | 2.233E-23 | 2.261E-23 | 2.251E-23 | 2.240E-23 | 2.233E-23 | 2.231E-23 | 2.228E-23 | 2.225E-23 |
| p 33 | 2.842E-21 | 2.691E-21 | 2.379E-21 | 1.474E-21 | 3.858E-22 | 7.273E-23 | 6.798E-26 | 3.136E-30 | 1.446E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 6.599E-19 | 6.495E-19 | 6.268E-19 | 5.457E-19 | 3.701E-19 | 2.283E-19 | 3.029E-20 | 1.682E-21 | 9.336E-23 | 5.142E-24 | 5.963E-25 | 2.855E-25 | 1.585E-26 | 8.797E-28 |
| cl 36 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 |
| ar 37 | 3.843E-21 | 3.694E-21 | 3.380E-21 | 2.391E-21 | 9.069E-22 | 2.713E-22 | 1.749E-24 | 1.279E-27 | 9.360E-31 | 6.713E-34 | 3.091E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 8.062E-20 | 8.062E-20 | 8.062E-20 | 8.061E-20 | 8.058E-20 | 8.055E-20 | 8.040E-20 | 8.019E-20 | 7.999E-20 | 7.978E-20 | 7.963E-20 | 7.958E-20 | 7.937E-20 | 7.917E-20 |
| ar 42 | 1.416E-25 | 1.415E-25 | 1.415E-25 | 1.414E-25 | 1.410E-25 | 1.405E-25 | 1.384E-25 | 1.355E-25 | 1.327E-25 | 1.299E-25 | 1.279E-25 | 1.272E-25 | 1.246E-25 | 1.220E-25 |
| k 40 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 | 2.930E-23 |
| k 42 | 1.040E-24 | 1.040E-24 | 1.040E-24 | 1.039E-24 | 1.036E-24 | 1.032E-24 | 1.017E-24 | 9.959E-25 | 9.752E-25 | 9.548E-25 | 9.400E-25 | 9.349E-25 | 9.155E-25 | 8.964E-25 |
| ca 41 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 | 9.631E-25 |
| ca 45 | 1.264E-18 | 1.253E-18 | 1.230E-18 | 1.141E-18 | 9.260E-19 | 7.140E-19 | 2.408E-19 | 5.081E-20 | 1.072E-20 | 2.252E-21 | 7.065E-22 | 4.753E-22 | 1.003E-22 | 2.116E-23 |
| sc 45m | 3.850E-24 | 3.817E-24 | 3.745E-24 | 3.475E-24 | 2.820E-24 | 2.175E-24 | 7.333E-25 | 1.547E-25 | 3.265E-26 | 6.860E-27 | 2.152E-27 | 1.447E-27 | 3.054E-28 | 6.445E-29 |
| sc 46 | 3.188E-16 | 3.136E-16 | 3.021E-16 | 2.614E-16 | 1.743E-16 | 1.052E-16 | 1.276E-17 | 6.233E-19 | 3.043E-20 | 1.474E-21 | 1.553E-22 | 7.196E-23 | 3.513E-24 | 1.716E-25 |
| v 48 | 2.924E-27 | 2.681E-27 | 2.205E-27 | 1.032E-27 | 1.231E-28 | 8.722E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| v 49 | 1.778E-22 | 1.770E-22 | 1.753E-22 | 1.690E-22 | 1.525E-22 | 1.341E-22 | 7.852E-23 | 3.648E-23 | 1.695E-23 | 7.856E-24 | 4.437E-24 | 3.649E-24 | 1.695E-24 | 7.876E-25 |
| cr 51 | 6.247E-20 | 5.942E-20 | 5.310E-20 | 3.427E-20 | 1.006E-20 | 2.185E-21 | 3.701E-24 | 3.998E-28 | 4.318E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 | 3.182E-28 |
| mn 54 | 1.385E-17 | 1.379E-17 | 1.365E-17 | 1.313E-17 | 1.178E-17 | 1.028E-17 | 5.837E-18 | 2.595E-18 | 1.153E-18 | 5.116E-19 | 2.796E-19 | 2.274E-19 | 1.011E-19 | 4.493E-20 |
| fe 55 | 2.356E-19 | 2.353E-19 | 2.346E-19 | 2.317E-19 | 2.240E-19 | 2.148E-19 | 1.800E-19 | 1.399E-19 | 1.087E-19 | 8.437E-20 | 6.990E-20 | 6.554E-20 | 5.092E-20 | 3.956E-20 |
| fe 59 | 8.127E-18 | 7.878E-18 | 7.344E-18 | 5.592E-18 | 2.606E-18 | 1.008E-18 | 1.897E-20 | 6.438E-23 | 2.184E-25 | 7.297E-28 | 1.054E-29 | 2.476E-30 | 8.400E-33 | 0.000E+00 |
| fe 60 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 | 1.406E-26 |
| co 56 | 1.681E-24 | 1.651E-24 | 1.585E-24 | 1.355E-24 | 8.729E-25 | 5.049E-25 | 5.120E-26 | 1.935E-27 | 7.311E-29 | 2.738E-30 | 2.383E-31 | 1.034E-31 | 3.909E-33 | 0.000E+00 |
| co 57 | 1.271E-20 | 1.265E-20 | 1.251E-20 | 1.196E-20 | 1.055E-20 | 9.034E-21 | 4.714E-21 | 1.858E-21 | 7.323E-22 | 2.878E-22 | 1.135E-22 | 4.472E-23 | 1.763E-23 | 6.951E-24 |
| co 58 | 2.212E-18 | 2.169E-18 | 2.076E-18 | 1.749E-18 | 1.083E-18 | 5.965E-19 | 4.923E-20 | 1.386E-21 | 3.900E-23 | 1.087E-24 | 7.597E-26 | 3.059E-26 | 8.609E-28 | 2.423E-29 |
| co 60 | 2.631E-15 | 2.629E-15 | 2.624E-15 | 2.608E-15 | 2.562E-15 | 2.507E-15 | 2.287E-15 | 2.005E-15 | 1.758E-15 | 1.541E-15 | 1.397E-15 | 1.351E-15 | 1.185E-15 | 1.039E-15 |
| co 60m | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 | 1.766E-26 |
| ni 59 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 | 4.180E-21 |
| ni 63 | 1.628E-19 | 1.628E-19 | 1.628E-19 | 1.627E-19 | 1.626E-19 | 1.624E-19 | 1.616E-19 | 1.605E-19 | 1.594E-19 | 1.583E-19 | 1.575E-19 | 1.573E-19 | 1.562E-19 | 1.551E-19 |
| zn 65 | 5.393E-20 | 5.363E-20 | 5.295E-20 | 5.038E-20 | 4.383E-20 | 3.685E-20 | 1.786E-20 | 6.329E-21 | 2.243E-21 | 7.929E-22 | 3.661E-22 | 2.810E-22 | 9.962E-23 | 3.531E-23 |
| sn119m | 1.382E-25 | 1.375E-25 | 1.361E-25 | 1.306E-25 | 1.163E-25 | 1.006E-25 | 5.505E-26 | 2.322E-26 | 9.790E-27 | 4.118E-27 | 2.164E-27 | 1.737E-27 | 7.324E-28 | 3.088E-28 |
| sn121 | 3.526E-24 | 3.525E-24 | 3.525E-24 | 3.522E-24 | 3.514E-24 | 3.505E-24 | 3.467E-24 | 3.412E-24 | 3.359E-24 | 3.306E-24 | 3.268E-24 | 3.255E-24 | 3.204E-24 | 3.153E-24 |
| sn121m | 1.490E-24 | 1.490E-24 | 1.490E-24 | 1.488E-24 | 1.485E-24 | 1.481E-24 | 1.465E-24 | 1.442E-24 | 1.420E-24 | 1.397E-24 | 1.381E-24 | 1.375E-24 | 1.354E-24 | 1.333E-24 |
| sn123 | 6.232E-27 | 6.165E-27 | 6.018E-27 | 5.479E-27 | 4.212E-27 | 3.037E-27 | 7.731E-28 | 1.091E-28 | 1.539E-29 | 2.161E-30 | 5.022E-31 | 3.049E-31 | 4.303E-32 | 6.072E-33 |
| sb124 | 3.685E-22 | 3.601E-22 | 3.419E-22 | 2.795E-22 | 1.590E-22 | 7.877E-23 | 4.180E-24 | 6.252E-26 | 9.350E-28 | 1.382E-29 | 6.032E-31 | 2.067E-31 | 3.092E-33 | 0.000E+00 |
| sb125 | 8.391E-24 | 8.379E-24 | 8.353E-24 | 8.254E-24 | 7.980E-24 | 7.652E-24 | 6.421E-24 | 4.995E-24 | 3.886E-24 | 3.021E-24 | 2.505E-24 | 2.350E-24 | 1.828E-24 | 1.422E-24 |
| te121 | 1.402E-24 | 1.390E-24 | 1.364E-24 | 1.267E-24 | 1.030E-24 | 7.959E-25 | 2.713E-25 | 5.811E-26 | 1.245E-26 | 2.655E-27 | 8.423E-28 | 5.687E-28 | 1.055E-33 | 0.000E+00 |
| te121m | 7.021E-25 | 6.962E-25 | 6.831E-25 | 6.345E-25 | 5.159E-25 | 3.988E-25 | 1.359E-25 | 2.911E-26 | 6.236E-27 | 1.330E-27 | 4.220E-28 | 2.849E-28 | 6.104E-29 | 1.307E-29 |
| te123m | 4.456E-20 | 4.404E-20 | 4.291E-20 | 3.875E-20 | 2.915E-20 | 2.044E-20 | 4.068E-21 | 1.556E-22 | 6.652E-24 | 9.818E-26 | 1.628E-26 | 9.461E-25 | 1.135E-25 | 1.359E-26 |
| te125m | 4.108E-20 | 4.010E-20 | 3.798E-20 | 3.074E-20 | 1.701E-20 | 8.144E-21 | 3.750E-22 | 4.897E-24 | 3.150E-25 | 2.024E-25 | 1.673E-25 | 1.569E-25 | 1.221E-25 | 9.495E-26 |
| te127 | 1.154E-22 | 1.139E-22 | 1.107E-22 | 9.904E-23 | 7.253E-23 | 4.921E-23 | 9.722E-24 | 9.544E-25 | 9.369E-26 | 9.139E-27 | 1.621E-27 | 8.971E-28 | 0.000E+00 | 0.000E+00 |
| te127m | 4.732E-23 | 4.672E-23 | 4.540E-23 | 4.062E-23 | 2.975E-23 | 2.018E-23 | 3.988E-24 | 3.914E-25 | 3.843E-26 | 3.748E-27 | 6.647E-28 | 3.679E-28 | 3.612E-29 | 3.546E-30 |
| te129 | 1.505E-26 | 1.444E-26 | 1.316E-26 | 9.174E-27 | 3.338E-27 | 9.485E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 1.211E-26 | 1.162E-26 | 1.059E-26 | 7.381E-27 | 2.686E-27 | 7.631E-28 | 3.962E-30 | 2.127E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 5.238E-23 | 5.117E-23 | 4.855E-23 | 3.959E-23 | 2.235E-23 | 1.097E-23 | 5.595E-25 | 7.907E-27 | 1.117E-28 | 1.561E-30 | 6.530E-32 | 2.206E-32 | 3.117E-34 | 0.000E+00 |
| i126 | 1.634E-26 | 1.468E-26 | 1.153E-26 | 4.514E-27 | 3.264E-28 | 1.240E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 1.555E-22 | 1.497E-22 | 1.374E-22 | 9.845E-23 | 3.872E-23 | 1.212E-23 | 9.433E-26 | 9.037E-29 | 8.658E-32 | 8.139E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 1.273E-24 | 1.132E-24 | 8.699E-25 | 3.123E-25 | 1.773E-26 | 4.987E-28 | 1.638E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 5.272E-22 | 4.679E-22 | 3.578E-22 | 1.258E-22 | 6.690E-24 | 1.714E-25 | 2.048E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.767E-28 | 1.426E-28 | 8.815E-29 | 1.356E-29 | 7.176E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs134 | 3.927E-19 | 3.920E-19 | 3.903E-19 | 3.841E-19 | 3.672E-19 | 3.472E-19 | 2.747E-19 | 1.964E-19 | 1.404E-19 | 1.003E-19 | 7.814E-20 | 7.174E-20 | 5.129E-20 | 3.668E-20 |
| cs135 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 | 1.011E-27 |
| cs136 | 6.410E-27 | 5.769E-27 | 4.552E-27 | 1.811E-27 | 1.371E-28 | 5.516E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.218E-27 | 2.218E-27 | 2.217E-27 | 2.215E-27 | 2.208E-27 | 2.200E-27 | 2.164E-27 | 2.115E-27 | 2.067E-27 | 2.020E-27 | 1.985E-27 | 1.974E-27 | 1.929E-27 | 1.885E-27 |
| ba131 | 1.589E-21 | 1.409E-21 | 1.074E-21 | 3.741E-22 | 1.951E-23 | 4.938E-25 | 1.043E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 3.172E-20 | 3.171E-20 | 3.168E-20 | 3.158E-20 | 3.130E-20 | 3.096E-20 | 2.957E-20 | 2.768E-20 | 2.592E-20 | 2.426E-20 | 2.310E-20 | 2.272E-20 | 2.127E-20 | 1.991E-20 |
| ba137m | 7.742E-27 | 7.741E-27 | 7.739E-27 | 7.731E-27 | 7.707E-27 | 7.677E-27 | 7.555E-27 | 7.383E-27 | 7.215E-27 | 7.050E-27 | 6.930E-27 | 6.889E-27 | 6.733E-27 | 6.579E-27 |
| la137 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.127E-21 |
| la138 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 | 4.666E-27 |
| ce139 | 9.675E-23 | 9.578E-23 | 9.364E-23 | 8.574E-23 | 6.699E-23 | 4.927E-23 | 1.364E-23 | 2.171E-24 | 3.454E-25 | 5.468E-26 | 1.390E-26 | 8.700E-27 | 1.384E-27 | 2.203E-28 |
| ce141 | 2.944E-25 | 2.821E-25 | 2.563E-25 | 1.765E-25 | 6.208E-26 | 1.691E-26 | 7.358E-29 | 3.067E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 1.928E-27 | 1.907E-27 | 1.861E-27 | 1.694E-27 | 1.301E-27 | 9.362E-28 | 2.368E-28 | 3.312E-29 | 4.631E-30 | 6.440E-31 | 1.487E-31 | 9.005E-32 | 1.259E-32 | 1.761E-33 |
| tm171 | 4.553E-25 | 4.546E-25 | 4.523E-25 | 4.446E-25 | 4.236E-25 | 3.988E-25 | 3.099E-25 | 2.161E-25 | 1.506E-25 | 1.049E-25 | 7.313E-26 | 5.098E-26 | 3.554E-26 | 2.477E-26 |
| lu172 | 3.108E-23 | 3.107E-23 | 3.102E-23 | 3.060E-23 | 2.914E-23 | 2.739E-23 | 2.094E-23 | 1.446E-23 | 9.983E-24 | 6.885E-24 | 5.225E-24 | 4.754E-24 | 3.282E-24 | 2.266E-24 |
| lu172m | 5.351E-25 | 5.340E-25 | 5.315E-25 | 5.222E-25 | 4.969E-25 | 4.670E-25 | 3.605E-25 | 2.489E-25 | 1.719E-25 | 1.185E-25 | 8.995E-26 | 8.185E-26 | 5.651E-26 | 3.902E-26 |
| lu173 | 1.101E-19 | 1.098E-19 | 1.091E-19 | 1.065E-19 | 9.952E-20 | 9.146E-20 | 6.424E-20 | 3.875E-20 | 2.337E-20 | 1.408E-20 | 9.657E-21 | 8.489E-21 | 5.120E-21 | 3.088E-21 |
| lu174 | 1.059E-19 | 1.058E-19 | 1.056E-19 | 1.049E-19 | 1.027E-19 | 9.978E-20 | 8.746E-20 | 7.134E-20 | 5.794E-20 | 4.698E-20 | 4.020E-20 | 3.811E-20 | 3.092E-20 | 2.508E-20 |
| lu174m | 3.330E-20 | 3.297E-20 | 3.226E-20 | 2.962E-20 | 2.332E-20 | 1.731E-20 | 4.986E-21 | 8.394E-22 | 1.413E-22 | 2.368E-23 | 6.276E-24 | 3.986E-24 | 6.710E-25 | 1.130E-25 |
| lu176 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 | 2.708E-26 |
| lu177 | 1.444E-19 | 1.432E-19 | 1.404E-19 | 1.304E-19 | 1.054E-19 | 8.095E-20 | 2.809E-20 | 5.558E-21 | 1.148E-21 | 2.362E-22 | 7.294E-23 | 4.881E-23 | 1.008E-23 | 2.083E-24 |
| lu177m | 8.834E-19 | 8.758E-19 | 8.590E-19 | 7.964E-19 | 6.445E-19 | 4.952E-19 | 1.646E-19 | 3.400E-20 | 7.024E-21 | 1.445E-21 | 4.462E-22 | 2.986E-22 | 6.169E-23 | 1.274E-23 |
| hf172 | 2.783E-24 | 2.777E-24 | 2.765E-24 | 2.716E-24 | 2.584E-24 | 2.429E-24 | 1.875E-24 | 1.295E-24 | 8.939E-25 | 6.166E-25 | 4.678E-25 | 4.257E-25 | 2.939E-25 | 2.029E-25 |
| hf174 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 | 3.437E-29 |
| hf175 | 4.660E-16 | 4.569E-16 | 4.370E-16 | 3.675E-16 | 2.262E-16 | 1.236E-16 | 9.898E-18 | 2.666E-19 | 7.181E-21 | 1.915E-22 | 1.296E-23 | 5.159E-24 | 1.390E-25 | 3.743E-27 |
| hf177m | 4.259E-18 | 4.223E-18 | 4.141E-18 | 3.840E-18 | 3.107E-18 | 2.387E-18 | 7.933E-19 | 1.639E-19 | 3.387E-20 | 6.967E-21 | 2.151E-21 | 1.439E-21 | 2.974E-22 | 6.145E-23 |
| hf181 | 3.882E-17 | 3.757E-17 | 3.490E-17 | 2.622E-17 | 1.177E-17 | 4.339E-18 | 6.707E-20 | 1.716E-22 | 4.390E-25 | 1.105E-27 | 1.293E-29 | 2.827E-30 | 7.231E-33 | 0.000E+00 |
| hf182 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 | 5.986E-24 |
| ta179 | 8.855E-23 | 8.836E-23 | 8.795E-23 | 8.636E-23 | 8.206E-23 | 7.700E-23 | 5.902E-23 | 4.034E-23 | 2.757E-23 | 1.882E-23 | 1.417E-23 | 1.286E-23 | 8.792E-24 | 6.009E-24 |
| ta182 | 6.877E-16 | 6.794E-16 | 6.612E-16 | 5.949E-16 | 4.425E-16 | 3.061E-16 | 6.559E-17 | 7.231E-18 | 7.973E-19 | 8.739E-20 | 1.692E-20 | 9.662E-21 | 1.092E-21 | 1.470E-22 |
| ta183 | 4.458E-29 | 3.397E-29 | 1.843E-29 | 1.708E-30 | 2.189E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| w181 | 2.214E-20 | 2.189E-20 | 2.133E-20 | 1.930E-20 | 1.458E-20 | 1.029E-20 | 2.393E-21 | 2.968E-22 | 3.680E-23 | 4.537E-24 | 9.577E-25 | 5.626E-25 | 6.977E-26 | 8.651E-27 |
| w185 | 1.557E-17 | 1.528E-17 | 1.466E-17 | 1.247E-17 | 7.935E-18 | 4.519E-18 | 4.294E-19 | 1.478E-20 | 5.090E-22 | 1.736E-23 | 1.411E-24 | 5.979E-25 | 2.058E-26 | 7.087E-28 |
| w188 | 2.203E-19 | 2.160E-19 | 2.065E-19 | 1.736E-19 | 1.067E-19 | 5.820E-20 | 4.622E-21 | 1.231E-22 | 3.278E-24 | 8.644E-26 | 5.798E-27 | 2.302E-27 | 6.130E-29 | 1.632E-30 |
| re183 | 2.187E-23 | 2.144E-23 | 2.050E-23 | 1.724E-23 | 1.061E-23 | 5.801E-24 | 4.644E-25 | 1.251E-26 | 3.369E-28 | 8.987E-30 | 6.079E-31 | 2.421E-31 | 6.520E-33 | 1.756E-34 |
| re184 | 1.246E-20 | 1.232E-20 | 1.201E-20 | 1.094E-20 | 8.611E-21 | 6.563E-21 | 2.276E-21 | 1.108E-22 | 1.143E-23 | 1.548E-23 | 8.321E-24 | 5.682E-24 | 1.276E-24 | 2.856E-25 |
| re184m | 6.475E-21 | 6.422E-21 | 6.305E-21 | 5.868E-21 | 4.800E-21 | 3.737E-21 | 1.313E-21 | 2.939E-22 | 6.577E-23 | 1.466E-23 | 4.804E-24 | 3.280E-24 | 7.341E-25 | 1.643E-25 |
| re186 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.128E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 | 6.127E-23 |
| re186m | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 | 2.452E-23 |
| re187 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 | 8.662E-28 |
| re188 | 1.840E-18 | 1.803E-18 | 1.725E-18 | 1.449E-18 | 8.908E-19 | 4.860E-19 | 3.860E-20 | 1.028E-21 | 2.737E-23 | 7.218E-25 | 4.841E-26 | 1.922E-26 | 0.000E+00 | 0.000E+00 |
| os185 | 1.191E-19 | 1.174E-19 | 1.135E-19 | 9.971E-20 | 6.937E-20 | 4.416E-20 | 6.681E-21 | 4.477E-22 | 3.000E-23 | 1.995E-24 | 2.662E-25 | 1.337E-25 | 8.957E-27 | 6.001E-28 |
| os186 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E-29 | 5.151E

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg194 | 7.169E-27 | 7.169E-27 | 7.169E-27 | 7.168E-27 | 7.167E-27 | 7.165E-27 | 7.157E-27 | 7.146E-27 | 7.135E-27 | 7.124E-27 | 7.116E-27 | 7.113E-27 | 7.102E-27 | 7.091E-27 |
| hg203 | 2.708E-18 | 2.629E-18 | 2.458E-18 | 1.895E-18 | 9.141E-19 | 3.689E-19 | 8.306E-21 | 3.641E-23 | 1.596E-25 | 6.893E-28 | 1.205E-29 | 3.022E-30 | 1.325E-32 | 0.000E+00 |
| tl202 | 8.997E-27 | 8.039E-27 | 6.239E-27 | 2.329E-27 | 1.476E-28 | 4.809E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 5.271E-32 | 0.000E+00 | 0.000E+00 |
| tl204 | 5.338E-19 | 5.332E-19 | 5.320E-19 | 5.274E-19 | 5.146E-19 | 4.991E-19 | 4.391E-19 | 3.657E-19 | 3.045E-19 | 2.534E-19 | 2.211E-19 | 2.110E-19 | 1.757E-19 | 1.463E-19 |
| total | 2.816E-07 | 2.815E-07 | 2.813E-07 | 2.806E-07 | 2.786E-07 | 2.760E-07 | 2.657E-07 | 2.516E-07 | 2.382E-07 | 2.256E-07 | 2.166E-07 | 2.136E-07 | 2.023E-07 | 1.917E-07 |

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5 more years for cooling used fuel material light elements page 11

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element thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 2.742E-07 | 2.741E-07 | 2.739E-07 | 2.732E-07 | 2.711E-07 | 2.686E-07 | 2.583E-07 | 2.441E-07 | 2.308E-07 | 2.181E-07 | 2.092E-07 | 2.062E-07 | 1.949E-07 | 1.843E-07 |
| be | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 | 5.281E-11 |
| c | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.369E-09 | 7.368E-09 | 7.367E-09 | 7.366E-09 | 7.366E-09 | 7.365E-09 | 7.365E-09 | 7.364E-09 | 7.363E-09 |
| na | 1.165E-22 | 1.163E-22 | 1.159E-22 | 1.144E-22 | 1.104E-22 | 1.056E-22 | 8.771E-23 | 6.721E-23 | 5.151E-23 | 3.944E-23 | 3.235E-23 | 3.023E-23 | 2.316E-23 | 1.775E-23 |
| al | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 | 1.080E-26 |
| si | 2.247E-24 | 2.247E-24 | 2.247E-24 | 2.246E-24 | 2.245E-24 | 2.243E-24 | 2.236E-24 | 2.226E-24 | 2.216E-24 | 2.206E-24 | 2.198E-24 | 2.196E-24 | 2.186E-24 | 2.176E-24 |
| p | 3.160E-21 | 2.982E-21 | 2.617E-21 | 1.589E-21 | 4.171E-22 | 9.596E-23 | 2.278E-23 | 2.261E-23 | 2.251E-23 | 2.240E-23 | 2.233E-23 | 2.230E-23 | 2.220E-23 | 2.210E-23 |
| s | 6.599E-19 | 6.495E-19 | 6.268E-19 | 5.457E-19 | 3.701E-19 | 2.283E-19 | 3.029E-20 | 1.682E-21 | 9.336E-23 | 5.142E-24 | 5.963E-25 | 2.855E-25 | 1.585E-26 | 8.797E-28 |
| cl | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 | 2.896E-21 |
| ar | 8.447E-20 | 8.432E-20 | 8.400E-20 | 8.300E-20 | 8.149E-20 | 8.082E-20 | 8.040E-20 | 8.019E-20 | 7.999E-20 | 7.978E-20 | 7.963E-20 | 7.958E-20 | 7.937E-20 | 7.917E-20 |
| k | 3.034E-23 | 3.034E-23 | 3.034E-23 | 3.034E-23 | 3.033E-23 | 3.033E-23 | 3.031E-23 | 3.029E-23 | 3.027E-23 | 3.025E-23 | 3.024E-23 | 3.023E-23 | 3.021E-23 | 3.019E-23 |
| ca | 1.264E-18 | 1.253E-18 | 1.230E-18 | 1.141E-18 | 9.260E-19 | 7.140E-19 | 2.408E-19 | 5.081E-20 | 1.072E-20 | 2.253E-21 | 7.075E-22 | 4.762E-22 | 1.012E-22 | 2.212E-23 |
| sc | 3.188E-16 | 3.136E-16 | 3.021E-16 | 2.614E-16 | 1.743E-16 | 1.052E-16 | 1.276E-17 | 6.233E-19 | 3.043E-20 | 1.474E-21 | 1.553E-22 | 7.196E-23 | 3.514E-24 | 1.716E-25 |
| v | 1.778E-22 | 1.770E-22 | 1.753E-22 | 1.690E-22 | 1.525E-22 | 1.341E-22 | 7.852E-23 | 3.648E-23 | 1.695E-23 | 7.856E-24 | 4.437E-24 | 3.649E-24 | 1.695E-24 | 7.876E-25 |
| cr | 6.247E-20 | 5.942E-20 | 5.310E-20 | 3.427E-20 | 1.066E-20 | 2.185E-21 | 5.192E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 1.385E-17 | 1.379E-17 | 1.365E-17 | 1.313E-17 | 1.178E-17 | 1.028E-17 | 5.837E-18 | 2.595E-18 | 1.153E-18 | 5.116E-19 | 2.796E-19 | 2.274E-19 | 1.011E-19 | 4.493E-20 |
| fe | 8.363E-18 | 8.113E-18 | 7.579E-18 | 5.824E-18 | 2.830E-18 | 1.223E-18 | 1.990E-19 | 1.399E-19 | 1.087E-19 | 8.437E-20 | 6.990E-20 | 6.554E-20 | 5.092E-20 | 3.956E-20 |
| co | 2.633E-15 | 2.631E-15 | 2.627E-15 | 2.610E-15 | 2.563E-15 | 2.507E-15 | 2.287E-15 | 2.005E-15 | 1.758E-15 | 1.541E-15 | 1.397E-15 | 1.351E-15 | 1.185E-15 | 1.039E-15 |
| ni | 1.670E-19 | 1.670E-19 | 1.670E-19 | 1.669E-19 | 1.668E-19 | 1.666E-19 | 1.658E-19 | 1.647E-19 | 1.636E-19 | 1.625E-19 | 1.617E-19 | 1.614E-19 | 1.604E-19 | 1.593E-19 |
| zn | 5.393E-20 | 5.363E-20 | 5.295E-20 | 5.038E-20 | 4.383E-20 | 3.685E-20 | 1.786E-20 | 6.329E-21 | 2.243E-21 | 7.929E-22 | 3.661E-22 | 2.810E-22 | 9.962E-23 | 3.531E-23 |
| sn | 5.160E-24 | 5.159E-24 | 5.156E-24 | 5.146E-24 | 5.120E-24 | 5.090E-24 | 4.988E-24 | 4.878E-24 | 4.788E-24 | 4.708E-24 | 4.651E-24 | 4.632E-24 | 4.558E-24 | 4.486E-24 |
| sb | 3.769E-22 | 3.685E-22 | 3.503E-22 | 2.878E-22 | 1.670E-22 | 8.642E-23 | 1.060E-23 | 5.092E-24 | 3.887E-24 | 3.021E-24 | 2.505E-24 | 2.350E-24 | 1.828E-24 | 1.422E-24 |
| te | 8.580E-20 | 8.430E-20 | 8.104E-20 | 6.964E-20 | 4.626E-20 | 2.866E-20 | 2.029E-21 | 5.619E-22 | 6.699E-23 | 8.138E-24 | 1.799E-24 | 1.107E-24 | 2.357E-25 | 1.086E-25 |
| i | 5.240E-23 | 5.119E-23 | 4.857E-23 | 3.959E-23 | 2.235E-23 | 1.097E-23 | 5.595E-25 | 7.907E-27 | 1.123E-28 | 2.090E-30 | 5.944E-31 | 5.512E-31 | 5.294E-31 | 5.291E-31 |
| xe | 1.568E-22 | 1.508E-22 | 1.383E-22 | 9.876E-23 | 3.874E-23 | 1.212E-23 | 9.433E-26 | 9.037E-29 | 8.658E-32 | 8.139E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 3.932E-19 | 3.924E-19 | 3.907E-19 | 3.842E-19 | 3.672E-19 | 3.472E-19 | 2.747E-19 | 1.964E-19 | 1.404E-19 | 1.003E-19 | 7.814E-20 | 7.174E-20 | 5.129E-20 | 3.668E-20 |
| ba | 3.331E-20 | 3.312E-20 | 3.276E-20 | 3.196E-20 | 3.132E-20 | 3.096E-20 | 2.957E-20 | 2.768E-20 | 2.592E-20 | 2.426E-20 | 2.310E-20 | 2.272E-20 | 2.127E-20 | 1.991E-20 |
| la | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 | 2.128E-21 |
| ce | 9.705E-23 | 9.606E-23 | 9.389E-23 | 8.591E-23 | 6.705E-23 | 4.997E-23 | 1.064E-23 | 2.117E-24 | 3.854E-25 | 5.468E-26 | 1.390E-26 | 8.700E-27 | 1.384E-27 | 2.203E-28 |
| tm | 4.572E-25 | 4.563E-25 | 4.542E-25 | 4.463E-25 | 4.249E-25 | 3.997E-25 | 3.102E-25 | 2.161E-25 | 1.506E-25 | 1.049E-25 | 8.017E-26 | 7.313E-26 | 5.098E-26 | 3.554E-26 |
| lu | 1.277E-18 | 1.268E-18 | 1.246E-18 | 1.168E-18 | 9.754E-19 | 7.847E-19 | 3.482E-19 | 1.505E-19 | 8.963E-20 | 6.277E-20 | 5.039E-20 | 4.696E-20 | 3.611E-20 | 2.819E-20 |
| hf | 5.091E-16 | 4.987E-16 | 4.760E-16 | 3.975E-16 | 2.411E-16 | 1.304E-16 | 1.076E-17 | 4.307E-19 | 4.105E-20 | 7.165E-21 | 2.171E-21 | 1.451E-21 | 3.038E-22 | 6.764E-23 |
| ta | 6.877E-16 | 6.794E-16 | 6.612E-16 | 5.949E-16 | 4.425E-16 | 3.061E-16 | 6.559E-17 | 7.231E-18 | 7.973E-19 | 8.741E-20 | 1.694E-20 | 9.675E-21 | 1.101E-21 | 1.530E-22 |
| w | 1.581E-17 | 1.552E-17 | 1.489E-17 | 1.267E-17 | 8.056E-18 | 4.587E-18 | 4.364E-19 | 1.520E-20 | 5.491E-22 | 2.199E-23 | 2.374E-24 | 1.163E-24 | 9.041E-26 | 9.361E-27 |
| re | 1.859E-18 | 1.822E-18 | 1.743E-18 | 1.466E-18 | 9.043E-19 | 4.964E-19 | 4.227E-20 | 1.918E-21 | 2.932E-22 | 1.266E-22 | 9.896E-23 | 9.477E-23 | 8.780E-23 | 8.624E-23 |
| os | 1.191E-19 | 1.174E-19 | 1.135E-19 | 9.972E-20 | 6.938E-20 | 4.416E-20 | 6.687E-21 | 4.528E-22 | 3.456E-23 | 6.063E-24 | 3.999E-24 | 3.758E-24 | 3.238E-24 | 2.878E-24 |
| ir | 2.458E-16 | 2.412E-16 | 2.312E-16 | 1.962E-16 | 1.238E-16 | 6.985E-17 | 6.374E-18 | 2.072E-19 | 5.813E-21 | 2.930E-22 | 8.706E-23 | 7.522E-23 | 6.098E-23 | 5.414E-23 |
| pt | 5.868E-19 | 5.867E-19 | 5.866E-19 | 5.863E-19 | 5.852E-19 | 5.838E-19 | 5.782E-19 | 5.702E-19 | 5.624E-19 | 5.546E-19 | 5.489E-19 | 5.470E-19 | 5.395E-19 | 5.321E-19 |
| au | 1.104E-20 | 1.096E-20 | 1.077E-20 | 1.009E-20 | 8.411E-21 | 6.702E-21 | 2.593E-21 | 6.664E-22 | 1.717E-22 | 4.455E-23 | 1.669E-23 | 1.205E-23 | 3.699E-24 | 1.554E-24 |
| hg | 2.708E-18 | 2.629E-18 | 2.458E-18 | 1.895E-18 | 9.141E-19 | 3.689E-19 | 8.306E-21 | 3.642E-23 | 1.667E-25 | 7.813E-27 | 7.128E-27 | 7.116E-27 | 7.102E-27 | 7.091E-27 |
| tl | 5.338E-19 | 5.332E-19 | 5.320E-19 | 5.274E-19 | 5.146E-19 | 4.991E-19 | 4.391E-19 | 3.657E-19 | 3.045E-19 | 2.534E-19 | 2.211E-19 | 2.110E-19 | 1.757E-19 | 1.463E-19 |
| totals | 2.816E-07 | 2.815E-07 | 2.813E-07 | 2.806E-07 | 2.786E-07 | 2.760E-07 | 2.657E-07 | 2.516E-07 | 2.382E-07 | 2.256E-07 | 2.166E-07 | 2.136E-07 | 2.023E-07 | 1.917E-07 |

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5 more years for cooling used fuel material actinides page 12

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he 4 | 3.983E-02 | 3.990E-02 | 4.004E-02 | 4.058E-02 | 4.194E-02 | 4.336E-02 | 4.735E-02 | 5.077E-02 | 5.350E-02 | 5.612E-02 | 5.806E-02 | 5.873E-02 | 6.137E-02 | 6.403E-02 |
| li 6 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 | 5.356E-17 |
| li 7 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 |
| tl207 | 3.833E-18 | 3.833E-18 | 3.838E-18 | 3.910E-18 | 4.257E-18 | 4.727E-18 | 7.054E-18 | 9.910E-18 | 1.279E-17 | 1.570E-17 | 1.787E-17 | 1.826E-17 | 2.155E-17 | 2.481E-17 |
| tl208 | 4.654E-14 | 4.674E-14 | 4.685E-14 | 4.881E-14 | 5.620E-14 | 6.464E-14 | 1.029E-13 | 1.616E-13 | 2.192E-13 | 2.722E-13 | 3.076E-13 | 3.191E-13 | 3.581E-13 | 3.908E-13 |
| pb204 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 | 5.562E-15 |
| pb205 | 1.805E-17 | 1.805E-17 | 1.805E-17 | 1.805E-17 | 1.805E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.806E-17 | 1.807E-17 |
| pb206 | 2.737E-14 | 2.748E-14 | 2.774E-14 | 2.875E-14 | 3.164E-14 | 3.539E-14 | 5.169E-14 | 7.546E-14 | 9.924E-14 | 1.232E-13 | 1.412E-13 | 1.475E-13 | 1.726E-13 | 1.990E-13 |
| pb207 | 9.502E-13 | 9.518E-13 | 9.554E-13 | 9.696E-13 | 1.012E-12 | 1.069E-12 | 1.382E-12 | 2.019E-12 | 2.875E-12 | 3.955E-12 | 4.903E-12 | 5.254E-12 | 6.776E-12 | 8.526E-12 |
| pb208 | 1.184E-08 | 1.192E-08 | 1.212E-08 | 1.291E-08 | 1.524E-08 | 1.856E-08 | 3.780E-08 | 8.154E-08 | 1.447E-07 | 2.265E-07 | 2.982E-07 | 3.247E-07 | 4.370E-07 | 5.614E-07 |
| pb209 | 2.232E-16 | 2.233E-16 | 2.232E-16 | 2.230E-16 | 2.230E-16 | 2.232E-16 | 2.244E-16 | 2.261E-16 | 2.280E-16 | 2.301E-16 | 2.318E-16 | 2.321E-16 | 2.348E-16 | 2.375E-16 |
| pb210 | 7.962E-13 | 7.961E-13 | 7.959E-13 | 7.952E-13 | 7.931E-13 | 7.906E-13 | 7.816E-13 | 7.702E-13 | 7.588E-13 | 7.481E-13 | 7.398E-13 | 7.371E-13 | 8.103E-13 | 8.848E-13 |
| pb211 | 2.965E-17 | 2.965E-17 | 2.969E-17 | 3.025E-17 | 3.293E-17 | 3.657E-17 | 5.457E-17 | 7.666E-17 | 9.894E-17 | 1.214E-16 | 1.383E-16 | 1.412E-16 | 1.667E-16 | 1.896E-16 |
| pb212 | 2.760E-11 | 2.759E-11 | 2.778E-11 | 2.894E-11 | 3.333E-11 | 3.833E-11 | 6.103E-11 | 9.585E-11 | 1.300E-10 | 1.614E-10 | 1.824E-10 | 1.892E-10 | 2.123E-10 | 2.318E-10 |
| bi208 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 | 1.704E-17 |
| bi209 | 1.529E-12 | 1.531E-12 | 1.536E-12 | 1.556E-12 | 1.612E-12 | 1.682E-12 | 1.974E-12 | 2.394E-12 | 2.818E-12 | 3.246E-12 | 3.568E-12 | 3.678E-12 | 4.114E-12 | 4.554E-12 |
| bi210m | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 | 2.272E-17 |
| bi210 | 4.924E-16 | 4.923E-16 | 4.922E-16 | 4.917E-16 | 4.904E-16 | 4.891E-16 | 4.838E-16 | 4.800E-16 | 4.816E-16 | 4.899E-16 | 5.012E-16 | 5.062E-16 | 5.320E-16 | 5.688E-16 |
| bi211 | 1.758E-18 | 1.758E-18 | 1.760E-18 | 1.793E-18 | 1.952E-18 | 2.168E-18 | 3.232E-18 | 4.545E-18 | 5.865E-18 | 7.198E-18 | 8.196E-18 | 8.371E-18 | 9.884E-18 | 1.124E-17 |
| bi212 | 2.618E-12 | 2.629E-12 | 2.635E-12 | 2.745E-12 | 3.161E-12 | 3.635E-12 | 5.788E-12 | 9.091E-12 | 1.233E-11 | 1.531E-11 | 1.730E-11 | 1.795E-11 | 2.014E-11 | 2.198E-11 |
| bi213 | 5.314E-17 | 5.314E-17 | 5.312E-17 | 5.308E-17 | 5.307E-17 | 5.313E-17 | 5.342E-17 | 5.382E-17 | 5.427E-17 | 5.477E-17 | 5.517E-17 | 5.526E-17 | 5.590E-17 | 5.653E-17 |
| po210 | 1.157E-14 | 1.159E-14 | 1.164E-14 | 1.180E-14 | 1.218E-14 | 1.249E-14 | 1.302E-14 | 1.309E-14 | 1.310E-14 | 1.323E-14 | 1.344E-14 | 1.354E-14 | 1.412E-14 | 1.496E-14 |
| po216 | 1.064E-16 | 1.065E-16 | 1.071E-16 | 1.116E-16 | 1.285E-16 | 1.478E-16 | 2.354E-16 | 3.697E-16 | 5.014E-16 | 6.226E-16 | 7.034E-16 | 7.297E-16 | 8.189E-16 | 8.939E-16 |
| rn220 | 4.157E-14 | 4.158E-14 | 4.181E-14 | 4.360E-14 | 5.020E-14 | 5.774E-14 | 9.192E-14 | 1.444E-13 | 1.958E-13 | 2.431E-13 | 2.747E-13 | 2.850E-13 | 3.198E-13 | 3.491E-13 |
| rn222 | 1.370E-16 | 1.371E-16 | 1.375E-16 | 1.408E-16 | 1.526E-16 | 1.664E-16 | 2.329E-16 | 3.548E-16 | 5.117E-16 | 7.081E-16 | 8.820E-16 | 9.473E-16 | 1.234E-15 | 1.571E-15 |
| fr221 | 5.926E-18 | 5.927E-18 | 5.924E-18 | 5.918E-18 | 5.919E-18 | 5.925E-18 | 5.957E-18 | 6.000E-18 | 6.053E-18 | 6.108E-18 | 6.153E-18 | 6.163E-18 | 6.234E-18 | 6.305E-18 |
| ra223 | 1.429E-14 | 1.429E-14 | 1.430E-14 | 1.458E-14 | 1.587E-14 | 1.762E-14 | 2.629E-14 | 3.694E-14 | 4.767E-14 | 5.851E-14 | 6.662E-14 | 6.804E-14 | 8.034E-14 | 9.135E-14 |
| ra224 | 2.407E-10 | 2.408E-10 | 2.421E-10 | 2.525E-10 | 2.907E-10 | 3.343E-10 | 5.323E-10 | 8.361E-10 | 1.134E-09 | 1.408E-09 | 1.591E-09 | 1.650E-09 | 1.852E-09 | 2.022E-09 |
| ra225 | 2.638E-14 | 2.638E-14 | 2.638E-14 | 2.638E-14 | 2.639E-14 | 2.642E-14 | 2.656E-14 | 2.676E-14 | 2.698E-14 | 2.723E-14 | 2.743E-14 | 2.748E-14 | 2.779E-14 | 2.811E-14 |
| ra226 | 2.132E-11 | 2.138E-11 | 2.152E-11 | 2.209E-11 | 2.374E-11 | 2.589E-11 | 3.625E-11 | 5.521E-11 | 7.961E-11 | 1.102E-10 | 1.372E-10 | 1.474E-10 | 1.919E-10 | 2.444E-10 |
| ra228 | 4.784E-16 | 4.789E-16 | 4.800E-16 | 4.842E-16 | 4.960E-16 | 5.106E-16 | 5.702E-16 | 6.523E-16 | 7.311E-16 | 8.070E-16 | 8.617E-16 | 8.801E-16 | 9.508E-16 | 1.020E-15 |
| ac225 | 1.773E-14 | 1.773E-14 | 1.772E-14 | 1.771E-14 | 1.771E-14 | 1.773E-14 | 1.782E-14 | 1.796E-14 | 1.811E-14 | 1.828E-14 | 1.841E-14 | 1.844E-14 | 1.865E-14 | 1.886E-14 |
| ac227 | 1.062E-11 | 1.066E-11 | 1.075E-11 | 1.111E-11 | 1.211E-11 | 1.336E-11 | 1.859E-11 | 2.612E-11 | 3.370E-11 | 4.136E-11 | 4.708E-11 | 4.905E-11 | 5.678E-11 | 6.457E-11 |
| th227 | 2.334E-14 | 2.344E-14 | 2.365E-14 | 2.447E-14 | 2.678E-14 | 2.967E-14 | 4.313E-14 | 6.061E-14 | 7.822E-14 | 9.600E-14 | 1.093E-13 | 1.124E-13 | 1.318E-13 | 1.499E-13 |
| th228 | 4.663E-08 | 4.688E-08 | 4.745E-08 | 4.971E-08 | 5.620E-08 | 6.465E-08 | 1.031E-07 | 1.620E-07 | 2.197E-07 | 2.726E-07 | 3.079E-07 | 3.190E-07 | 3.585E-07 | 3.913E-07 |
| th229 | 4.828E-09 | 4.828E-09 | 4.829E-09 | 4.830E-09 | 4.835E-09 | 4.840E-09 | 4.863E-09 | 4.900E-09 | 4.941E-09 | 4.987E-09 | 5.023E-09 | 5.036E-09 | 5.089E-09 | 5.147E-09 |
| th230 | 1.295E-06 | 1.297E-06 | 1.303E-06 | 1.325E-06 | 1.388E-06 | 1.468E-06 | 1.824E-06 | 2.392E-06 | 3.031E-06 | 3.743E-06 | 4.317E-06 | 4.523E-06 | 5.372E-06 | 6.290E-06 |
| th231 | 5.915E-11 | 5.915E-11 | 5.915E-11 | 5.915E-11 | 5.915E-11 | 5.916E-11 | 5.917E-11 | 5.920E-11 | 5.923E-11 | 5.926E-11 | 5.928E-11 | 5.928E-11 | 5.931E-11 | 5.934E-11 |
| th232 | 3.013E-06 | 3.014E-06 | 3.016E-06 | 3.022E-06 | 3.039E-06 | 3.061E-06 | 3.151E-06 | 3.280E-06 | 3.410E-06 | 3.541E-06 | 3.638E-06 | 3.672E-06 | 3.803E-06 | 3.935E-06 |
| th234 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.009E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 | 2.008E-07 |
| pa230 | 4.356E-17 | 4.023E-17 | 3.362E-17 | 1.675E-17 | 2.378E-18 | 2.093E-19 | 8.112E-24 | 3.930E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 3.744E-07 | 3.744E-07 | 3.746E-07 | 3.753E-07 | 3.773E-07 | 3.797E-07 | 3.896E-07 | 4.037E-07 | 4.179E-07 | 4.320E-07 | 4.426E-07 | 4.463E-07 | 4.604E-07 | 4.746E-07 |
| pa232 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.482E-16 | 2.481E-16 | 2.481E-16 | 2.481E-16 | 2.481E-16 |
| pa233 | 9.256E-08 | 9.256E-08 | 9.257E-08 | 9.258E-08 | 9.262E-08 | 9.268E-08 | 9.300E-08 | 9.370E-08 | 9.453E-08 | 9.553E-08 | 9.624E-08 | 9.655E-08 | 9.800E-08 | 9.947E-08 |
| pa234m | 6.705E-12 | 6.705E-12 | 6.705E-12 | 6.705E-12 | 6.705E-12 | 6.705E-12 | 6.710E-12 | 6.705E-12 | 6.705E-12 | 6.705E-12 | 6.708E-12 | 6.705E-12 | 6.705E-12 | 6.705E-12 |
| pa234 | 3.721E-12 | 3.719E-12 | 3.721E-12 | 3.721E-12 | 3.721E-12 | 3.721E-12 | 3.723E-12 | 3.721E-12 | 3.721E-12 | 3.721E-12 | 3.723E-12 | 3.721E-12 | 3.721E-12 | 3.721E-12 |
| u230 | 9.694E-17 | 9.094E-17 | 7.875E-17 | 4.492E-17 | 9.201E-18 | 1.254E-18 | 2.722E-22 | 1.420E-27 | 7.409E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 6.388E-06 | 6.407E-06 | 6.449E-06 | 6.613E-06 | 7.062E-06 | 7.600E-06 | 9.611E-06 | 1.192E-05 | 1.369E-05 | 1.503E-05 | 1.582E-05 | 1.605E-05 | 1.680E-05 | 1.734E-05 |
| u233 | 7.298E-06 | 7.303E-06 | 7.314E-06 | 7.355E-06 | 7.472E-06 | 7.617E-06 | 8.225E-06 | 9.194E-06 | 1.017E-05 | 1.116E-05 | 1.183E-05 | 1.206E-05 | 1.307E-05 | 1.409E-05 |
| u234 | 1.661E-01 | 1.662E-01 | 1.665E-01 | 1.676E-01 | 1.708E-01 | 1.748E-01 | 1.923E-01 | 2.177E-01 | 2.432E-01 | 2.686E-01 | 2.873E-01 | 2.937E-01 | 3.186E-01 | 3.434E-01 |
| u235 | 1.455E+01 | 1.455E+01 | 1.455E+01 | 1.455E+01 | 1.455E+01 | 1.455E+01 | 1.455E+01 | 1.456E+01 | 1.457E+01 | 1.457E+01 | 1.458E+01 | 1.458E+01 | 1.459E+01 | 1.459E+01 |
| u236 | 4.428E+00 | 4.428E+00 | 4.428E+00 | 4.429E+00 | 4.431E+00 | 4.434E+00 | 4.444E+00 | 4.460E+00 | 4.475E+00 | 4.491E+00 | 4.502E+00 | 4.506E+00 | 4.522E+00 | 4.537E+00 |

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5 more years for cooling used fuel material actinides page 13

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 2.453E-06 | 2.452E-06 | 2.451E-06 | 2.445E-06 | 2.429E-06 | 2.410E-06 | 2.329E-06 | 2.219E-06 | 2.114E-06 | 2.014E-06 | 1.942E-06 | 1.919E-06 | 1.828E-06 | 1.741E-06 |
| u238 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 | 1.383E+04 |
| u240 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 | 3.302E-14 |
| np235 | 3.541E-08 | 3.529E-08 | 3.501E-08 | 3.396E-08 | 3.117E-08 | 2.801E-08 | 1.793E-08 | 9.468E-09 | 4.999E-09 | 2.635E-09 | 1.637E-09 | 1.391E-09 | 7.347E-10 | 3.880E-10 |
| np236 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 | 5.343E-06 |
| np237 | 2.734E+00 | 2.734E+00 | 2.734E+00 | 2.735E+00 | 2.736E+00 | 2.738E+00 | 2.748E+00 | 2.767E+00 | 2.791E+00 | 2.820E+00 | 2.846E+00 | 2.855E+00 | 2.904E+00 | 2.937E+00 |
| np238 | 1.218E-08 | 1.218E-08 | 1.218E-08 | 1.217E-08 | 1.217E-08 | 1.216E-08 | 1.211E-08 | 1.206E-08 | 1.200E-08 | 1.194E-08 | 1.189E-08 | 1.188E-08 | 1.182E-08 | 1.176E-08 |
| np239 | 5.034E-06 | 5.034E-06 | 5.034E-06 | 5.034E-06 | 5.034E-06 | 5.033E-06 | 5.033E-06 | 5.033E-06 | 5.032E-06 | 5.032E-06 | 5.031E-06 | 5.031E-06 | 5.031E-06 | 5.030E-06 |
| np240m | 2.818E-16 | 2.821E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 | 2.818E-16 |
| np240 | 2.899E-18 | 2.902E-18 | 2.900E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 | 2.899E-18 |
| pu236 | 1.479E-05 | 1.477E-05 | 1.473E-05 | 1.456E-05 | 1.409E-05 | 1.353E-05 | 1.142E-05 | 8.965E-06 | 7.036E-06 | 5.518E-06 | 4.606E-06 | 4.330E-06 | 3.398E-06 | 2.667E-06 |
| pu237 | 2.688E-07 | 2.608E-07 | 2.435E-07 | 1.867E-07 | 8.870E-08 | 3.512E-08 | 7.306E-10 | 2.859E-12 | 1.119E-14 | 4.312E-17 | 6.929E-19 | 1.687E-19 | 6.603E-22 | 2.584E-24 |
| pu238 | 2.990E+00 | 2.993E+00 | 3.000E+00 | 3.024E+00 | 3.082E+00 | 3.150E+00 | 3.357E+00 | 3.286E+00 | 3.210E+00 | 3.249E+00 | 3.230E+00 | 3.224E+00 | 3.199E+00 | 3.174E+00 |
| pu239 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 | 2.384E+02 |
| pu240 | 1.491E+02 | 1.491E+02 | 1.491E+02 | 1.491E+02 | 1.491E+02 | 1.491E+02 | 1.492E+02 | 1.492E+02 | 1.493E+02 | 1.494E+02 | 1.494E+02 | 1.494E+02 | 1.495E+02 | 1.495E+02 |
| pu241 | 7.862E+01 | 7.860E+01 | 7.855E+01 | 7.837E+01 | 7.786E+01 | 7.723E+01 | 7.466E+01 | 7.113E+01 | 6.776E+01 | 6.455E+01 | 6.226E+01 | 6.149E+01 | 5.858E+01 | 5.581E+01 |
| pu242 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 | 2.298E+01 |
| pu243 | 7.872E-15 | 7

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cm244 | 2.268E+00 | 2.268E+00 | 2.267E+00 | 2.263E+00 | 2.251E+00 | 2.237E+00 | 2.178E+00 | 2.096E+00 | 2.017E+00 | 1.941E+00 | 1.887E+00 | 1.868E+00 | 1.798E+00 | 1.731E+00 |
| cm245 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.157E-01 | 2.156E-01 | 2.156E-01 | 2.156E-01 | 2.156E-01 | 2.156E-01 |
| cm246 | 1.448E-02 | 1.448E-02 | 1.448E-02 | 1.448E-02 | 1.448E-02 | 1.447E-02 | 1.447E-02 | 1.447E-02 | 1.447E-02 | 1.447E-02 | 1.447E-02 | 1.446E-02 | 1.446E-02 | 1.446E-02 |
| cm247 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 | 2.208E-04 |
| cm248 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.420E-05 | 1.421E-05 | 1.421E-05 | 1.421E-05 | 1.421E-05 | 1.421E-05 | 1.421E-05 |
| cm250 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.754E-12 | 1.753E-12 | 1.753E-12 | 1.753E-12 | 1.753E-12 | 1.753E-12 |
| bk247 | 8.721E-15 | 8.721E-15 | 8.721E-15 | 8.721E-15 | 8.720E-15 | 8.719E-15 | 8.716E-15 | 8.712E-15 | 8.708E-15 | 8.703E-15 | 8.700E-15 | 8.699E-15 | 8.694E-15 | 8.690E-15 |
| bk248 | 3.626E-13 | 3.625E-13 | 3.621E-13 | 3.608E-13 | 3.571E-13 | 3.525E-13 | 3.340E-13 | 3.093E-13 | 2.864E-13 | 2.651E-13 | 2.503E-13 | 2.454E-13 | 2.272E-13 | 2.104E-13 |
| bk249 | 1.356E-07 | 1.350E-07 | 1.337E-07 | 1.287E-07 | 1.158E-07 | 1.014E-07 | 5.839E-08 | 2.648E-08 | 1.201E-08 | 5.436E-09 | 3.016E-09 | 2.466E-09 | 1.118E-09 | 5.072E-10 |
| bk250 | 4.569E-07 | 4.546E-07 | 4.495E-07 | 4.302E-07 | 3.803E-07 | 3.262E-07 | 1.719E-07 | 6.869E-08 | 2.747E-08 | 1.098E-08 | 5.574E-09 | 4.425E-09 | 1.805E-09 | 7.581E-20 |
| cf248 | 2.442E-13 | 2.432E-13 | 2.409E-13 | 2.323E-13 | 2.098E-13 | 1.849E-13 | 1.088E-13 | 5.095E-14 | 2.386E-14 | 1.115E-14 | 6.336E-15 | 5.223E-15 | 2.446E-15 | 1.145E-15 |
| cf249 | 1.306E-07 | 1.312E-07 | 1.325E-07 | 1.375E-07 | 1.504E-07 | 1.647E-07 | 2.074E-07 | 2.389E-07 | 2.529E-07 | 2.590E-07 | 2.610E-07 | 2.614E-07 | 2.622E-07 | 2.623E-07 |
| cf250 | 6.596E-08 | 6.594E-08 | 6.589E-08 | 6.573E-08 | 6.526E-08 | 6.469E-08 | 6.234E-08 | 5.912E-08 | 5.607E-08 | 5.317E-08 | 5.111E-08 | 5.043E-08 | 4.783E-08 | 4.536E-08 |
| cf251 | 3.259E-08 | 3.259E-08 | 3.259E-08 | 3.259E-08 | 3.258E-08 | 3.258E-08 | 3.256E-08 | 3.254E-08 | 3.251E-08 | 3.249E-08 | 3.247E-08 | 3.246E-08 | 3.244E-08 | 3.241E-08 |
| cf252 | 1.019E-08 | 1.017E-08 | 1.014E-08 | 1.001E-08 | 9.666E-09 | 9.252E-09 | 7.705E-09 | 5.930E-09 | 4.564E-09 | 3.510E-09 | 2.887E-09 | 2.701E-09 | 2.079E-09 | 1.600E-09 |
| cf253 | 1.486E-15 | 1.375E-15 | 1.154E-15 | 5.840E-16 | 8.674E-17 | 8.076E-18 | 3.954E-22 | 2.677E-28 | 1.812E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 3.889E-14 | 3.801E-14 | 3.610E-14 | 2.954E-14 | 1.685E-14 | 8.378E-15 | 4.511E-16 | 6.889E-18 | 1.052E-19 | 1.588E-21 | 7.039E-23 | 2.425E-23 | 3.703E-25 | 5.655E-27 |
| es252 | 2.611E-17 | 2.603E-17 | 2.586E-17 | 2.521E-17 | 2.346E-17 | 2.144E-17 | 1.474E-17 | 8.622E-18 | 5.043E-18 | 2.945E-18 | 1.975E-18 | 1.720E-18 | 1.007E-18 | 5.892E-19 |
| es253 | 3.037E-14 | 2.849E-14 | 2.466E-14 | 1.405E-14 | 2.861E-15 | 3.850E-16 | 7.644E-20 | 3.388E-25 | 1.453E-30 | 6.022E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 9.557E-14 | 9.509E-14 | 9.402E-14 | 8.997E-14 | 7.954E-14 | 6.823E-14 | 3.594E-14 | 1.436E-14 | 5.735E-15 | 2.285E-15 | 1.153E-15 | 9.127E-16 | 3.646E-16 | 1.456E-16 |
| es255 | 2.248E-16 | 2.171E-16 | 2.007E-16 | 1.480E-16 | 6.304E-17 | 2.179E-17 | 2.568E-19 | 4.454E-22 | 7.728E-25 | 1.318E-27 | 1.155E-29 | 2.286E-30 | 3.966E-33 | 6.880E-36 |
| total | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 |

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5 more years for cooling used fuel material actinides page 14

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element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 3.983E-02 | 3.990E-02 | 4.004E-02 | 4.058E-02 | 4.194E-02 | 4.336E-02 | 4.735E-02 | 5.077E-02 | 5.350E-02 | 5.612E-02 | 5.806E-02 | 5.873E-02 | 6.137E-02 | 6.403E-02 |
| li | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 | 4.364E-16 |
| tl | 4.655E-14 | 4.674E-14 | 4.686E-14 | 4.881E-14 | 5.620E-14 | 6.464E-14 | 1.029E-13 | 1.617E-13 | 2.193E-13 | 2.722E-13 | 3.076E-13 | 3.191E-13 | 3.581E-13 | 3.909E-13 |
| pb | 1.187E-08 | 1.195E-08 | 1.215E-08 | 1.294E-08 | 1.528E-08 | 1.860E-08 | 3.787E-08 | 8.164E-08 | 1.449E-07 | 2.267E-07 | 2.984E-07 | 3.248E-07 | 4.372E-07 | 5.616E-07 |
| bi | 4.147E-12 | 4.160E-12 | 4.172E-12 | 4.302E-12 | 4.774E-12 | 5.318E-12 | 7.763E-12 | 1.149E-11 | 1.515E-11 | 1.856E-11 | 2.087E-11 | 2.162E-11 | 2.425E-11 | 2.654E-11 |
| po | 1.168E-14 | 1.170E-14 | 1.175E-14 | 1.191E-14 | 1.231E-14 | 1.264E-14 | 1.325E-14 | 1.347E-14 | 1.360E-14 | 1.386E-14 | 1.415E-14 | 1.428E-14 | 1.494E-14 | 1.586E-14 |
| rn | 4.171E-14 | 4.172E-14 | 4.195E-14 | 4.374E-14 | 5.035E-14 | 5.790E-14 | 9.216E-14 | 1.447E-13 | 1.963E-13 | 2.438E-13 | 2.756E-13 | 2.859E-13 | 3.211E-13 | 3.507E-13 |
| fr | 6.203E-18 | 6.204E-18 | 6.205E-18 | 6.209E-18 | 6.235E-18 | 6.273E-18 | 6.442E-18 | 6.683E-18 | 6.931E-18 | 7.186E-18 | 7.379E-18 | 7.440E-18 | 7.713E-18 | 7.987E-18 |
| ra | 2.621E-10 | 2.622E-10 | 2.637E-10 | 2.746E-10 | 3.145E-10 | 3.603E-10 | 5.686E-10 | 8.914E-10 | 1.214E-09 | 1.518E-09 | 1.728E-09 | 1.798E-09 | 2.044E-09 | 2.266E-09 |
| ac | 1.064E-11 | 1.068E-11 | 1.077E-11 | 1.113E-11 | 1.213E-11 | 1.338E-11 | 1.860E-11 | 2.614E-11 | 3.372E-11 | 4.138E-11 | 4.710E-11 | 4.907E-11 | 5.680E-11 | 6.459E-11 |
| th | 4.560E-06 | 4.564E-06 | 4.572E-06 | 4.602E-06 | 4.689E-06 | 4.799E-06 | 5.284E-06 | 6.040E-06 | 6.867E-06 | 7.762E-06 | 8.469E-06 | 8.719E-06 | 9.739E-06 | 1.082E-05 |
| pa | 4.669E-07 | 4.670E-07 | 4.672E-07 | 4.679E-07 | 4.699E-07 | 4.724E-07 | 4.826E-07 | 4.974E-07 | 5.124E-07 | 5.276E-07 | 5.389E-07 | 5.428E-07 | 5.584E-07 | 5.741E-07 |
| u | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 | 1.385E+04 |
| np | 2.734E+00 | 2.734E+00 | 2.734E+00 | 2.735E+00 | 2.736E+00 | 2.738E+00 | 2.748E+00 | 2.767E+00 | 2.791E+00 | 2.820E+00 | 2.846E+00 | 2.855E+00 | 2.894E+00 | 2.937E+00 |
| pu | 4.921E+02 | 4.921E+02 | 4.921E+02 | 4.919E+02 | 4.915E+02 | 4.909E+02 | 4.885E+02 | 4.851E+02 | 4.817E+02 | 4.785E+02 | 4.763E+02 | 4.755E+02 | 4.726E+02 | 4.699E+02 |
| am | 1.213E+01 | 1.216E+01 | 1.220E+01 | 1.238E+01 | 1.289E+01 | 1.352E+01 | 1.608E+01 | 1.959E+01 | 2.293E+01 | 2.611E+01 | 2.838E+01 | 2.913E+01 | 3.200E+01 | 3.473E+01 |
| cm | 2.896E+00 | 2.892E+00 | 2.884E+00 | 2.854E+00 | 2.780E+00 | 2.704E+00 | 2.506E+00 | 2.368E+00 | 2.277E+00 | 2.198E+00 | 2.143E+00 | 2.124E+00 | 2.053E+00 | 1.985E+00 |
| bk | 1.356E-07 | 1.350E-07 | 1.337E-07 | 1.287E-07 | 1.158E-07 | 1.014E-07 | 5.839E-08 | 2.648E-08 | 1.201E-08 | 5.436E-09 | 3.016E-09 | 2.466E-09 | 1.119E-09 | 5.074E-10 |
| cf | 2.393E-07 | 2.399E-07 | 2.411E-07 | 2.458E-07 | 2.579E-07 | 2.712E-07 | 3.100E-07 | 3.365E-07 | 3.460E-07 | 3.481E-07 | 3.475E-07 | 3.470E-07 | 3.446E-07 | 3.417E-07 |
| es | 1.262E-13 | 1.238E-13 | 1.189E-13 | 1.042E-13 | 8.249E-14 | 6.866E-14 | 3.595E-14 | 1.436E-14 | 5.740E-15 | 2.288E-15 | 1.155E-15 | 9.144E-16 | 3.656E-16 | 1.462E-16 |
| totals | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 | 1.436E+04 |

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5 more years for cooling used fuel material actinides page 15

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg206 | 1.161E-18 | 1.160E-18 | 1.160E-18 | 1.159E-18 | 1.156E-18 | 1.152E-18 | 1.140E-18 | 1.131E-18 | 1.135E-18 | 1.158E-18 | 1.181E-18 | 1.189E-18 | 1.254E-18 | 1.341E-18 |
| tl206 | 8.185E-17 | 8.187E-17 | 8.183E-17 | 8.173E-17 | 8.151E-17 | 8.130E-17 | 8.041E-17 | 7.978E-17 | 8.005E-17 | 8.142E-17 | 8.330E-17 | 8.414E-17 | 8.842E-17 | 9.454E-17 |
| tl207 | 7.302E-10 | 7.301E-10 | 7.311E-10 | 7.449E-10 | 8.110E-10 | 9.005E-10 | 1.344E-09 | 1.888E-09 | 2.437E-09 | 2.990E-09 | 3.405E-09 | 3.478E-09 | 4.106E-09 | 4.669E-09 |
| tl208 | 1.379E-05 | 1.384E-05 | 1.388E-05 | 1.446E-05 | 1.665E-05 | 1.915E-05 | 3.048E-05 | 4.788E-05 | 6.494E-05 | 8.063E-05 | 9.110E-05 | 9.451E-05 | 1.061E-04 | 1.158E-04 |
| tl209 | 2.264E-11 | 2.265E-11 | 2.264E-11 | 2.262E-11 | 2.262E-11 | 2.264E-11 | 2.276E-11 | 2.294E-11 | 2.313E-11 | 2.334E-11 | 2.351E-11 | 2.355E-11 | 2.382E-11 | 2.409E-11 |
| tl210 | 4.428E-15 | 4.431E-15 | 4.446E-15 | 4.552E-15 | 4.931E-15 | 5.378E-15 | 7.529E-15 | 1.147E-14 | 1.654E-14 | 2.289E-14 | 2.851E-14 | 3.062E-14 | 3.987E-14 | 5.077E-14 |
| pb209 | 1.029E-09 | 1.030E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| pb210 | 6.108E-11 | 6.107E-11 | 6.106E-11 | 6.100E-11 | 6.084E-11 | 6.066E-11 | 6.000E-11 | 5.953E-11 | 5.974E-11 | 6.076E-11 | 6.217E-11 | 6.279E-11 | 6.599E-11 | 7.056E-11 |
| pb211 | 7.322E-10 | 7.321E-10 | 7.331E-10 | 7.470E-10 | 8.132E-10 | 9.030E-10 | 1.347E-09 | 1.893E-09 | 2.443E-09 | 2.999E-09 | 3.414E-09 | 3.487E-09 | 4.117E-09 | 4.682E-09 |
| pb212 | 3.836E-05 | 3.834E-05 | 3.861E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| pb214 | 2.108E-11 | 2.110E-11 | 2.117E-11 | 2.167E-11 | 2.348E-11 | 2.560E-11 | 3.584E-11 | 5.459E-11 | 7.873E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.417E-10 |
| bi210 | 6.112E-11 | 6.111E-11 | 6.109E-11 | 6.103E-11 | 6.087E-11 | 6.071E-11 | 6.004E-11 | 5.957E-11 | 5.977E-11 | 6.080E-11 | 6.220E-11 | 6.283E-11 | 6.602E-11 | 7.060E-11 |
| bi211 | 7.322E-10 | 7.321E-10 | 7.331E-10 | 7.470E-10 | 8.132E-10 | 9.030E-10 | 1.347E-09 | 1.893E-09 | 2.443E-09 | 2.999E-09 | 3.414E-09 | 3.487E-09 | 4.117E-09 | 4.682E-09 |
| bi212 | 3.836E-05 | 3.852E-05 | 3.861E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| bi213 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| bi214 | 2.108E-11 | 2.110E-11 | 2.117E-11 | 2.167E-11 | 2.348E-11 | 2.561E-11 | 3.585E-11 | 5.461E-11 | 7.874E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.418E-10 |
| po209 | 3.917E-18 | 3.916E-18 | 3.916E-18 | 3.915E-18 | 3.911E-18 | 3.907E-18 | 3.888E-18 | 3.862E-18 | 3.836E-18 | 3.810E-18 | 3.791E-18 | 3.784E-18 | 3.758E-18 | 3.733E-18 |
| po210 | 5.203E-11 | 5.212E-11 | 5.232E-11 | 5.306E-11 | 5.477E-11 | 5.614E-11 | 5.852E-11 | 5.886E-11 | 5.888E-11 | 5.948E-11 | 6.043E-11 | 6.087E-11 | 6.347E-11 | 6.726E-11 |
| po211 | 2.021E-12 | 2.021E-12 | 2.023E-12 | 2.062E-12 | 2.245E-12 | 2.492E-12 | 3.719E-12 | 5.225E-12 | 6.743E-12 | 8.276E-12 | 9.424E-12 | 9.625E-12 | 1.136E-11 | 1.292E-11 |
| po212 | 2.457E-05 | 2.468E-05 | 2.474E-05 | 2.577E-05 | 2.967E-05 | 3.413E-05 | 5.433E-05 | 8.534E-05 | 1.158E-04 | 1.437E-04 | 1.624E-04 | 1.685E-04 | 1.890E-04 | 2.063E-04 |
| po213 | 1.007E-09 | 1.007E-09 | 1.006E-09 | 1.006E-09 | 1.006E-09 | 1.007E-09 | 1.012E-09 | 1.020E-09 | 1.028E-09 | 1.038E-09 | 1.045E-09 | 1.047E-09 | 1.059E-09 | 1.071E-09 |
| po214 | 2.373E-11 | 2.358E-11 | 2.332E-11 | 2.290E-11 | 2.373E-11 | 2.564E-11 | 3.584E-11 | 5.459E-11 | 7.873E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.417E-10 |
| po215 | 7.322E-10 | 7.321E-10 | 7.331E-10 | 7.470E-10 | 8.132E-10 | 9.030E-10 | 1.347E-09 | 1.893E-09 | 2.443E-09 | 2.999E-09 | 3.414E-09 | 3.487E-09 | 4.117E-09 | 4.682E-09 |
| po216 | 3.836E-05 | 3.837E-05 | 3.858E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| po218 | 2.108E-11 | 2.110E-11 | 2.117E-11 | 2.168E-11 | 2.348E-11 | 2.561E-11 | 3.585E-11 | 5.461E-11 | 7.874E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.418E-10 |
| at217 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| at218 | 4.217E-15 | 4.220E-15 | 4.235E-15 | 4.335E-15 | 4.696E-15 | 5.121E-15 | 7.170E-15 | 1.092E-14 | 1.575E-14 | 2.180E-14 | 2.715E-14 | 2.916E-14 | 3.797E-14 | 4.836E-14 |
| rn217 | 7.205E-14 | 7.206E-14 | 7.204E-14 | 7.197E-14 | 7.197E-14 | 7.204E-14 | 7.244E-14 | 7.299E-14 | 7.360E-14 | 7.428E-14 | 7.482E-14 | 7.493E-14 | 7.580E-14 | 7.666E-14 |
| rn218 | 2.649E-12 | 2.486E-12 | 2.153E-12 | 1.228E-12 | 2.515E-13 | 3.428E-14 | 1.461E-17 | 1.092E-17 | 1.575E-17 | 2.180E-17 | 2.715E-17 | 2.916E-17 | 3.797E-17 | 4.836E-17 |
| rn219 | 7.322E-10 | 7.321E-10 | 7.331E-10 | 7.470E-10 | 8.132E-10 | 9.030E-10 | 1.347E-09 | 1.893E-09 | 2.443E-09 | 2.999E-09 | 3.414E-09 | 3.487E-09 | 4.117E-09 | 4.682E-09 |
| rn220 | 3.836E-05 | 3.837E-05 | 3.858E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| rn222 | 2.108E-11 | 2.109E-11 | 2.117E-11 | 2.168E-11 | 2.348E-11 | 2.561E-11 | 3.585E-11 | 5.461E-11 | 7.874E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.418E-10 |
| fr221 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| fr223 | 1.061E-11 | 1.065E-11 | 1.074E-11 | 1.110E-11 | 1.210E-11 | 1.334E-11 | 1.856E-11 | 2.608E-11 | 3.366E-11 | 4.131E-11 | 4.702E-11 | 4.898E-11 | 5.671E-11 | 6.448E-11 |
| ra222 | 2.649E-12 | 2.486E-12 | 2.153E-12 | 1.228E-12 | 2.515E-13 | 3.427E-14 | 7.440E-18 | 3.932E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 7.322E-10 | 7.321E-10 | 7.331E-10 | 7.470E-10 | 8.132E-10 | 9.030E-10 | 1.347E-09 | 1.893E-09 | 2.443E-09 | 2.999E-09 | 3.414E-09 | 3.487E-09 | 4.117E-09 | 4.682E-09 |
| ra224 | 3.836E-05 | 3.836E-05 | 3.857E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| ra225 | 1.028E-09 | 1.028E-09 | 1.028E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.071E-09 | 1.083E-09 | 1.095E-09 |
| ra226 | 2.108E-11 | 2.115E-11 | 2.129E-11 | 2.185E-11 | 2.348E-11 | 2.561E-11 | 3.585E-11 | 5.461E-11 | 7.874E-11 | 1.090E-10 | 1.357E-10 | 1.458E-10 | 1.898E-10 | 2.418E-10 |
| ra228 | 1.305E-13 | 1.307E-13 | 1.310E-13 | 1.321E-13 | 1.353E-13 | 1.393E-13 | 1.556E-13 | 1.780E-13 | 1.994E-13 | 2.202E-13 | 2.351E-13 | 2.401E-13 | 2.594E-13 | 2.782E-13 |
| ac225 | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.070E-09 | 1.083E-09 | 1.095E-09 |
| ac226 | 4.895E-17 | 4.520E-17 | 3.778E-17 | 1.882E-17 | 2.672E-18 | 2.352E-19 | 9.115E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 7.687E-10 | 7.716E-10 | 7.783E-10 | 8.041E-10 | 8.765E-10 | 9.667E-10 | 1.345E-09 | 1.890E-09 | 2.439E-09 | 2.993E-09 | 3.407E-09 | 3.549E-09 | 4.109E-09 | 4.673E-09 |
| ac228 | 1.305E-13 | 1.306E-13 | 1.310E-13 | 1.321E-13 | 1.353E-13 | 1.393E-13 | 1.556E-13 | 1.780E-13 | 1.995E-13 | 2.202E-13 | 2.351E-13 | 2.401E-13 | 2.594E-13 | 2.782E-13 |
| th226 | 2.649E-12 | 2.486E-12 | 2.153E-12 | 1.228E-12 | 2.515E-13 | 3.427E-14 | 7.439E-18 | 3.932E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 7.191E-10 | 7.220E-10 | 7.285E-10 | 7.539E-10 | 8.251E-10 | 9.140E-10 | 1.329E-09 | 1.867E-09 | 2.410E-09 | 2.957E-09 | 3.367E-09 | 3.461E-09 | 4.061E-09 | 4.617E-09 |
| th228 | 3.826E-05 | 3.846E-05 | 3.893E-05 | 4.078E-05 | 4.611E-05 | 5.304E-05 | 8.460E-05 | 1.329E-04 | 1.802E-04 | 2.237E-04 | 2.526E-04 | 2.617E-04 | 2.941E-04 | 3.210E-04 |
| th229 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.028E-09 | 1.029E-09 | 1.030E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.072E-09 | 1.083E-09 | 1.095E-09 |
| th230 | 2.671E-08 | 2.676E-08 | 2.688E-08 | 2.734E-08 | 2.864E-08 | 3.029E-08 | 3.762E-08 | 4.935E-08 | 6.253E-08 | 7.721E-08 | 8.906E-08 | 9.330E-08 | 1.108E-07 | 1.298E-07 |
| th231 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.147E-05 | 3.149E-05 | 3.150E-05 | 3.152E-05 | 3.153E-05 | 3.153E-05 | 3.154E-05 | 3.156E-05 |
| th232 | 3.306E-13 | 3.307E-13 | 3.309E-13 | 3.316E-13 | 3.335E-13 | 3.358E-13 | 3.457E-13 | 3.599E-13 | 3.742E-13 | 3.885E-13 | 3.992E-13 | 4.029E-13 | 4.173E-13 | 4.317E-13 |
| th234 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.654E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.652E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 |

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5 more years for cooling used fuel material actinides page 16

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 1.422E-12 | 1.313E-12 | 1.098E-12 | 5.466E-13 | 7.761E-14 | 6.833E-15 | 2.648E-19 | 1.283E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 1.769E-08 | 1.770E-08 | 1.770E-08 | 1.774E-08 | 1.783E-08 | 1.795E-08 | 1.841E-08 | 1.908E-08 | 1.975E-08 | 2.042E-08 | 2.092E-08 | 2.109E-08 | 2.176E-08 | 2.243E-08 |
| pa232 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 | 1.059E-10 |
| pa233 | 1.924E-03 | 1.924E-03 | 1.924E-03 | 1.924E-03 | 1.925E-03 | 1.926E-03 | 1.933E-03 | 1.948E-03 | 1.965E-03 | 1.985E-03 | 2.000E-03 | 2.007E-03 | 2.037E-03 | 2.067E-03 |
| pa234m | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.654E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.652E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 |
| pa234 | 7.441E-06 | 7.437E-06 | 7.441E-06 | 7.441E-06 | 7.441E-06 | 7.441E-06 | 7.446E-06 | 7.441E-06 | 7.441E-06 | 7.441E-06 | 7.444E-06 | 7.441E-06 | 7.441E-06 | 7.441E-06 |
| u230 | 2.647E-12 | 2.483E-12 | 2.150E-12 | 1.227E-12 | 2.513E-13 | 3.424E-14 | 7.432E-18 | 3.878E-23 | 2.023E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 1.429E-04 | 1.433E-04 | 1.443E-04 | 1.480E-04 | 1.580E-04 | 1.700E-04 | 2.150E-04 | 2.667E-04 | 3.063E-04 | 3.364E-04 | 3.539E-04 | 3.590E-04 | 3.758E-04 | 3.881E-04 |
| u233 | 7.037E-08 | 7.042E-08 | 7.052E-08 | 7.092E-08 | 7.204E-08 | 7.344E-08 | 7.931E-08 | 8.865E-08 | 9.806E-08 | 1.076E-07 | 1.140E-07 | 1.163E-07 | 1.260E-07 | 1.359E-07 |
| u234 | 1.034E-03 | 1.035E-03 | 1.037E-03 | 1.044E-03 | 1.063E-03 | 1.089E-03 | 1.197E-03 | 1.355E-03 | 1.514E-03 | 1.672E-03 | 1.789E-03 | 1.829E-03 | 1.984E-03 | 2.138E-03 |
| u235 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.146E-05 | 3.147E-05 | 3.149E-05 | 3.150E-05 | 3.152E-05 | 3.153E-05 | 3.153E-05 | 3.154E-05 | 3.156E-05 |
| u236 | 2.865E-04 | 2.865E-04 | 2.865E-04 | 2.866E-04 | 2.867E-04 | 2.869E-04 | 2.876E-04 | 2.886E-04 | 2.896E-04 | 2.906E-04 | 2.914E-04 | 2.916E-04 | 2.926E-04 | 2.936E-04 |
| u237 | 2.003E-01 | 2.002E-01 | 2.001E-01 | 1.997E-01 | 1.984E-01 | 1.968E-01 | 1.902E-01 | 1.812E-01 | 1.726E-01 | 1.644E-01 | 1.586E-01 | 1.567E-01 | 1.492E-01 | 1.422E-01 |
| u238 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 | 4.651E-03 |
| u240 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 |
| np235 | 4.969E-05 | 4.951E-05 | 4.913E-05 | 4.764E-05 | 4.373E-05 | 3.930E-05 | 2.516E-05 | 1.328E-05 | 7.014E-06 | 3.697E-06 | 2.297E-06 | 1.952E-06 | 1.031E-06 | 5.443E-07 |
| np236 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 | 5.293E-08 |
| np237 | 1.924E-03 | 1.924E-03 | 1.924E-03 | 1.925E-03 | 1.926E-03 | 1.927E-03 | 1.934E-03 | 1.947E-03 | 1.964E-03 | 1.985E-03 | 2.003E-03 | 2.009E-03 | 2.037E-03 | 2.067E-03 |
| np238 | 3.157E-03 | 3.157E-03 | 3.157E-03 | 3.156E-03 | 3.154E-03 | 3.152E-03 | 3.141E-03 | 3.126E-03 | 3.110E-03 | 3.095E-03 | 3.084E-03 | 3.080E-03 | 3.065E-03 | 3.050E-03 |
| np239 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 |
| np240m | 3.059E-08 | 3.062E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059E-08 | 3.059

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| am242m | 6.879E-01 | 6.878E-01 | 6.878E-01 | 6.876E-01 | 6.872E-01 | 6.866E-01 | 6.843E-01 | 6.809E-01 | 6.776E-01 | 6.742E-01 | 6.718E-01 | 6.709E-01 | 6.677E-01 | 6.644E-01 |
| am242 | 6.847E-01 | 6.847E-01 | 6.847E-01 | 6.845E-01 | 6.840E-01 | 6.835E-01 | 6.811E-01 | 6.778E-01 | 6.745E-01 | 6.712E-01 | 6.687E-01 | 6.679E-01 | 6.646E-01 | 6.613E-01 |
| am243 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.168E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 | 1.167E+00 |
| am244 | 5.815E-11 | 5.813E-11 | 5.811E-11 | 5.786E-11 | 5.726E-11 | 5.653E-11 | 5.357E-11 | 4.960E-11 | 4.592E-11 | 4.251E-11 | 4.014E-11 | 3.936E-11 | 3.644E-11 | 3.374E-11 |
| am245 | 3.224E-09 | 3.211E-09 | 3.179E-09 | 3.061E-09 | 2.753E-09 | 2.412E-09 | 1.388E-09 | 6.297E-10 | 2.856E-10 | 1.293E-10 | 7.171E-11 | 5.863E-11 | 2.659E-11 | 1.206E-11 |
| am246m | 5.442E-14 | 5.449E-14 | 5.448E-14 | 5.445E-14 | 5.442E-14 | 5.442E-14 | 5.441E-14 | 5.441E-14 | 5.441E-14 | 5.440E-14 | 5.440E-14 | 5.440E-14 | 5.439E-14 | 5.439E-14 |
| cm240 | 1.110E-08 | 1.055E-08 | 9.398E-09 | 5.997E-09 | 1.704E-09 | 3.560E-10 | 5.110E-13 | 4.354E-17 | 3.710E-21 | 3.081E-25 | 2.858E-28 | 2.625E-29 | 0.000E+00 | 0.000E+00 |
| cm241 | 1.163E-05 | 1.115E-05 | 1.013E-05 | 7.001E-06 | 2.486E-06 | 6.849E-07 | 3.128E-09 | 1.398E-12 | 6.244E-16 | 2.731E-19 | 8.710E-22 | 1.220E-22 | 5.452E-26 | 2.436E-29 |
| cm242 | 1.221E+03 | 1.211E+03 | 1.188E+03 | 1.103E+03 | 8.952E+02 | 6.907E+02 | 2.338E+02 | 4.993E+01 | 1.101E+01 | 2.759E+00 | 1.246E+00 | 1.019E+00 | 6.492E-01 | 5.687E-01 |
| cm243 | 1.433E+00 | 1.433E+00 | 1.432E+00 | 1.430E+00 | 1.426E+00 | 1.420E+00 | 1.397E+00 | 1.364E+00 | 1.332E+00 | 1.300E+00 | 1.278E+00 | 1.270E+00 | 1.240E+00 | 1.211E+00 |
| cm244 | 1.836E+02 | 1.835E+02 | 1.835E+02 | 1.831E+02 | 1.822E+02 | 1.810E+02 | 1.763E+02 | 1.696E+02 | 1.633E+02 | 1.571E+02 | 1.527E+02 | 1.512E+02 | 1.456E+02 | 1.401E+02 |
| cm245 | 3.705E-02 | 3.705E-02 | 3.705E-02 | 3.705E-02 | 3.705E-02 | 3.705E-02 | 3.704E-02 | 3.704E-02 | 3.704E-02 | 3.703E-02 | 3.703E-02 | 3.703E-02 | 3.703E-02 | 3.703E-02 |
| cm246 | 4.421E-03 | 4.421E-03 | 4.421E-03 | 4.421E-03 | 4.421E-03 | 4.421E-03 | 4.421E-03 | 4.420E-03 | 4.419E-03 | 4.419E-03 | 4.418E-03 | 4.418E-03 | 4.418E-03 | 4.417E-03 |
| cm247 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 | 2.049E-08 |
| cm248 | 5.885E-08 | 5.885E-08 | 5.885E-08 | 5.885E-08 | 5.885E-08 | 5.885E-08 | 5.886E-08 | 5.887E-08 | 5.887E-08 | 5.888E-08 | 5.888E-08 | 5.888E-08 | 5.888E-08 | 5.888E-08 |
| cm249 | 1.339E-13 | 1.239E-13 | 1.040E-13 | 5.262E-14 | 7.815E-15 | 7.276E-16 | 3.563E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 3.023E-13 | 3.023E-13 | 3.022E-13 | 3.023E-13 | 3.023E-13 | 3.023E-13 | 3.023E-13 | 3.023E-13 | 3.023E-13 | 3.022E-13 | 3.022E-13 | 3.022E-13 | 3.022E-13 | 3.022E-13 |
| bk247 | 9.151E-15 | 9.151E-15 | 9.151E-15 | 9.150E-15 | 9.150E-15 | 9.149E-15 | 9.146E-15 | 9.141E-15 | 9.137E-15 | 9.132E-15 | 9.129E-15 | 9.127E-15 | 9.123E-15 | 9.118E-15 |
| bk248 | 5.815E-11 | 5.812E-11 | 5.807E-11 | 5.785E-11 | 5.726E-11 | 5.652E-11 | 5.356E-11 | 4.959E-11 | 4.592E-11 | 4.251E-11 | 4.014E-11 | 3.936E-11 | 3.644E-11 | 3.374E-11 |

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5 more years for cooling used fuel material actinides page 17

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nuclide radioactivity, curies

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 2.223E-04 | 2.214E-04 | 2.192E-04 | 2.111E-04 | 1.898E-04 | 1.663E-04 | 9.573E-05 | 4.342E-05 | 1.969E-05 | 8.912E-06 | 4.944E-06 | 4.042E-06 | 1.833E-06 | 8.316E-07 |
| bk250 | 1.784E-10 | 1.775E-10 | 1.755E-10 | 1.679E-10 | 1.485E-10 | 1.274E-10 | 6.710E-11 | 2.682E-11 | 1.073E-11 | 4.289E-12 | 2.176E-12 | 1.728E-12 | 7.046E-13 | 2.960E-13 |
| bk251 | 2.317E-13 | 2.237E-13 | 2.069E-13 | 1.525E-13 | 6.497E-14 | 2.246E-14 | 2.646E-16 | 4.591E-19 | 7.965E-22 | 1.358E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 3.857E-10 | 3.841E-10 | 3.806E-10 | 3.670E-10 | 3.314E-10 | 2.920E-10 | 1.719E-10 | 8.048E-11 | 3.769E-11 | 1.761E-11 | 1.001E-11 | 8.249E-12 | 3.863E-12 | 1.809E-12 |
| cf249 | 5.344E-07 | 5.368E-07 | 5.422E-07 | 5.625E-07 | 6.154E-07 | 6.738E-07 | 8.489E-07 | 9.777E-07 | 1.035E-06 | 1.060E-06 | 1.068E-06 | 1.070E-06 | 1.073E-06 | 1.074E-06 |
| cf250 | 7.214E-06 | 7.212E-06 | 7.207E-06 | 7.189E-06 | 7.138E-06 | 7.075E-06 | 6.818E-06 | 6.466E-06 | 6.133E-06 | 5.816E-06 | 5.591E-06 | 5.516E-06 | 5.231E-06 | 4.961E-06 |
| cf251 | 5.171E-08 | 5.171E-08 | 5.171E-08 | 5.171E-08 | 5.170E-08 | 5.170E-08 | 5.167E-08 | 5.163E-08 | 5.159E-08 | 5.155E-08 | 5.152E-08 | 5.151E-08 | 5.147E-08 | 5.143E-08 |
| cf252 | 5.466E-06 | 5.458E-06 | 5.440E-06 | 5.373E-06 | 5.187E-06 | 4.965E-06 | 4.135E-06 | 3.182E-06 | 2.449E-06 | 1.883E-06 | 1.549E-06 | 1.449E-06 | 1.115E-06 | 8.584E-07 |
| cf253 | 4.309E-11 | 3.986E-11 | 3.346E-11 | 1.693E-11 | 2.515E-12 | 2.341E-13 | 1.146E-17 | 7.761E-24 | 5.255E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 3.306E-10 | 3.231E-10 | 3.069E-10 | 2.511E-10 | 1.433E-10 | 7.122E-11 | 3.835E-12 | 5.856E-14 | 8.943E-16 | 1.350E-17 | 5.984E-19 | 2.062E-19 | 3.148E-21 | 4.808E-23 |
| es252 | 2.870E-14 | 2.861E-14 | 2.842E-14 | 2.770E-14 | 2.578E-14 | 2.357E-14 | 1.620E-14 | 9.476E-15 | 5.542E-15 | 3.237E-15 | 2.170E-15 | 1.893E-15 | 1.107E-15 | 6.475E-16 |
| es253 | 7.660E-10 | 7.185E-10 | 6.221E-10 | 3.544E-10 | 7.216E-11 | 9.711E-12 | 1.928E-15 | 8.545E-21 | 3.664E-26 | 1.519E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 1.783E-10 | 1.774E-10 | 1.754E-10 | 1.678E-10 | 1.484E-10 | 1.273E-10 | 6.704E-11 | 2.678E-11 | 1.070E-11 | 4.262E-12 | 2.151E-12 | 1.703E-12 | 6.801E-13 | 2.717E-13 |
| es255 | 2.893E-12 | 2.794E-12 | 2.584E-12 | 1.905E-12 | 8.114E-13 | 2.805E-13 | 3.305E-15 | 5.733E-18 | 9.947E-21 | 1.696E-23 | 1.486E-25 | 2.942E-26 | 5.104E-29 | 8.856E-32 |
| total | 9.696E+03 | 9.684E+03 | 9.656E+03 | 9.552E+03 | 9.294E+03 | 9.026E+03 | 8.308E+03 | 7.764E+03 | 7.380E+03 | 7.042E+03 | 6.806E+03 | 6.727E+03 | 6.428E+03 | 6.144E+03 |

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5 more years for cooling used fuel material actinides page 18

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element radioactivity, curies

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg | 1.161E-18 | 1.160E-18 | 1.160E-18 | 1.159E-18 | 1.156E-18 | 1.152E-18 | 1.140E-18 | 1.131E-18 | 1.135E-18 | 1.155E-18 | 1.181E-18 | 1.193E-18 | 1.254E-18 | 1.341E-18 |
| tl | 1.379E-05 | 1.385E-05 | 1.388E-05 | 1.446E-05 | 1.665E-05 | 1.915E-05 | 3.049E-05 | 4.788E-05 | 6.495E-05 | 8.063E-05 | 9.111E-05 | 9.451E-05 | 1.061E-04 | 1.158E-04 |
| pb | 3.836E-05 | 3.835E-05 | 3.861E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| bi | 3.836E-05 | 3.852E-05 | 3.862E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| po | 6.294E-05 | 6.305E-05 | 6.332E-05 | 6.600E-05 | 7.599E-05 | 8.740E-05 | 1.392E-04 | 2.186E-04 | 2.965E-04 | 3.681E-04 | 4.159E-04 | 4.314E-04 | 4.842E-04 | 5.285E-04 |
| at | 1.029E-09 | 1.029E-09 | 1.029E-09 | 1.028E-09 | 1.028E-09 | 1.029E-09 | 1.035E-09 | 1.043E-09 | 1.051E-09 | 1.061E-09 | 1.069E-09 | 1.071E-09 | 1.083E-09 | 1.095E-09 |
| rn | 3.836E-05 | 3.837E-05 | 3.858E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| fr | 1.040E-09 | 1.040E-09 | 1.040E-09 | 1.039E-09 | 1.040E-09 | 1.043E-09 | 1.053E-09 | 1.069E-09 | 1.085E-09 | 1.102E-09 | 1.116E-09 | 1.119E-09 | 1.140E-09 | 1.160E-09 |
| ra | 3.836E-05 | 3.836E-05 | 3.858E-05 | 4.023E-05 | 4.632E-05 | 5.327E-05 | 8.482E-05 | 1.332E-04 | 1.807E-04 | 2.243E-04 | 2.535E-04 | 2.630E-04 | 2.951E-04 | 3.221E-04 |
| ac | 1.798E-09 | 1.801E-09 | 1.807E-09 | 1.832E-09 | 1.905E-09 | 1.996E-09 | 2.385E-09 | 2.933E-09 | 3.491E-09 | 4.054E-09 | 4.476E-09 | 4.620E-09 | 5.092E-09 | 5.508E-09 |
| th | 4.720E-03 | 4.720E-03 | 4.721E-03 | 4.723E-03 | 4.728E-03 | 4.735E-03 | 4.770E-03 | 4.815E-03 | 4.862E-03 | 4.906E-03 | 4.937E-03 | 4.944E-03 | 4.976E-03 | 5.003E-03 |
| pa | 6.582E-03 | 6.582E-03 | 6.582E-03 | 6.582E-03 | 6.583E-03 | 6.584E-03 | 6.594E-03 | 6.606E-03 | 6.623E-03 | 6.644E-03 | 6.660E-03 | 6.665E-03 | 6.695E-03 | 6.726E-03 |
| u | 2.064E-01 | 2.064E-01 | 2.063E-01 | 2.058E-01 | 2.046E-01 | 2.030E-01 | 1.966E-01 | 1.878E-01 | 1.794E-01 | 1.714E-01 | 1.657E-01 | 1.638E-01 | 1.566E-01 | 1.497E-01 |
| np | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.173E+00 | 1.172E+00 | 1.172E+00 | 1.172E+00 | 1.172E+00 | 1.172E+00 |
| pu | 8.265E+03 | 8.263E+03 | 8.258E+03 | 8.239E+03 | 8.187E+03 | 8.123E+03 | 7.858E+03 | 7.492E+03 | 7.142E+03 | 6.808E+03 | 6.570E+03 | 6.490E+03 | 6.188E+03 | 5.899E+03 |
| am | 2.388E+01 | 2.396E+01 | 2.412E+01 | 2.474E+01 | 2.648E+01 | 2.862E+01 | 3.741E+01 | 4.945E+01 | 6.091E+01 | 7.183E+01 | 7.959E+01 | 8.218E+01 | 9.202E+01 | 1.014E+02 |
| cm | 1.406E+03 | 1.396E+03 | 1.373E+03 | 1.287E+03 | 1.079E+03 | 8.732E+02 | 4.115E+02 | 2.210E+02 | 1.757E+02 | 1.612E+02 | 1.553E+02 | 1.536E+02 | 1.475E+02 | 1.419E+02 |
| bk | 2.223E-04 | 2.214E-04 | 2.192E-04 | 2.111E-04 | 1.898E-04 | 1.663E-04 | 9.573E-05 | 4.342E-05 | 1.969E-05 | 8.912E-06 | 4.944E-06 | 4.042E-06 | 1.833E-06 | 8.316E-07 |
| cf | 1.327E-05 | 1.326E-05 | 1.324E-05 | 1.318E-05 | 1.299E-05 | 1.277E-05 | 1.185E-05 | 1.068E-05 | 9.668E-06 | 8.810E-06 | 8.260E-06 | 8.086E-06 | 7.471E-06 | 6.945E-06 |
| es | 9.472E-10 | 8.987E-10 | 8.001E-10 | 5.242E-10 | 2.214E-10 | 1.373E-10 | 6.706E-11 | 2.679E-11 | 1.070E-11 | 4.266E-12 | 2.153E-12 | 1.704E-12 | 6.812E-13 | 2.723E-13 |
| totals | 9.696E+03 | 9.684E+03 | 9.656E+03 | 9.552E+03 | 9.294E+03 | 9.026E+03 | 8.308E+03 | 7.764E+03 | 7.380E+03 | 7.042E+03 | 6.806E+03 | 6.727E+03 | 6.428E+03 | 6.144E+03 |

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5 more years for cooling used fuel material actinides page 19

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nuclide thermal power, watts

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl206 | 2.618E-19 | 2.619E-19 | 2.618E-19 | 2.615E-19 | 2.608E-19 | 2.601E-19 | 2.572E-19 | 2.552E-19 | 2.561E-19 | 2.605E-19 | 2.665E-19 | 2.692E-19 | 2.829E-19 | 3.025E-19 |
| tl207 | 2.138E-12 | 2.138E-12 | 2.141E-12 | 2.181E-12 | 2.375E-12 | 2.637E-12 | 3.935E-12 | 5.529E-12 | 7.135E-12 | 8.757E-12 | 9.971E-12 | 1.018E-11 | 1.202E-11 | 1.367E-11 |
| tl208 | 3.250E-07 | 3.264E-07 | 3.271E-07 | 3.408E-07 | 3.924E-07 | 4.513E-07 | 7.186E-07 | 1.129E-06 | 1.531E-06 | 1.901E-06 | 2.148E-06 | 2.228E-06 | 2.500E-06 | 2.729E-06 |
| tl209 | 3.791E-13 | 3.792E-13 | 3.791E-13 | 3.787E-13 | 3.787E-13 | 3.791E-13 | 3.812E-13 | 3.841E-13 | 3.873E-13 | 3.908E-13 | 3.937E-13 | 3.943E-13 | 3.989E-13 | 4.034E-13 |
| tl210 | 9.959E-17 | 9.968E-17 | 1.000E-16 | 1.024E-16 | 1.109E-16 | 1.210E-16 | 1.693E-16 | 2.579E-16 | 3.719E-16 | 5.148E-16 | 6.412E-16 | 6.886E-16 | 8.967E-16 | 1.142E-15 |
| pb209 | 1.204E-12 | 1.204E-12 | 1.204E-12 | 1.203E-12 | 1.203E-12 | 1.204E-12 | 1.208E-12 | 1.214E-12 | 1.223E-12 | 1.241E-12 | 1.250E-12 | 1.252E-12 | 1.267E-12 | 1.281E-12 |
| pb210 | 1.607E-14 | 1.607E-14 | 1.607E-14 | 1.605E-14 | 1.601E-14 | 1.596E-14 | 1.579E-14 | 1.567E-14 | 1.572E-14 | 1.599E-14 | 1.636E-14 | 1.652E-14 | 1.737E-14 | 1.857E-14 |
| pb211 | 2.227E-12 | 2.227E-12 | 2.230E-12 | 2.272E-12 | 2.474E-12 | 2.747E-12 | 4.099E-12 | 5.759E-12 | 7.432E-12 | 9.122E-12 | 1.039E-11 | 1.061E-11 | 1.252E-11 | 1.424E-11 |
| pb212 | 7.150E-08 | 7.147E-08 | 7.197E-08 | 7.498E-08 | 8.633E-08 | 9.929E-08 | 1.581E-07 | 2.483E-07 | 3.368E-07 | 4.182E-07 | 4.725E-07 | 4.901E-07 | 5.500E-07 | 6.004E-07 |
| pb214 | 6.571E-14 | 6.576E-14 | 6.599E-14 | 6.755E-14 | 7.317E-14 | 7.980E-14 | 1.117E-13 | 1.702E-13 | 2.454E-13 | 3.396E-13 | 4.230E-13 | 4.543E-13 | 5.916E-13 | 7.535E-13 |
| bi207 | 7.802E-21 | 7.801E-21 | 7.799E-21 | 7.791E-21 | 7.768E-21 | 7.740E-21 | 7.622E-21 | 7.456E-21 | 7.294E-21 | 7.136E-21 | 7.020E-21 | 6.981E-21 | 6.829E-21 | 6.681E-21 |
| bi210 | 1.410E-13 | 1.410E-13 | 1.409E-13 | 1.408E-13 | 1.404E-13 | 1.401E-13 | 1.385E-13 | 1.374E-13 | 1.379E-13 | 1.403E-13 | 1.435E-13 | 1.450E-13 | 1.523E-13 | 1.629E-13 |
| bi211 | 2.921E-11 | 2.921E-11 | 2.925E-11 | 2.980E-11 | 3.244E-11 | 3.602E-11 | 5.376E-11 | 7.553E-11 | 9.747E-11 | 1.196E-10 | 1.362E-10 | 1.391E-10 | 1.643E-10 | 1.868E-10 |
| bi212 | 6.424E-07 | 6.451E-07 | 6.466E-07 | 6.737E-07 | 7.757E-07 | 8.921E-07 | 1.420E-06 | 2.231E-06 | 3.026E-06 | 3.757E-06 | 4.245E-06 | 4.404E-06 | 4.942E-06 | 5.394E-06 |
| bi213 | 4.226E-12 | 4.226E-12 | 4.224E-12 | 4.221E-12 | 4.221E-12 | 4.225E-12 | 4.248E-12 | 4.280E-12 | 4.316E-12 | 4.356E-12 | 4.388E-12 | 4.394E-12 | 4.445E-12 | 4.496E-12 |
| bi214 | 2.671E-13 | 2.674E-13 | 2.683E-13 | 2.746E-13 | 2.975E-13 | 3.244E-13 | 4.542E-13 | 6.918E-13 | 9.977E-13 | 1.381E-12 | 1.720E-12 | 1.847E-12 | 2.405E-12 | 3.063E-12 |
| po209 | 1.151E-19 | 1.151E-19 | 1.151E-19 | 1.150E-19 | 1.149E-19 | 1.148E-19 | 1.142E-19 | 1.135E-19 | 1.127E-19 | 1.119E-19 | 1.114E-19 | 1.112E-19 | 1.104E-19 | 1.097E-19 |
| po210 | 1.667E-12 | 1.670E-12 | 1.676E-12 | 1.700E-12 | 1.755E-12 | 1.799E-12 | 1.875E-12 | 1.886E-12 | 1.886E-12 | 1.906E-12 | 1.936E-12 | 1.950E-12 | 2.034E-12 | 2.155E-12 |
| po211 | 9.095E-14 | 9.093E-14 | 9.105E-14 | 9.278E-14 | 1.010E-13 | 1.122E-13 | 1.674E-13 | 2.351E-13 | 3.035E-13 | 3.724E-13 | 4.241E-13 | 4.331E-13 | 5.114E-13 | 5.815E-13 |
| po212 | 1.304E-06 | 1.309E-06 | 1.312E-06 | 1.367E-06 | 1.574E-06 | 1.811E-06 | 2.883E-06 | 4.528E-06 | 6.142E-06 | 7.625E-06 | 8.615E-06 | 8.937E-06 | 1.003E-05 | 1.095E-05 |
| po213 | 5.092E-11 | 5.093E-11 | 5.091E-11 | 5.087E-11 | 5.086E-11 | 5.091E-11 | 5.118E-11 | 5.158E-11 | 5.201E-11 | 5.249E-11 | 5.288E-11 | 5.297E-11 | 5.357E-11 | 5.418E-11 |
| po214 | 1.101E-12 | 1.095E-12 | 1.083E-12 | 1.063E-12 | 1.101E-12 | 1.190E-12 | 1.664E-12 | 2.534E-12 | 3.654E-12 | 5.058E-12 | 6.299E-12 | 6.765E-12 | 8.810E-12 | 1.122E-11 |
| po215 | 3.266E-11 | 3.266E-11 | 3.270E-11 | 3.332E-11 | 3.628E-11 | 4.028E-11 | 6.011E-11 | 8.445E-11 | 1.090E-10 | 1.338E-10 | 1.523E-10 | 1.556E-10 | 1.837E-10 | 2.089E-10 |
| po216 | 1.570E-06 | 1.570E-06 | 1.579E-06 | 1.646E-06 | 1.895E-06 | 2.180E-06 | 3.471E-06 | 5.452E-06 | 7.395E-06 | 9.181E-06 | 1.037E-05 | 1.076E-05 | 1.208E-05 | 1.318E-05 |
| po218 | 7.638E-13 | 7.644E-13 | 7.670E-13 | 7.853E-13 | 8.506E-13 | 9.276E-13 | 1.299E-12 | 1.978E-12 | 2.853E-12 | 3.948E-12 | 4.917E-12 | 5.281E-12 | 6.877E-12 | 8.759E-12 |
| at217 | 4.389E-11 | 4.390E-11 | 4.388E-11 | 4.385E-11 | 4.384E-11 | 4.389E-11 | 4.413E-11 | 4.446E-11 | 4.484E-11 | 4.525E-11 | 4.558E-11 | 4.565E-11 | 4.618E-11 | 4.670E-11 |
| at218 | 1.716E-16 | 1.718E-16 | 1.724E-16 | 1.765E-16 | 1.911E-16 | 2.084E-16 | 2.918E-16 | 4.445E-16 | 6.410E-16 | 8.871E-16 | 1.105E-15 | 1.187E-15 | 1.545E-15 | 1.968E-15 |
| rn217 | 3.367E-15 | 3.368E-15 | 3.366E-15 | 3.363E-15 | 3.363E-15 | 3.367E-15 | 3.385E-15 | 3.411E-15 | 3.439E-15 | 3.471E-15 | 3.502E-15 | 3.542E-15 | 3.583E-15 | 3.583E-15 |
| rn218 | 1.140E-13 | 1.070E-13 | 9.264E-14 | 5.284E-14 | 1.082E-14 | 1.475E-15 | 6.287E-19 | 4.700E-19 | 6.777E-19 | 9.380E-19 | 1.168E-18 | 1.255E-18 | 1.634E-18 | 2.081E-18 |
| rn219 | 3.013E-11 | 3.013E-11 | 3.017E-11 | 3.074E-11 | 3.347E-11 | 3.716E-11 | 5.545E-11 | 7.791E-11 | 1.005E-10 | 1.234E-10 | 1.405E-10 | 1.435E-10 | 1.694E-10 | 1.927E-10 |
| rn220 | 1.456E-06 | 1.456E-06 | 1.464E-06 | 1.527E-06 | 1.758E-06 | 2.022E-06 | 3.219E-06 | 5.056E-06 | 6.858E-06 | 8.514E-06 | 9.620E-06 | 9.980E-06 | 1.120E-05 | 1.222E-05 |
| rn222 | 6.984E-13 | 6.987E-13 | 7.012E-13 | 7.180E-13 | 7.778E-13 | 8.483E-13 | 1.188E-12 | 1.809E-12 | 2.608E-12 | 3.610E-12 | 4.497E-12 | 4.829E-12 | 6.289E-12 | 8.009E-12 |
| fr221 | 3.971E-11 | 3.972E-11 | 3.970E-11 | 3.967E-11 | 3.966E-11 | 3.970E-11 | 3.992E-11 | 4.022E-11 | 4.056E-11 | 4.093E-11 | 4.123E-11 | 4.130E-11 | 4.178E-11 | 4.225E-11 |
| fr223 | 2.641E-14 | 2.651E-14 | 2.674E-14 | 2.763E-14 | 3.011E-14 | 3.321E-14 | 4.622E-14 | 6.494E-14 | 8.380E-14 | 1.028E-13 | 1.171E-13 | 1.220E-13 | 1.412E-13 | 1.605E-13 |
| ra222 | 1.048E-13 | 9.835E-14 | 8.517E-14 | 4.858E-14 | 9.951E-15 | 1.356E-15 | 2.943E-19 | 1.556E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 2.591E-11 | 2.590E-11 | 2.594E-11 | 2.643E-11 | 2.877E-11 | 3.195E-11 | 4.767E-11 | 6.698E-11 | 8.644E-11 | 1.061E-10 | 1.208E-10 | 1.234E-10 | 1.457E-10 | 1.656E-10 |
| ra224 | 1.316E-06 | 1.316E-06 | 1.323E-06 | 1.380E-06 | 1.589E-06 | 1.827E-06 | 2.910E-06 | 4.570E-06 | 6.199E-06 | 7.696E-06 | 8.696E-06 | 9.021E-06 | 1.012E-05 | 1.105E-05 |
| ra225 | 7.215E-13 | 7.215E-13 | 7.214E-13 | 7.213E-13 | 7.217E-13 | 7.225E-13 | 7.263E-13 | 7.318E-13 | 7.379E-13 | 7.447E-13 | 7.501E-13 | 7.516E-13 | 7.600E-13 | 7.686E-13 |
| ra226 | 6.086E-13 | 6.105E-13 | 6.146E-13 | 6.308E-13 | 6.777E-13 | 7.392E-13 | 1.035E-12 | 1.576E-12 | 2.273E-12 | 3.146E-12 | 3.919E-12 | 4.208E-12 | 5.480E-12 | 6.979E-12 |
| ra228 | 8.287E-18 | 8.295E-18 | 8.314E-18 | 8.387E-18 | 8.592E-18 | 8.844E-18 | 9.877E-18 | 1.130E-17 | 1.266E-17 | 1.398E-17 | 1.493E-17 | 1.524E-17 | 1.647E-17 | 1.766E-17 |
| ac225 | 3.620E-11 | 3.619E-11 | 3.618E-11 | 3.615E-11 | 3.616E-11 | 3.619E-11 | 3.639E-11 | 3.667E-11 | 3.697E-11 | 3.731E-11 | 3.758E-11 | 3.764E-11 | 3.808E-11 | 3.851E-11 |
| ac226 | 1.223E-19 | 1.129E-19 | 9.441E-20 | 4.702E-20 | 6.676E-21 | 5.877E-22 | 2.278E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 3.909E-13 | 3.924E-13 | 3.958E-13 | 4.089E-13 | 4.457E-13 | 4.916E-13 | 6.840E-13 | 9.612E-13 | 1.240E-12 | 1.522E-12 | 1.733E-12 | 1.805E-12 | 2.090E-12 | 2.376E-12 |
| ac228 | 1.008E-15 | 1.009E-15 | 1.012E-15 | 1.021E-15 | 1.045E-15 | 1.076E-15 | 1.202E-15 | 1.375E-15 | 1.541E-15 | 1.701E-15 | 1.816E-15 | 1.855E-15 | 2.004E-15 | 2.149E-15 |
| th226 | 1.012E-13 | 9.500E-14 | 8.226E-14 | 4.692E-14 | 9.611E-15 | 1.310E-15 | 2.843E-19 | 1.502E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 2.654E-11 | 2.664E-11 | 2.688E-11 | 2.782E-11 | 3.045E-11 | 3.373E-11 | 4.904E-11 | 6.890E-11 | 8.892E-11 | 1.091E-10 | 1.243E-10 | 1.277E-10 | 1.498E-10 | 1.704E-10 |
| th228 | 1.252E-06 | 1.259E-06 | 1.274E-06 | 1.335E-06 | 1.509E-06 | 1.736E-06 | 2.769E-06 | 4.350E-06 | 5.899E-06 | 7.322E-06 | 8.268E-06 | 8.568E-06 | 9.628E-06 | 1.051E-05 |
| th229 | 3.200E-11 | 3.200E-11 | 3.200E-11 | 3.201E-11 | 3.204E-11 | 3.207E-11 | 3.223E-11 | 3.247E-11 | 3.275E-11 | 3.305E-11 | 3.329E-11 | 3.337E-11 | 3.373E-11 | 3.411E-11 |
| th230 | 7.536E-10 | 7.550E-10 | 7.583E-10 | 7.713E-10 | 8.079E-10 | 8.545E-10 | 1.061E-09 | 1.392E-09 | 1.764E-09 | 2.178E-09 | 2.513E-09 | 2.632E-09 | 3.126E-09 | 3.661E-09 |
| th231 | 3.082E-08 | 3.082E-08 | 3.082E-08 | 3.082E-08 | 3.082E-08 | 3.083E-08 | 3.084E-08 | 3.085E-08 | 3.087E-08 | 3.088E-08 | 3.089E-08 | 3.089E-08 | 3.091E-08 | 3.092E-08 |
| th232 | 7.994E-15 | 7.996E-15 | 8.000E-15 | 8.017E-15 | 8.063E-15 | 8.120E-15 | 8.359E-15 | 8.702E-15 | 9.047E-15 | 9.394E-15 | 9.652E-15 | 9.741E-15 | 1.009E-14 | 1.044E-14 |
| th234 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.835E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 | 1.834E-06 |

1

5 more years for cooling used fuel material actinides page 20

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nuclide thermal power, watts

basis =~15.1 kgTHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 6.185E-15 | 5.712E-15 | 4.774E-15 | 2.378E-15 | 3.376E-16 | 2.972E-17 | 1.152E-21 | 5.580E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 5.328E-10 | 5.329E-10 | 5.331E-10 | 5.342E-10 | 5.369E-10 | 5.404E-10 | 5.544E-10 | 5.746E-10 | 5.947E-10 | 6.149E-10 | 6.299E-10 | 6.351E-10 | 6.553E-10 | 6.754E-10 |
| pa232 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 | 6.883E-13 |
| pa233 | 4.728E-06 | 4.728E-06 | 4.728E-06 | 4.728E-06 | 4.731E-06 | 4.734E-06 | 4.750E-06 | 4.786E-06 | 4.828E-06 | 4.879E-06 | 4.915E-06 | 4.931E-06 | 5.006E-06 | 5.080E-06 |
| pa234m | 2.284E-05 | 2.284E-05 | 2.284E-05 | 2.284E-05 | 2.284E-05 | 2.284E-05 | 2.285E-05 | 2.284E-05 | 2.284E-05 | 2.284E-05 | 2.285E-05 | 2.284E-05 | 2.284E-05 | 2.284E-05 |
| pa234 | 8.422E-08 | 8.418E-08 | 8.423E-08 | 8.422E-08 | 8.422E-08 | 8.422E-08 | 8.428E-08 | 8.422E-08 | 8.422E-08 | 8.422E-08 | 8.426E-08 | 8.422E-08 | 8.422E-08 | 8.422E-08 |
| u230 | 9.403E-14 | 8.821E-14 | 7.639E-14 | 4.357E-14 | 8.925E-15 | 1.216E-15 | 2.640E-19 | 1.377E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 4.584E-06 | 4.597E-06 | 

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| np236 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 | 1.230E-10 |
| np237 | 5.640E-05 | 5.640E-05 | 5.641E-05 | 5.642E-05 | 5.644E-05 | 5.648E-05 | 5.669E-05 | 5.708E-05 | 5.758E-05 | 5.819E-05 | 5.870E-05 | 5.889E-05 | 5.970E-05 | 6.059E-05 |
| np238 | 1.563E-05 | 1.563E-05 | 1.563E-05 | 1.563E-05 | 1.562E-05 | 1.561E-05 | 1.555E-05 | 1.548E-05 | 1.540E-05 | 1.532E-05 | 1.527E-05 | 1.525E-05 | 1.518E-05 | 1.510E-05 |
| np239 | 2.805E-03 | 2.805E-03 | 2.805E-03 | 2.805E-03 | 2.805E-03 | 2.804E-03 | 2.804E-03 | 2.804E-03 | 2.804E-03 | 2.804E-03 | 2.803E-03 | 2.803E-03 | 2.803E-03 | 2.803E-03 |
| np240m | 1.769E-10 | 1.770E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 | 1.769E-10 |
| np240 | 3.591E-13 | 3.594E-13 | 3.592E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 | 3.591E-13 |
| pu236 | 2.730E-04 | 2.726E-04 | 2.718E-04 | 2.687E-04 | 2.601E-04 | 2.497E-04 | 2.108E-04 | 1.655E-04 | 1.298E-04 | 1.018E-04 | 8.501E-05 | 7.991E-05 | 6.271E-05 | 4.922E-05 |
| pu237 | 1.307E-06 | 1.268E-06 | 1.184E-06 | 9.077E-07 | 4.313E-07 | 1.708E-07 | 3.552E-09 | 1.390E-11 | 5.440E-14 | 2.097E-16 | 3.369E-18 | 8.205E-19 | 3.211E-21 | 1.256E-23 |
| pu238 | 1.698E+00 | 1.699E+00 | 1.703E+00 | 1.717E+00 | 1.750E+00 | 1.782E+00 | 1.849E+00 | 1.866E+00 | 1.858E+00 | 1.844E+00 | 1.834E+00 | 1.830E+00 | 1.816E+00 | 1.802E+00 |
| pu239 | 4.600E-01 | 4.600E-01 | 4.600E-01 | 4.600E-01 | 4.600E-01 | 4.600E-01 | 4.600E-01 | 4.599E-01 | 4.599E-01 | 4.599E-01 | 4.599E-01 | 4.599E-01 | 4.599E-01 | 4.599E-01 |
| pu240 | 1.054E+00 | 1.054E+00 | 1.054E+00 | 1.054E+00 | 1.054E+00 | 1.054E+00 | 1.055E+00 | 1.055E+00 | 1.056E+00 | 1.056E+00 | 1.056E+00 | 1.057E+00 | 1.057E+00 | 1.057E+00 |
| pu241 | 2.592E-01 | 2.591E-01 | 2.590E-01 | 2.584E-01 | 2.567E-01 | 2.546E-01 | 2.461E-01 | 2.345E-01 | 2.234E-01 | 2.128E-01 | 2.053E-01 | 2.027E-01 | 1.931E-01 | 1.840E-01 |
| pu242 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 | 2.686E-03 |
| pu243 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 | 2.336E-11 |
| pu244 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 | 8.859E-10 |
| pu246 | 7.846E-17 | 7.846E-17 | 7.845E-17 | 7.845E-17 | 7.845E-17 | 7.845E-17 | 7.845E-17 | 7.844E-17 | 7.844E-17 | 7.843E-17 | 7.843E-17 | 7.842E-17 | 7.842E-17 | 7.841E-17 |
| am241 | 7.121E-01 | 7.144E-01 | 7.198E-01 | 7.406E-01 | 7.986E-01 | 8.703E-01 | 1.163E+00 | 1.566E+00 | 1.948E+00 | 2.312E+00 | 2.572E+00 | 2.658E+00 | 2.986E+00 | 3.299E+00 |
| am242m | 2.849E-04 | 2.849E-04 | 2.849E-04 | 2.848E-04 | 2.846E-04 | 2.844E-04 | 2.834E-04 | 2.820E-04 | 2.806E-04 | 2.792E-04 | 2.782E-04 | 2.779E-04 | 2.765E-04 | 2.752E-04 |
| am242 | 7.964E-04 | 7.964E-04 | 7.963E-04 | 7.961E-04 | 7.956E-04 | 7.950E-04 | 7.922E-04 | 7.884E-04 | 7.845E-04 | 7.806E-04 | 7.778E-04 | 7.768E-04 | 7.730E-04 | 7.692E-04 |
| am243 | 3.762E-02 | 3.762E-02 | 3.762E-02 | 3.762E-02 | 3.762E-02 | 3.762E-02 | 3.761E-02 | 3.761E-02 | 3.761E-02 | 3.760E-02 | 3.760E-02 | 3.760E-02 | 3.760E-02 | 3.759E-02 |
| am244 | 3.875E-13 | 3.873E-13 | 3.872E-13 | 3.855E-13 | 3.816E-13 | 3.767E-13 | 3.570E-13 | 3.305E-13 | 3.060E-13 | 2.833E-13 | 2.675E-13 | 2.623E-13 | 2.428E-13 | 2.248E-13 |
| am245 | 6.052E-12 | 6.026E-12 | 5.967E-12 | 5.745E-12 | 5.167E-12 | 4.527E-12 | 2.606E-12 | 1.182E-12 | 5.360E-13 | 2.426E-13 | 1.346E-13 | 1.100E-13 | 4.991E-14 | 2.264E-14 |
| am246m | 4.755E-16 | 4.762E-16 | 4.761E-16 | 4.757E-16 | 4.755E-16 | 4.755E-16 | 4.755E-16 | 4.754E-16 | 4.754E-16 | 4.754E-16 | 4.753E-16 | 4.753E-16 | 4.753E-16 | 4.752E-16 |
| cm240 | 4.212E-10 | 4.001E-10 | 3.564E-10 | 2.274E-10 | 6.465E-11 | 1.350E-11 | 1.938E-14 | 1.651E-18 | 1.407E-22 | 1.169E-26 | 1.084E-29 | 9.958E-31 | 0.000E+00 | 0.000E+00 |
| cm241 | 4.678E-08 | 4.484E-08 | 4.077E-08 | 2.817E-08 | 1.000E-08 | 2.756E-09 | 1.559E-11 | 1.623E-15 | 2.512E-18 | 1.594E-21 | 3.504E-24 | 4.910E-25 | 2.194E-28 | 9.801E-32 |
| cm242 | 4.498E+01 | 4.460E+01 | 4.376E+01 | 4.062E+01 | 3.298E+01 | 2.545E+01 | 8.614E+00 | 1.840E+00 | 4.056E-01 | 1.016E-01 | 4.592E-02 | 3.756E-02 | 2.392E-02 | 2.095E-02 |
| cm243 | 5.247E-02 | 5.246E-02 | 5.244E-02 | 5.239E-02 | 5.222E-02 | 5.201E-02 | 5.115E-02 | 4.995E-02 | 4.877E-02 | 4.762E-02 | 4.679E-02 | 4.650E-02 | 4.541E-02 | 4.434E-02 |
| cm244 | 6.422E+00 | 6.420E+00 | 6.417E+00 | 6.406E+00 | 6.373E+00 | 6.332E+00 | 6.165E+00 | 5.934E+00 | 5.711E+00 | 5.496E+00 | 5.342E+00 | 5.290E+00 | 5.092E+00 | 4.901E+00 |
| cm245 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.241E-03 | 1.240E-03 |
| cm246 | 1.447E-04 | 1.447E-04 | 1.447E-04 | 1.447E-04 | 1.447E-04 | 1.447E-04 | 1.447E-04 | 1.446E-04 | 1.446E-04 | 1.446E-04 | 1.446E-04 | 1.446E-04 | 1.445E-04 | 1.445E-04 |
| cm247 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 | 6.503E-10 |
| cm248 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.649E-09 | 1.650E-09 | 1.650E-09 | 1.650E-09 | 1.650E-09 | 1.650E-09 |
| cm249 | 2.371E-16 | 2.193E-16 | 1.841E-16 | 9.315E-17 | 1.384E-17 | 1.288E-18 | 6.307E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.535E-13 | 2.534E-13 | 2.534E-13 | 2.534E-13 | 2.534E-13 | 2.534E-13 | 2.534E-13 |
| bk247 | 3.181E-16 | 3.181E-16 | 3.181E-16 | 3.181E-16 | 3.181E-16 | 3.180E-16 | 3.179E-16 | 3.178E-16 | 3.176E-16 | 3.174E-16 | 3.173E-16 | 3.173E-16 | 3.171E-16 | 3.170E-16 |
| bk248 | 1.990E-12 | 1.989E-12 | 1.987E-12 | 1.980E-12 | 1.960E-12 | 1.935E-12 | 1.833E-12 | 1.697E-12 | 1.572E-12 | 1.455E-12 | 1.374E-12 | 1.347E-12 | 1.247E-12 | 1.155E-12 |

1

5 more years for cooling used fuel material actinides page 21

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 4.279E-08 | 4.260E-08 | 4.219E-08 | 4.062E-08 | 3.653E-08 | 3.201E-08 | 1.842E-08 | 8.356E-09 | 3.790E-09 | 1.715E-09 | 9.516E-10 | 7.780E-10 | 3.529E-10 | 1.600E-10 |
| bk250 | 1.259E-12 | 1.253E-12 | 1.238E-12 | 1.185E-12 | 1.048E-12 | 8.989E-13 | 4.735E-13 | 1.892E-13 | 7.570E-14 | 3.026E-14 | 1.536E-14 | 1.219E-14 | 4.972E-15 | 2.089E-15 |
| bk251 | 5.894E-16 | 5.692E-16 | 5.263E-16 | 3.880E-16 | 1.653E-16 | 5.713E-17 | 6.732E-19 | 1.168E-21 | 2.026E-24 | 3.455E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 1.455E-11 | 1.449E-11 | 1.435E-11 | 1.384E-11 | 1.250E-11 | 1.101E-11 | 6.482E-12 | 3.035E-12 | 1.422E-12 | 6.643E-13 | 3.775E-13 | 3.111E-13 | 1.457E-13 | 6.823E-14 |
| cf249 | 1.986E-08 | 1.995E-08 | 2.015E-08 | 2.090E-08 | 2.287E-08 | 2.504E-08 | 3.155E-08 | 3.633E-08 | 3.846E-08 | 3.938E-08 | 3.969E-08 | 3.976E-08 | 3.988E-08 | 3.990E-08 |
| cf250 | 2.618E-07 | 2.617E-07 | 2.615E-07 | 2.609E-07 | 2.590E-07 | 2.568E-07 | 2.474E-07 | 2.347E-07 | 2.226E-07 | 2.111E-07 | 2.029E-07 | 2.002E-07 | 1.898E-07 | 1.800E-07 |
| cf251 | 1.888E-09 | 1.888E-09 | 1.888E-09 | 1.888E-09 | 1.888E-09 | 1.888E-09 | 1.887E-09 | 1.885E-09 | 1.884E-09 | 1.882E-09 | 1.881E-09 | 1.881E-09 | 1.879E-09 | 1.878E-09 |
| cf252 | 3.958E-07 | 3.952E-07 | 3.940E-07 | 3.890E-07 | 3.756E-07 | 3.595E-07 | 2.994E-07 | 2.304E-07 | 1.773E-07 | 1.364E-07 | 1.122E-07 | 1.049E-07 | 8.077E-08 | 6.216E-08 |
| cf253 | 2.909E-14 | 2.691E-14 | 2.259E-14 | 1.143E-14 | 1.698E-15 | 1.581E-16 | 7.739E-21 | 5.240E-27 | 3.547E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 3.908E-10 | 3.819E-10 | 3.627E-10 | 2.968E-10 | 1.693E-10 | 8.418E-11 | 4.533E-12 | 6.922E-14 | 1.057E-15 | 1.596E-17 | 7.072E-19 | 2.437E-19 | 3.721E-21 | 5.682E-23 |
| es252 | 9.298E-16 | 9.271E-16 | 9.210E-16 | 8.976E-16 | 8.352E-16 | 7.636E-16 | 5.250E-16 | 3.070E-16 | 1.796E-16 | 1.049E-16 | 7.032E-17 | 6.133E-17 | 3.587E-17 | 2.098E-17 |
| es253 | 3.061E-11 | 2.871E-11 | 2.486E-11 | 1.416E-11 | 2.883E-12 | 3.880E-13 | 7.704E-17 | 3.414E-22 | 1.464E-27 | 6.070E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 6.946E-12 | 6.911E-12 | 6.834E-12 | 6.539E-12 | 5.781E-12 | 4.959E-12 | 1.612E-12 | 1.043E-12 | 4.248E-13 | 1.661E-13 | 8.381E-14 | 6.661E-14 | 2.650E-14 | 1.058E-14 |
| es255 | 1.202E-14 | 1.161E-14 | 1.073E-14 | 7.912E-15 | 3.370E-15 | 1.165E-15 | 1.373E-17 | 2.381E-20 | 4.132E-23 | 7.044E-26 | 6.173E-28 | 1.222E-28 | 2.120E-31 | 3.678E-34 |
| total | 5.569E+01 | 5.531E+01 | 5.447E+01 | 5.135E+01 | 4.377E+01 | 3.630E+01 | 1.965E+01 | 1.305E+01 | 1.176E+01 | 1.158E+01 | 1.161E+01 | 1.163E+01 | 1.172E+01 | 1.181E+01 |

1

5 more years for cooling used fuel material actinides page 22

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 3.250E-07 | 3.264E-07 | 3.271E-07 | 3.408E-07 | 3.924E-07 | 4.513E-07 | 7.186E-07 | 1.129E-06 | 1.531E-06 | 1.901E-06 | 2.148E-06 | 2.228E-06 | 2.500E-06 | 2.729E-06 |
| pb | 7.150E-08 | 7.147E-08 | 7.197E-08 | 7.498E-08 | 8.634E-08 | 9.930E-08 | 1.581E-07 | 2.483E-07 | 3.368E-07 | 4.182E-07 | 4.725E-07 | 4.901E-07 | 5.501E-07 | 6.004E-07 |
| bi | 6.424E-07 | 6.451E-07 | 6.467E-07 | 6.737E-07 | 7.757E-07 | 8.922E-07 | 1.420E-06 | 2.231E-06 | 3.026E-06 | 3.757E-06 | 4.245E-06 | 4.404E-06 | 4.942E-06 | 5.394E-06 |
| po | 2.874E-06 | 2.879E-06 | 2.891E-06 | 3.014E-06 | 3.470E-06 | 3.991E-06 | 6.354E-06 | 9.980E-06 | 1.354E-05 | 1.681E-05 | 1.899E-05 | 1.970E-05 | 2.211E-05 | 2.413E-05 |
| at | 4.389E-11 | 4.390E-11 | 4.388E-11 | 4.385E-11 | 4.384E-11 | 4.389E-11 | 4.413E-11 | 4.446E-11 | 4.484E-11 | 4.525E-11 | 4.558E-11 | 4.565E-11 | 4.618E-11 | 4.670E-11 |
| rn | 1.456E-06 | 1.456E-06 | 1.464E-06 | 1.527E-06 | 1.758E-06 | 2.022E-06 | 3.219E-06 | 5.056E-06 | 6.858E-06 | 8.514E-06 | 9.620E-06 | 9.980E-06 | 1.120E-05 | 1.222E-05 |
| fr | 3.974E-11 | 3.974E-11 | 3.973E-11 | 3.969E-11 | 3.969E-11 | 3.974E-11 | 3.997E-11 | 4.029E-11 | 4.065E-11 | 4.104E-11 | 4.135E-11 | 4.142E-11 | 4.192E-11 | 4.241E-11 |
| ra | 1.316E-06 | 1.316E-06 | 1.323E-06 | 1.380E-06 | 1.589E-06 | 1.827E-06 | 2.910E-06 | 4.570E-06 | 6.196E-06 | 7.696E-06 | 8.696E-06 | 9.021E-06 | 1.012E-05 | 1.105E-05 |
| ac | 3.659E-11 | 3.658E-11 | 3.658E-11 | 3.656E-11 | 3.660E-11 | 3.668E-11 | 3.708E-11 | 3.763E-11 | 3.821E-11 | 3.884E-11 | 3.932E-11 | 3.945E-11 | 4.017E-11 | 4.089E-11 |
| th | 3.118E-06 | 3.124E-06 | 3.140E-06 | 3.200E-06 | 3.375E-06 | 3.602E-06 | 4.636E-06 | 6.217E-06 | 7.765E-06 | 9.189E-06 | 1.014E-05 | 1.044E-05 | 1.150E-05 | 1.238E-05 |
| pa | 2.765E-05 | 2.765E-05 | 2.765E-05 | 2.765E-05 | 2.765E-05 | 2.765E-05 | 2.769E-05 | 2.771E-05 | 2.775E-05 | 2.780E-05 | 2.785E-05 | 2.785E-05 | 2.793E-05 | 2.800E-05 |
| u | 5.267E-04 | 5.266E-04 | 5.265E-04 | 5.260E-04 | 5.245E-04 | 5.227E-04 | 5.153E-04 | 5.051E-04 | 4.953E-04 | 4.858E-04 | 4.791E-04 | 4.769E-04 | 4.684E-04 | 4.603E-04 |
| np | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.877E-03 | 2.878E-03 | 2.878E-03 |
| pu | 3.474E+00 | 3.476E+00 | 3.479E+00 | 3.492E+00 | 3.524E+00 | 3.554E+00 | 3.613E+00 | 3.618E+00 | 3.599E+00 | 3.576E+00 | 3.558E+00 | 3.552E+00 | 3.529E+00 | 3.506E+00 |
| am | 7.508E-01 | 7.531E-01 | 7.585E-01 | 7.793E-01 | 8.373E-01 | 9.090E-01 | 1.202E+00 | 1.604E+00 | 2.351E+00 | 2.610E+00 | 2.697E+00 | 3.025E+00 | 3.337E+00 | |
| cm | 5.146E+01 | 5.108E+01 | 5.023E+01 | 4.708E+01 | 3.941E+01 | 3.183E+01 | 1.483E+01 | 7.825E+00 | 6.167E+00 | 5.647E+00 | 5.436E+00 | 5.376E+00 | 5.162E+00 | 4.967E+00 |
| bk | 4.279E-08 | 4.261E-08 | 4.219E-08 | 4.062E-08 | 3.653E-08 | 3.201E-08 | 1.843E-08 | 8.358E-09 | 3.792E-09 | 1.717E-09 | 9.530E-10 | 7.794E-10 | 3.541E-10 | 1.612E-10 |
| cf | 6.797E-07 | 6.792E-07 | 6.779E-07 | 6.730E-07 | 6.596E-07 | 6.433E-07 | 5.803E-07 | 5.033E-07 | 4.402E-07 | 3.887E-07 | 3.567E-07 | 3.468E-07 | 3.124E-07 | 2.840E-07 |
| es | 3.757E-11 | 3.563E-11 | 3.170E-11 | 2.071E-11 | 8.669E-12 | 5.349E-12 | 2.613E-12 | 1.044E-12 | 4.170E-13 | 1.662E-13 | 8.388E-14 | 6.640E-14 | 2.653E-14 | 1.061E-14 |
| totals | 5.569E+01 | 5.531E+01 | 5.447E+01 | 5.135E+01 | 4.377E+01 | 3.630E+01 | 1.965E+01 | 1.305E+01 | 1.176E+01 | 1.158E+01 | 1.161E+01 | 1.163E+01 | 1.172E+01 | 1.181E+01 |

1

5 more years for cooling used fuel material fission products page 23

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.232E-03 | 1.232E-03 | 1.231E-03 | 1.228E-03 | 1.219E-03 | 1.207E-03 | 1.161E-03 | 1.097E-03 | 1.037E-03 | 9.804E-04 | 9.401E-04 | 9.268E-04 | 8.761E-04 | 8.282E-04 |
| he 3 | 7.049E-05 | 7.087E-05 | 7.172E-05 | 7.504E-05 | 8.427E-05 | 9.567E-05 | 1.422E-04 | 2.056E-04 | 2.656E-04 | 3.225E-04 | 3.627E-04 | 3.761E-04 | 4.267E-04 | 4.746E-04 |
| he 4 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 | 2.619E-02 |
| cu 65 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 | 6.654E-09 |
| zn 66 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 | 2.247E-06 |
| zn 67 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 | 6.274E-06 |
| zn 68 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 | 1.256E-05 |
| ga 69 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 | 2.538E-05 |
| zn 70 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 | 6.195E-05 |
| ge 70 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 | 3.001E-07 |
| ga 71 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 | 1.156E-04 |
| ge 71 | 3.173E-17 | 2.810E-17 | 2.139E-17 | 7.402E-18 | 3.792E-19 | 9.381E-21 | 1.804E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 72 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 | 2.925E-04 |
| ge 73 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 | 6.005E-04 |
| ge 73m | 2.086E-19 | 2.050E-19 | 1.972E-19 | 1.695E-19 | 1.111E-19 | 6.560E-20 | 7.260E-21 | 3.109E-22 | 1.331E-23 | 5.652E-25 | 5.401E-26 | 2.420E-26 | 1.036E-27 | 4.438E-29 |
| as 73 | 2.900E-12 | 2.850E-12 | 2.742E-12 | 2.357E-12 | 1.544E-12 | 9.120E-13 | 1.009E-13 | 4.322E-15 | 1.851E-16 | 7.858E-18 | 7.510E-19 | 3.365E-19 | 1.441E-20 | 6.171E-22 |
| ge 74 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 | 1.437E-03 |
| as 74 | 7.552E-14 | 6.985E-14 | 5.861E-14 | 2.961E-14 | 4.379E-15 | 4.055E-16 | 1.942E-20 | 1.273E-26 | 8.349E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 74 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 | 6.578E-09 |
| as 75 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 | 2.859E-03 |
| se 75 | 1.642E-10 | 1.623E-10 | 1.582E-10 | 1.429E-10 | 1.076E-10 | 7.563E-11 | 1.729E-11 | 2.092E-12 | 2.531E-13 | 3.045E-14 | 6.311E-15 | 3.684E-15 | 4.458E-16 | 5.394E-17 |
| ge 76 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 | 6.455E-03 |
| se 76 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 | 1.338E-04 |
| se 77 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 | 1.516E-02 |
| se 78 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 | 4.310E-02 |
| kr 78 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 | 3.061E-15 |
| se 79 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 | 9.268E-02 |
| br 79 | 5.055E-05 | 5.055E-05 | 5.056E-05 | 5.057E-05 | 5.060E-05 | 5.063E-05 | 5.078E-05 | 5.100E-05 | 5.122E-05 | 5.144E-05 | 5.160E-05 | 5.165E-05 | 5.187E-05 | 5.209E-05 |
| se 80 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 | 2.119E-01 |
| kr 80 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 | 8.352E-06 |
| br 81 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 | 3.905E-01 |
| kr 81 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 | 7.169E-07 |
| se 82 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 | 5.527E-01 |
| kr 82 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 | 1.543E-02 |
| kr 83 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 | 6.372E-01 |
| kr 83m | 8.739E-13 | 8.599E-13 | 8.294E-13 | 7.205E-13 | 4.859E-13 | 2.975E-13 | 3.828E-14 | 2.034E-15 | 1.080E-16 | 5.695E-18 | 6.391E-19 | 3.025E-19 | 1.607E-20 | 8.540E-22 |
| kr 83 | 1.329E-09 | 1.308E-09 | 1.261E-09 | 1.096E-09 | 7.390E-10 | 4.525E-10 | 5.822E-11 | 3.093E-12 | 1.643E-13 | 8.661E-15 | 9.720E-16 | 4.601E-16 | 2.445E-17 | 1.299E-18 |
| kr 84 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 | 1.441E+00 |
| rb 84 | 1.908E-09 | 1.829E-09 | 1.663E-09 | 1.149E-09 | 4.084E-10 | 1.126E-10 | 5.160E-13 | 2.316E-16 | 1.040E-19 | 4.570E-23 | 1.462E-25 | 2.051E-26 | 9.208E-30 | 4.133E-33 |
| sr 84 | 1.330E-07 | 1.330E-07 | 1.330E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 | 1.331E-07 |
| kr 85 | 2.995E-01 | 2.994E-01 | 2.991E-01 | 2.982E-01 | 2.957E-01 | 2.928E-01 | 2.798E-01 | 2.622E-01 | 2.447E-01 | 2.305E-01 | 2.197E-01 | 2.161E-01 | 2.026E-01 | 1.900E-01 |
| rb 85 | 1.211E+00 | 1.211E+00 | 1.211E+00 | 1.212E+00 | 1.214E+00 | 1.218E+00 | 1.230E+00 | 1.248E+00 | 1.264E+00 | 1.280E+00 | 1.290E+00 | 1.294E+00 | 1.307E+00 | 1.320E+00 |
| sr 85 | 3.063E-10 | 2.998E-10 | 2.858E-10 | 2.370E-10 | 1.404E-10 | 7.312E-11 | 4.788E-12 | 9.674E-14 | 1.954E-15 | 3.906E-17 | 2.133E-18 | 7.892E-19 | 1.594E-20 | 3.221E-22 |
| kr 86 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 | 2.151E+00 |
| rb 86 | 5.261E-08 | 4.884E-08 | 4.131E-08 | 2.154E-08 | 3.480E-09 | 3.597E-10 | 2.727E-

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 89 | 4.932E+00 | 4.932E+00 | 4.933E+00 | 4.935E+00 | 4.940E+00 | 4.942E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 | 4.944E+00 |
| y 89m | 4.112E-12 | 4.001E-12 | 3.762E-12 | 2.959E-12 | 1.511E-12 | 6.543E-13 | 1.980E-14 | 1.325E-16 | 8.865E-19 | 5.851E-21 | 1.402E-22 | 3.915E-23 | 2.620E-25 | 1.753E-27 | |
| sr 90 | 5.773E+00 | 5.773E+00 | 5.771E+00 | 5.764E+00 | 5.746E+00 | 5.723E+00 | 5.627E+00 | 5.493E+00 | 5.263E+00 | 5.235E+00 | 5.142E+00 | 5.111E+00 | 4.989E+00 | 4.871E+00 | |
| y 90 | 1.465E-03 | 1.464E-03 | 1.464E-03 | 1.462E-03 | 1.457E-03 | 1.452E-03 | 1.427E-03 | 1.393E-03 | 1.360E-03 | 1.328E-03 | 1.304E-03 | 1.296E-03 | 1.266E-03 | 1.235E-03 | |
| zr 90 | 3.114E-01 | 3.121E-01 | 3.138E-01 | 3.205E-01 | 3.391E-01 | 3.621E-01 | 4.576E-01 | 5.914E-01 | 7.220E-01 | 8.499E-01 | 9.429E-01 | 9.743E-01 | 1.096E+00 | 1.215E+00 | |
| y 91 | 3.185E-02 | 3.110E-02 | 2.949E-02 | 2.397E-02 | 1.341E-02 | 6.511E-03 | 3.175E-04 | 4.205E-06 | 5.570E-08 | 7.291E-10 | 2.907E-11 | 9.658E-12 | 1.279E-13 | 1.695E-15 | |
| zr 91 | 7.191E+00 | 7.191E+00 | 7.193E+00 | 7.199E+00 | 7.209E+00 | 7.216E+00 | 7.222E+00 | 7.223E+00 | 7.223E+00 | 7.223E+00 | 7.223E+00 | 7.223E+00 | 7.223E+00 | 7.223E+00 | |
| nb 91 | 1.740E-10 | 1.740E-10 | 1.740E-10 | 1.740E-10 | 1.740E-10 | 1.740E-10 | 1.738E-10 | 1.736E-10 | 1.735E-10 | 1.733E-10 | 1.732E-10 | 1.731E-10 | 1.729E-10 | 1.728E-10 | |
| nb 91m | 1.501E-16 | 1.467E-16 | 1.393E-16 | 1.142E-16 | 6.534E-17 | 3.262E-17 | 1.787E-18 | 2.797E-20 | 4.379E-22 | 6.776E-24 | 3.059E-25 | 1.061E-25 | 1.660E-27 | 2.599E-29 | |
| zr 92 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | 8.747E+00 | |
| nb 92 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | 1.512E-08 | |
| nb 92m | 1.473E-19 | 1.285E-19 | 9.448E-20 | 2.860E-20 | 1.007E-21 | 1.563E-23 | 4.276E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| mo 92 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | 1.025E-13 | |
| zr 93 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | 1.082E+01 | |
| nb 93 | 1.743E-06 | 1.746E-06 | 1.753E-06 | 1.780E-06 | 1.857E-06 | 1.958E-06 | 2.434E-06 | 3.267E-06 | 4.272E-06 | 5.443E-06 | 6.416E-06 | 6.768E-06 | 8.244E-06 | 9.863E-06 | |
| nb 93m | 9.969E-06 | 9.993E-06 | 1.005E-05 | 1.026E-05 | 1.084E-05 | 1.155E-05 | 1.450E-05 | 1.857E-05 | 2.246E-05 | 2.621E-05 | 2.889E-05 | 2.978E-05 | 3.321E-05 | 3.649E-05 | |
| mo 93 | 7.166E-09 | 7.166E-09 | 7.166E-09 | 7.166E-09 | 7.166E-09 | 7.166E-09 | 7.165E-09 | 7.164E-09 | 7.162E-09 | 7.161E-09 | 7.160E-09 | 7.160E-09 | 7.159E-09 | 7.157E-09 | |
| zr 94 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | 1.243E+01 | |
| nb 94 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.440E-05 | 5.439E-05 | 5.439E-05 | 5.439E-05 | 5.439E-05 | |
| mo 94 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | 2.386E-04 | |
| zr 95 | 8.528E-02 | 8.346E-02 | 7.949E-02 | 6.577E-02 | 3.870E-02 | 1.999E-02 | 1.265E-03 | 2.433E-05 | 4.679E-07 | 8.901E-09 | 4.685E-10 | 1.712E-10 | 3.292E-12 | 6.332E-14 | |
| nb 95 | 9.620E-02 | 9.425E-02 | 9.001E-02 | 7.517E-02 | 4.507E-02 | 2.362E-02 | 1.520E-03 | 3.024E-05 | 5.823E-07 | 1.108E-08 | 5.658E-10 | 2.064E-10 | 4.093E-12 | 7.881E-14 | |
| nb 95m | 5.504E-05 | 5.386E-05 | 5.130E-05 | 4.245E-05 | 2.498E-05 | 1.290E-05 | 8.163E-07 | 1.570E-08 | 3.020E-10 | 5.745E-12 | 3.024E-13 | 1.105E-13 | 2.125E-15 | 4.087E-17 | |
| mo 95 | 1.297E+01 | 1.298E+01 | 1.299E+01 | 1.302E+01 | 1.307E+01 | 1.311E+01 | 1.315E+01 | 1.316E+01 | 1.316E+01 | 1.316E+01 | 1.316E+01 | 1.316E+01 | 1.316E+01 | 1.316E+01 | |
| tc 95 | 1.226E-19 | 1.199E-19 | 9.336E-20 | 5.350E-20 | 2.675E-20 | 1.338E-20 | 4.679E-21 | 3.684E-23 | 5.757E-27 | 2.617E-28 | 9.097E-29 | 1.438E-30 | 0.000E+00 | | |
| tc 95m | 2.282E-16 | 2.231E-16 | 2.119E-16 | 1.737E-16 | 9.955E-17 | 4.977E-17 | 2.745E-18 | 4.338E-20 | 6.856E-22 | 1.071E-23 | 4.870E-25 | 1.693E-25 | 2.675E-27 | 4.228E-29 | |
| zr 96 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | 1.450E+01 | |
| mo 96 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | 7.169E-01 | |
| ru 96 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | 2.604E-15 | |
| mo 97 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | 1.579E+01 | |
| tc 97 | 1.724E-07 | 1.725E-07 | 1.725E-07 | 1.727E-07 | 1.732E-07 | 1.736E-07 | 1.742E-07 | 1.743E-07 | 1.743E-07 | 1.743E-07 | 1.743E-07 | 1.743E-07 | 1.743E-07 | 1.743E-07 | |
| tc 97m | 1.889E-09 | 1.860E-09 | 1.798E-09 | 1.573E-09 | 1.083E-09 | 6.807E-10 | 9.759E-11 | 6.053E-13 | 3.754E-15 | 2.311E-14 | 2.911E-15 | 1.433E-15 | 8.890E-17 | 5.514E-18 | |
| mo 98 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | 1.729E+01 | |
| tc 98 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | 1.781E-04 | |
| ru 98 | 2.906E-08 | 2.906E-08 | 2.906E-08 | 2.906E-08 | 2.907E-08 | 2.907E-08 | 2.909E-08 | 2.912E-08 | 2.915E-08 | 2.918E-08 | 2.920E-08 | 2.921E-08 | 2.924E-08 | 2.927E-08 | |
| tc 99 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | |
| ru 99 | 6.845E-04 | 6.848E-04 | 6.855E-04 | 6.881E-04 | 6.952E-04 | 7.041E-04 | 7.414E-04 | 7.948E-04 | 8.482E-04 | 9.017E-04 | 9.415E-04 | 9.551E-04 | 1.008E-03 | 1.062E-03 | |
| mo100 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | 2.039E+01 | |
| ru100 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | 2.559E+00 | |
| ru101 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | 1.763E+01 | |
| rh101 | 9.738E-09 | 9.727E-09 | 9.702E-09 | 9.605E-09 | 9.338E-09 | 9.016E-09 | 7.786E-09 | 6.312E-09 | 5.117E-09 | 4.146E-09 | 3.545E-09 | 3.361E-09 | 2.724E-09 | 2.209E-09 | |
| ru102 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | 2.032E+01 | |
| rh102 | 1.554E-05 | 1.543E-05 | 1.520E-05 | 1.434E-05 | 1.218E-05 | 9.931E-06 | 4.239E-06 | 1.257E-06 | 3.763E-07 | 1.150E-07 | 4.948E-08 | 3.756E-08 | 1.408E-08 | 6.652E-09 | |
| rh102m | 3.437E-05 | 3.433E-05 | 3.426E-05 | 3.395E-05 | 3.312E-05 | 3.211E-05 | 2.822E-05 | 2.345E-05 | 1.949E-05 | 1.618E-05 | 1.410E-05 | 1.345E-05 | 1.118E-05 | 9.288E-06 | |
| pd102 | 1.543E-05 | 1.545E-05 | 1.550E-05 | 1.569E-05 | 1.617E-05 | 1.666E-05 | 1.792E-05 | 1.857E-05 | 1.877E-05 | 1.883E-05 | 1.885E-05 | 1.885E-05 | 1.885E-05 | 1.886E-05 | |
| ru103 | 1.606E-02 | 1.550E-02 | 1.432E-02 | 1.051E-02 | 4.424E-03 | 1.506E-03 | 1.667E-05 | 2.645E-08 | 4.196E-11 | 6.539E-14 | 5.361E-16 | 1.037E-16 | 1.645E-19 | 2.610E-22 | |
| rh103 | 1.512E+01 | 1.512E+01 | 1.512E+01 | 1.512E+01 | 1.513E+01 | 1.513E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | |
| rh103m | 1.578E-05 | 1.523E-05 | 1.406E-05 | 1.032E-05 | 4.346E-06 | 1.480E-06 | 1.638E-08 | 2.598E-11 | 4.121E-14 | 6.423E-17 | 5.265E-19 | 1.019E-19 | 1.616E-22 | 2.564E-25 | |
| pd103 | 1.256E-10 | 1.158E-10 | 9.636E-11 | 4.719E-11 | 6.393E-12 | 5.308E-13 | 1.611E-17 | 5.500E-24 | 1.877E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | |
| ru104 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | 1.924E+01 | |
| pd104 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | 6.320E+00 | |
| pd105 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | 1.574E+01 | |

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5 more years for cooling used fuel material fission products page 25

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag105 | 2.155E-16 | 2.084E-16 | 1.932E-16 | 1.440E-16 | 6.328E-17 | 2.273E-17 | 3.143E-19 | 6.859E-22 | 1.497E-24 | 3.212E-27 | 3.340E-29 | 7.010E-30 | 1.530E-32 | 3.338E-35 |
| ru106 | 3.883E+00 | 3.868E+00 | 3.836E+00 | 3.713E+00 | 3.389E+00 | 3.024E+00 | 1.880E+00 | 9.520E-01 | 4.820E-01 | 2.436E-01 | 1.467E-01 | 1.234E-01 | 6.247E-02 | 3.163E-02 |
| rh106 | 3.635E-06 | 3.621E-06 | 3.591E-06 | 3.476E-06 | 3.172E-06 | 2.831E-06 | 1.760E-06 | 8.912E-07 | 4.513E-07 | 2.281E-07 | 1.374E-07 | 1.155E-07 | 5.848E-08 | 2.961E-08 |
| pd106 | 1.211E+01 | 1.212E+01 | 1.215E+01 | 1.228E+01 | 1.260E+01 | 1.296E+01 | 1.411E+01 | 1.504E+01 | 1.551E+01 | 1.574E+01 | 1.584E+01 | 1.586E+01 | 1.593E+01 | 1.596E+01 |
| cd106 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 | 4.661E-15 |
| pd107 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 | 1.018E+01 |
| ag107 | 2.255E-06 | 2.261E-06 | 2.274E-06 | 2.326E-06 | 2.472E-06 | 2.653E-06 | 3.411E-06 | 4.496E-06 | 5.581E-06 | 6.669E-06 | 7.477E-06 | 7.754E-06 | 8.838E-06 | 9.923E-06 |
| pd108 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 | 7.044E+00 |
| ag108 | 1.088E-14 | 1.088E-14 | 1.088E-14 | 1.088E-14 | 1.088E-14 | 1.087E-14 | 1.086E-14 | 1.084E-14 | 1.083E-14 | 1.081E-14 | 1.080E-14 | 1.079E-14 | 1.078E-14 | 1.076E-14 |
| ag108m | 1.209E-05 | 1.209E-05 | 1.209E-05 | 1.209E-05 | 1.209E-05 | 1.209E-05 | 1.207E-05 | 1.205E-05 | 1.204E-05 | 1.202E-05 | 1.200E-05 | 1.200E-05 | 1.198E-05 | 1.196E-05 |
| cd108 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.482E-05 | 2.483E-05 | 2.483E-05 |
| ag109 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 |
| ag109m | 3.444E-12 | 3.434E-12 | 3.411E-12 | 3.322E-12 | 3.087E-12 | 2.816E-12 | 1.920E-12 | 1.110E-12 | 6.412E-13 | 3.700E-13 | 2.459E-13 | 2.138E-13 | 1.236E-13 | 7.141E-14 |
| cd109 | 3.467E-06 | 3.457E-06 | 3.434E-06 | 3.345E-06 | 3.107E-06 | 2.835E-06 | 1.933E-06 | 1.117E-06 | 6.455E-07 | 3.725E-07 | 2.475E-07 | 2.152E-07 | 1.244E-07 | 7.188E-08 |
| pd110 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 | 2.304E+00 |
| ag110 | 3.761E-10 | 3.741E-10 | 3.694E-10 | 3.519E-10 | 3.072E-10 | 2.593E-10 | 1.278E-10 | 4.640E-11 | 1.685E-11 | 6.102E-12 | 2.869E-12 | 2.216E-12 | 8.047E-13 | 2.922E-13 |
| ag110m | 2.426E-02 | 2.413E-02 | 2.383E-02 | 2.270E-02 | 1.981E-02 | 1.673E-02 | 8.242E-03 | 2.993E-03 | 1.087E-03 | 3.936E-04 | 1.850E-04 | 1.429E-04 | 5.190E-05 | 1.885E-05 |
| cd110 | 2.308E+00 | 2.308E+00 | 2.308E+00 | 2.310E+00 | 2.312E+00 | 2.315E+00 | 2.324E+00 | 2.329E+00 | 2.331E+00 | 2.332E+00 | 2.332E+00 | 2.332E+00 | 2.332E+00 | 2.332E+00 |
| ag111 | 2.405E-12 | 1.996E-12 | 1.313E-12 | 2.578E-13 | 2.700E-15 | 9.257E-18 | 4.599E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd111 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 | 1.098E+00 |
| cd112 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 | 5.167E-01 |
| sn112 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 | 5.490E-11 |
| cd113 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 | 5.944E-03 |
| cd113m | 8.456E-05 | 8.454E-05 | 8.448E-05 | 8.429E-05 | 8.373E-05 | 8.305E-05 | 8.025E-05 | 7.640E-05 | 7.274E-05 | 6.924E-05 | 6.675E-05 | 6.592E-05 | 6.276E-05 | 5.975E-05 |
| in113 | 1.403E-05 | 1.406E-05 | 1.411E-05 | 1.431E-05 | 1.486E-05 | 1.554E-05 | 1.834E-05 | 2.218E-05 | 2.584E-05 | 2.933E-05 | 3.182E-05 | 3.265E-05 | 3.580E-05 | 3.881E-05 |
| in113m | 7.998E-16 | 7.902E-16 | 7.691E-16 | 6.921E-16 | 5.159E-16 | 3.568E-16 | 7.682E-17 | 8.521E-19 | 9.464E-19 | 1.044E-19 | 2.029E-20 | 1.159E-20 | 1.286E-21 | 1.428E-22 |
| sn113 | 1.332E-12 | 1.316E-12 | 1.281E-12 | 1.152E-12 | 8.579E-13 | 5.942E-13 | 1.279E-13 | 1.420E-14 | 1.576E-15 | 1.739E-16 | 3.379E-17 | 1.930E-17 | 2.142E-18 | 2.377E-19 |
| cd114 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 | 5.508E-01 |
| in114 | 1.098E-13 | 1.067E-13 | 1.002E-13 | 7.845E-14 | 3.951E-14 | 1.682E-14 | 4.735E-16 | 2.858E-18 | 1.725E-20 | 1.027E-22 | 2.278E-24 | 6.196E-25 | 3.739E-27 | 2.257E-29 |
| in114m | 6.751E-09 | 6.564E-09 | 6.163E-09 | 4.824E-09 | 2.429E-09 | 1.034E-09 | 2.912E-11 | 1.757E-13 | 1.061E-15 | 6.312E-18 | 1.401E-19 | 3.810E-20 | 2.299E-22 | 1.388E-24 |
| sn114 | 2.801E-06 | 2.802E-06 | 2.802E-06 | 2.803E-06 | 2.806E-06 | 2.807E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 | 2.808E-06 |
| cd115m | 1.564E-05 | 1.516E-05 | 1.413E-05 | 1.076E-05 | 5.023E-06 | 1.945E-06 | 3.683E-08 | 1.260E-10 | 4.311E-13 | 1.452E-15 | 2.111E-17 | 4.968E-18 | 1.700E-20 | 5.815E-23 |
| in115 | 5.378E-02 | 5.378E-02 | 5.379E-02 | 5.379E-02 | 5.379E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.380E-02 |
| in115m | 6.969E-12 | 6.760E-12 | 6.299E-12 | 4.798E-12 | 2.239E-12 | 8.668E-13 | 1.641E-14 | 5.615E-17 | 1.921E-19 | 6.471E-22 | 9.407E-24 | 2.614E-24 | 7.575E-27 | 2.591E-29 |
| sn115 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 | 8.003E-03 |
| cd116 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 |
| sn116 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 | 6.561E-02 |
| sn117 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 | 1.637E-01 |
| sn117m | 1.491E-10 | 1.346E-10 | 1.070E-10 | 4.387E-11 | 3.610E-12 | 1.612E-13 | 3.656E-19 | 3.046E-27 | 2.539E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn118 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 | 1.419E-01 |
| sn119 | 1.353E-01 | 1.353E-01 | 1.353E-01 | 1.355E-01 | 1.356E-01 | 1.356E-01 | 1.360E-01 | 1.363E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 |
| sn119m | 1.128E-03 | 1.123E-03 | 1.111E-03 | 1.066E-03 | 9.491E-04 | 8.215E-04 | 4.494E-04 | 1.895E-04 | 7.991E-05 | 3.362E-05 | 1.767E-05 | 1.418E-05 | 5.978E-06 | 2.521E-06 |
| sn120 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 | 1.364E-01 |
| te120 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 | 3.920E-11 |
| sn121 | 6.679E-07 | 6.679E-07 | 6.677E-07 | 6.672E-07 | 6.658E-07 | 6.641E-07 | 6.568E-07 | 6.465E-07 | 6.364E-07 | 6.264E-07 | 6.191E-07 | 6.166E-07 | 6.069E-07 | 5.974E-07 |
| sn121m | 1.225E-02 | 1.225E-02 | 1.225E-02 | 1.224E-02 | 1.221E-02 | 1.218E-02 | 1.205E-02 | 1.186E-02 | 1.167E-02 | 1.149E-02 | 1.136E-02 | 1.131E-02 | 1.113E-02 | 1.096E-02 |
| sb121 | 1.342E-01 | 1.342E-01 | 1.342E-01 | 1.342E-01 | 1.342E-01 | 1.343E-01 | 1.344E-01 | 1.346E-01 | 1.348E-01 | 1.350E-01 | 1.351E-01 | 1.351E-01 | 1.353E-01 | 1.355E-01 |
| te121 | 5.800E-10 | 5.751E-10 | 5.642E-10 | 5.239E-10 | 4.259E-10 | 3.292E-10 | 1.122E-10 | 2.403E-11 | 5.148E-12 | 1.098E-12 | 3.484E-13 | 2.352E-13 | 5.039E-14 | 1.079E-14 |
| te121m | 4.949E-09 | 4.908E-09 | 4.815E-09 | 4.472E-09 | 3.637E-09 | 2.811E-09 | 9.580E-10 | 2.052E-10 | 4.396E-11 | 9.377E-12 | 2.974E-12 | 2.009E-12 | 4.302E-13 | 9.216E-14 |
| sn122 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 | 1.830E-01 |
| te122 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 | 1.191E-02 |
| sn123 | 1.473E-03 | 1.457E-03 | 1.423E-03 | 1.295E-03 | 9.957E-04 | 7.178E-04 | 1.828E-04 | 2.579E-05 | 3.639E-06 | 5.108E-07 | 1.187E-07 | 7.207E-08 | 1.017E-08 | 1.435E-09 |

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5 more years for cooling used fuel material fission products page 26

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sb123 | 1.767E-01 | 1.767E-01 | 1.767E-01 | 1.769E-01 | 1.772E-01 | 1.774E-01 | 1.780E-01 | 1.781E-01 | 1.782E-01 | 1.782E-01 | 1.782E-01 | 1.782E-01 | 1.782E-01 | 1.782E-01 |
| te123 | 1.449E-04 | 1.450E-04 | 1.452E-04 | 1.459E-04 | 1.476E-04 | 1.491E-04 | 1.519E-04 | 1.526E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 | 1.527E-04 |
| te123m | 7.881E-06 | 7.789E-06 | 7.588E-06 | 6.854E-06 | 5.155E-06 | 3.615E-06 | 8.207E-07 | 9.826E-08 | 1.177E-08 | 1.400E-09 | 2.880E-10 | 1.677E-10 | 2.008E-11 | 2.404E-12 |
| sn124 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 | 2.967E-01 |
| sb124 | 8.204E-05 | 8.018E-05 | 7.613E-05 | 6.223E-05 | 3.540E-05 | 1.754E-05 | 9.308E-07 | 1.392E-08 | 2.082E-10 | 3.078E-12 | 1.343E-13 | 4.603E-14 | 6.884E-16 | 1.030E-17 |
| te124 | 8.518E-03 | 8.520E-03 | 8.524E-03 | 8.537E-03 | 8.564E-03 | 8.582E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 | 8.600E-03 |
| xe124 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 | 3.572E-15 |
| sn125 | 6.967E-11 | 6.034E-11 | 4.366E-11 | 1.240E-11 | 3.660E-13 | 4.556E-15 | 4.961E-23 | 1.984E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 2.389E-01 | 2.386E-01 | 2.379E-01 | 2.350E-01 | 2.272E-01 | 2.179E-01 | 1.828E-01 | 1.422E-01 | 1.107E-01 | 8.602E-02 | 7.134E-02 | 6.692E-02 | 5.206E-02 | 4.050E-02 |
| te125 | 1.596E-01 | 1.600E-01 | 1.607E-01 | 1.636E-01 | 1.715E-01 | 1.810E-01 | 2.165E-01 | 2.577E-01 | 2.897E-01 | 3.147E-01 | 3.296E-01 | 3.340E-01 | 3.491E-01 | 3.608E-01 |
| te125m | 3.312E-03 | 3.308E-03 | 3.299E-03 | 3.263E-03 | 3.161E-03 | 3.036E-03 | 2.550E-03 | 1.984E-03 | 1.544E-03 | 1.200E-03 | 9.952E-04 | 9.335E-04 | 7.262E-04 | 5.650E-04 |
| i125 | 2.340E-11 | 2.286E-11 | 2.169E-11 | 1.768E-11 | 9.983E-12 | 4.899E-12 | 2.499E-13 | 3.532E-15 | 4.992E-17 | 6.973E-19 | 2.917E-20 | 9.854E-21 | 1.393E-22 | 1.968E-24 |
| sn126 | 7.022E-01 | 7.022E-

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te130 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 |
| xe130 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 | 1.649E-01 |
| i131 | 1.571E-10 | 1.321E-10 | 8.958E-16 | 1.976E-13 | 2.869E-13 | 1.478E-15 | 4.021E-25 | 5.000E-06 | 5.000E-06 | 5.000E-06 | 5.000E-06 | 5.000E-06 | 5.000E-06 | 5.000E-06 |
| xe131 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 | 1.034E+01 |
| xe131m | 6.437E-09 | 5.726E-09 | 4.400E-09 | 1.580E-09 | 8.974E-11 | 2.524E-12 | 8.293E-19 | 4.351E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.709E-16 | 1.482E-16 | 1.074E-16 | 3.079E-17 | 9.332E-19 | 1.213E-20 | 2.465E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 3.065E-19 | 2.717E-19 | 2.071E-19 | 7.213E-20 | 3.763E-21 | 9.521E-23 | 2.012E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe132 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 | 2.579E+01 |
| cs132 | 3.476E-17 | 2.807E-17 | 1.734E-17 | 2.668E-18 | 1.412E-20 | 2.070E-23 | 2.950E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba132 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 | 5.002E-06 |
| xe133 | 3.843E-15 | 2.950E-15 | 1.627E-15 | 1.609E-16 | 2.473E-19 | 7.779E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs133 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 | 2.390E+01 |
| ba133 | 3.204E-06 | 3.203E-06 | 3.201E-06 | 3.191E-06 | 3.162E-06 | 3.128E-06 | 2.987E-06 | 2.797E-06 | 2.618E-06 | 2.451E-06 | 2.334E-06 | 2.295E-06 | 2.149E-06 | 2.012E-06 |
| xe134 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 | 3.157E+01 |
| cs134 | 2.489E+00 | 2.485E+00 | 2.474E+00 | 2.435E+00 | 2.328E+00 | 2.201E+00 | 1.741E+00 | 1.245E+00 | 8.902E-01 | 6.359E-01 | 4.953E-01 | 4.547E-01 | 3.251E-01 | 2.325E-01 |
| ba134 | 1.743E+00 | 1.748E+00 | 1.758E+00 | 1.798E+00 | 1.905E+00 | 2.032E+00 | 2.491E+00 | 2.988E+00 | 3.342E+00 | 3.596E+00 | 3.737E+00 | 3.778E+00 | 3.907E+00 | 4.000E+00 |
| cs135 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 | 1.315E+01 |
| ba135 | 7.998E-03 | 7.998E-03 | 7.998E-03 | 7.999E-03 | 7.999E-03 | 8.000E-03 | 8.002E-03 | 8.006E-03 | 8.010E-03 | 8.014E-03 | 8.017E-03 | 8.018E-03 | 8.022E-03 | 8.026E-03 |
| xe136 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 | 4.695E+01 |
| cs136 | 6.461E-08 | 5.815E-08 | 4.588E-08 | 1.825E-08 | 1.382E-09 | 5.560E-11 | 8.166E-17 | 3.653E-25 | 1.635E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 | 7.821E-01 |
| ba136m | 1.941E-15 | 1.747E-15 | 1.378E-15 | 5.482E-16 | 4.150E-17 | 1.670E-18 | 2.453E-24 | 1.097E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.613E+01 | 2.613E+01 | 2.612E+01 | 2.609E+01 | 2.601E+01 | 2.591E+01 | 2.549E+01 | 2.491E+01 | 2.435E+01 | 2.379E+01 | 2.339E+01 | 2.325E+01 | 2.272E+01 | 2.220E+01 |

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba137 | 1.337E+00 | 1.340E+00 | 1.348E+00 | 1.377E+00 | 1.457E+00 | 1.557E+00 | 1.971E+00 | 2.551E+00 | 3.118E+00 | 3.674E+00 | 4.079E+00 | 4.215E+00 | 4.745E+00 | 5.262E+00 |
| ba137m | 3.991E-06 | 3.991E-06 | 3.990E-06 | 3.985E-06 | 3.973E-06 | 3.958E-06 | 3.895E-06 | 3.806E-06 | 3.719E-06 | 3.635E-06 | 3.573E-06 | 3.552E-06 | 3.471E-06 | 3.392E-06 |
| la137 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.326E-06 | 8.325E-06 | 8.325E-06 |
| ba138 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 | 2.603E+01 |
| la138 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 | 4.568E-04 |
| ce138 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 | 1.758E-07 |
| la139 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 |
| ce139 | 2.799E-05 | 2.770E-05 | 2.708E-05 | 2.480E-05 | 1.938E-05 | 1.425E-05 | 3.946E-06 | 6.278E-07 | 9.990E-08 | 1.582E-08 | 4.020E-09 | 2.516E-09 | 4.004E-10 | 6.371E-11 |
| ba140 | 8.544E-07 | 7.664E-07 | 6.001E-07 | 2.318E-07 | 1.616E-08 | 5.870E-10 | 5.615E-16 | 1.360E-24 | 3.295E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.295E-07 | 1.162E-07 | 9.096E-08 | 3.520E-08 | 2.450E-09 | 8.896E-11 | 8.511E-17 | 2.062E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce140 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 | 2.468E+01 |
| ce141 | 5.711E-03 | 5.472E-03 | 4.972E-03 | 3.423E-03 | 1.204E-03 | 3.280E-04 | 1.426E-06 | 5.967E-10 | 2.480E-13 | 1.012E-16 | 3.065E-19 | 4.219E-20 | 1.759E-23 | 7.332E-27 |
| pr141 | 2.202E+01 | 2.202E+01 | 2.202E+01 | 2.202E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 |
| ce142 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 | 2.145E+01 |
| nd142 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 | 3.254E-01 |
| pr143 | 1.795E-06 | 1.621E-06 | 1.288E-06 | 5.268E-07 | 4.312E-08 | 1.912E-09 | 4.213E-15 | 3.370E-23 | 2.695E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd143 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 | 1.609E+01 |
| pm143 | 2.919E-14 | 2.904E-14 | 2.870E-14 | 2.742E-14 | 2.412E-14 | 2.056E-14 | 1.055E-14 | 4.062E-15 | 1.564E-15 | 6.003E-16 | 2.947E-16 | 2.311E-16 | 8.894E-17 | 3.423E-17 |
| ce144 | 3.361E+00 | 3.344E+00 | 3.308E+00 | 3.170E+00 | 2.814E+00 | 2.426E+00 | 1.304E+00 | 5.367E-01 | 2.209E-01 | 9.066E-02 | 4.677E-02 | 3.730E-02 | 1.535E-02 | 6.316E-03 |
| pr144 | 1.416E+04 | 1.409E+04 | 1.393E+04 | 1.335E+04 | 1.185E+04 | 1.022E+04 | 5.495E+05 | 2.261E+05 | 9.303E+06 | 3.819E+06 | 1.970E+06 | 1.571E+06 | 6.465E+07 | 2.660E+07 |
| pr144m | 5.632E-07 | 5.604E-07 | 5.543E-07 | 5.312E-07 | 4.715E-07 | 4.065E-07 | 2.186E-07 | 8.994E-08 | 3.701E-08 | 1.519E-08 | 7.838E-09 | 6.251E-09 | 2.572E-09 | 1.058E-09 |
| nd144 | 1.733E+01 | 1.735E+01 | 1.738E+01 | 1.752E+01 | 1.788E+01 | 1.826E+01 | 1.939E+01 | 2.015E+01 | 2.047E+01 | 2.060E+01 | 2.064E+01 | 2.065E+01 | 2.067E+01 | 2.068E+01 |
| pm144 | 8.776E-12 | 8.743E-12 | 8.668E-12 | 8.383E-12 | 7.634E-12 | 6.795E-12 | 4.176E-12 | 2.080E-12 | 1.036E-12 | 5.150E-13 | 3.064E-13 | 2.565E-13 | 1.278E-13 | 6.364E-14 |
| sm144 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 | 9.771E-13 |
| nd145 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 | 1.210E+01 |
| pm145 | 5.980E-07 | 5.979E-07 | 5.976E-07 | 5.967E-07 | 5.941E-07 | 5.908E-07 | 5.765E-07 | 5.557E-07 | 5.350E-07 | 5.147E-07 | 5.000E-07 | 4.951E-07 | 4.762E-07 | 4.579E-07 |
| sm145 | 5.620E-09 | 5.597E-09 | 5.546E-09 | 5.352E-09 | 4.843E-09 | 4.277E-09 | 2.543E-09 | 1.208E-09 | 5.741E-10 | 2.722E-10 | 1.564E-10 | 1.293E-10 | 6.146E-11 | 2.920E-11 |
| nd146 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 | 1.322E+01 |
| pm146 | 7.388E-06 | 7.383E-06 | 7.371E-06 | 7.327E-06 | 7.205E-06 | 7.056E-06 | 6.465E-06 | 5.704E-06 | 5.032E-06 | 4.438E-06 | 4.043E-06 | 3.916E-06 | 3.455E-06 | 3.048E-06 |
| sm146 | 5.536E-05 | 5.537E-05 | 5.537E-05 | 5.538E-05 | 5.543E-05 | 5.548E-05 | 5.568E-05 | 5.594E-05 | 5.617E-05 | 5.637E-05 | 5.650E-05 | 5.654E-05 | 5.670E-05 | 5.684E-05 |
| nd147 | 3.610E-08 | 3.182E-08 | 2.395E-08 | 7.935E-09 | 3.599E-10 | 7.651E-12 | 7.808E-19 | 7.683E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.961E+00 | 2.957E+00 | 2.947E+00 | 2.910E+00 | 2.809E+00 | 2.688E+00 | 2.235E+00 | 1.716E+00 | 1.318E+00 | 1.011E+00 | 8.307E-01 | 7.767E-01 | 5.964E-01 | 4.580E-01 |
| sm147 | 1.879E+00 | 1.883E+00 | 1.893E+00 | 1.930E+00 | 2.031E+00 | 2.152E+00 | 2.605E+00 | 3.124E+00 | 3.522E+00 | 3.828E+00 | 4.009E+00 | 4.063E+00 | 4.243E+00 | 4.382E+00 |
| eu147 | 9.905E-20 | 9.351E-20 | 8.216E-20 | 4.967E-20 | 1.213E-20 | 2.099E-21 | 1.370E-24 | 3.782E-29 | 1.043E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd148 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 | 7.791E+00 |
| pm148 | 5.075E-06 | 4.907E-06 | 4.550E-06 | 3.392E-06 | 1.490E-06 | 5.357E-07 | 7.402E-09 | 1.615E-11 | 3.525E-14 | 7.564E-17 | 7.864E-19 | 1.651E-19 | 3.602E-22 | 7.860E-25 |
| pm148m | 8.085E-04 | 7.818E-04 | 7.250E-04 | 5.404E-04 | 2.374E-04 | 8.526E-05 | 1.179E-06 | 2.573E-09 | 5.616E-12 | 1.205E-14 | 1.253E-16 | 2.630E-17 | 5.739E-20 | 1.252E-22 |
| sm148 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 | 3.142E+00 |
| sm149 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 | 9.922E-02 |
| eu149 | 1.417E-12 | 1.397E-12 | 1.350E-12 | 1.186E-12 | 8.231E-13 | 5.227E-13 | 7.829E-14 | 5.170E-15 | 3.414E-16 | 2.238E-17 | 2.954E-18 | 1.478E-18 | 9.760E-20 | 6.445E-21 |
| nd150 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 | 4.596E+00 |
| sm150 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 |
| sm151 | 4.209E-01 | 4.209E-01 | 4.208E-01 | 4.207E-01 | 4.203E-01 | 4.197E-01 | 4.175E-01 | 4.143E-01 | 4.111E-01 | 4.079E-01 | 4.056E-01 | 4.048E-01 | 4.017E-01 | 3.986E-01 |
| eu151 | 2.819E-03 | 2.837E-03 | 2.877E-03 | 3.032E-03 | 3.467E-03 | 4.007E-03 | 6.258E-03 | 9.459E-03 | 1.263E-02 | 1.580E-02 | 1.813E-02 | 1.892E-02 | 2.203E-02 | 2.511E-02 |
| gd151 | 1.580E-09 | 1.562E-09 | 1.523E-09 | 1.381E-09 | 1.050E-09 | 7.469E-10 | 1.795E-10 | 2.334E-11 | 3.034E-12 | 3.921E-13 | 8.573E-14 | 5.097E-14 | 6.626E-15 | 8.613E-16 |
| sm152 | 2.536E+00 | 2.536E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 | 2.537E+00 |
| eu152 | 6.261E-04 | 6.260E-04 | 6.256E-04 | 6.240E-04 | 6.198E-04 | 6.145E-04 | 5.929E-04 | 5.633E-04 | 5.352E-04 | 5.085E-04 | 4.894E-04 | 4.831E-04 | 4.590E-04 | 4.361E-04 |
| gd152 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.281E-03 | 1.282E-03 | 1.284E-03 | 1.290E-03 | 1.298E-03 | 1.306E-03 | 1.313E-03 | 1.319E-03 | 1.321E-03 | 1.327E-03 | 1.334E-03 |
| eu153 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 | 3.288E+00 |
| gd153 | 5.546E-05 | 5.514E-05 | 5.443E-05 | 5.175E-05 | 4.493E-05 | 3.769E-05 | 1.807E-05 | 6.307E-06 | 2.202E-06 | 7.664E-07 | 3.498E-07 | 2.675E-07 | 9.340E-08 | 3.260E-08 |
| sm154 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 | 1.307E+00 |
| eu154 | 9.502E-01 | 9.498E-01 | 9.488E-01 | 9.452E-01 | 9.350E-01 | 9.225E-01 | 8.720E-01 | 8.046E-01 | 7.423E-01 | 6.847E-01 | 6.448E-01 | 6.317E-01 | 5.829E-01 | 5.378E-01 |

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5 more years for cooling used fuel material fission products page 28

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nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gd154 | 1.357E-01 | 1.361E-01 | 1.370E-01 | 1.407E-01 | 1.509E-01 | 1.634E-01 | 2.138E-01 | 2.813E-01 | 3.435E-01 | 4.011E-01 | 4.410E-01 | 4.541E-01 | 5.030E-01 | 5.481E-01 |
| eu155 | 2.317E-01 | 2.315E-01 | 2.311E-01 | 2.295E-01 | 2.250E-01 | 2.196E-01 | 1.983E-01 | 1.714E-01 | 1.482E-01 | 1.280E-01 | 1.149E-01 | 1.107E-01 | 9.567E-02 | 8.270E-02 |
| gd155 | 2.689E-02 | 2.707E-02 | 2.749E-02 | 2.910E-02 | 3.354E-02 | 3.896E-02 | 6.021E-02 | 8.711E-02 | 1.104E-01 | 1.305E-01 | 1.437E-01 | 1.479E-01 | 1.629E-01 | 1.759E-01 |
| eu156 | 1.918E-06 | 1.751E-06 | 1.426E-06 | 6.416E-07 | 6.858E-08 | 4.240E-09 | 3.748E-14 | 2.189E-21 | 1.279E-28 | 7.137E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| gd156 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 | 2.518E+00 |
| dy156 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 | 6.069E-14 |
| gd157 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 | 5.920E-03 |
| tb157 | 1.376E-08 | 1.376E-08 | 1.376E-08 | 1.375E-08 | 1.373E-08 | 1.371E-08 | 1.362E-08 | 1.348E-08 | 1.335E-08 | 1.322E-08 | 1.313E-08 | 1.310E-08 | 1.297E-08 | 1.284E-08 |
| gd158 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 | 7.456E-01 |
| tb158 | 1.767E-06 | 1.767E-06 | 1.767E-06 | 1.767E-06 | 1.766E-06 | 1.765E-06 | 1.760E-06 | 1.753E-06 | 1.747E-06 | 1.740E-06 | 1.735E-06 | 1.733E-06 | 1.727E-06 | 1.720E-06 |
| dy158 | 2.185E-09 | 2.191E-09 | 2.205E-09 | 2.259E-09 | 2.410E-09 | 2.599E-09 | 3.385E-09 | 4.508E-09 | 5.626E-09 | 6.742E-09 | 7.570E-09 | 7.852E-09 | 8.957E-09 | 1.006E-08 |
| tb159 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 |
| dy159 | 4.980E-09 | 4.933E-09 | 4.827E-09 | 4.438E-09 | 3.508E-09 | 2.618E-09 | 1.697E-10 | 1.335E-10 | 2.312E-11 | 3.994E-12 | 1.082E-12 | 6.927E-13 | 1.201E-13 | 2.023E-14 |
| gd160 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 | 5.162E-02 |
| tb160 | 3.568E-04 | 3.501E-04 | 3.353E-04 | 2.835E-04 | 1.772E-04 | 9.875E-05 | 8.567E-06 | 2.589E-07 | 7.822E-09 | 2.341E-10 | 1.726E-11 | 7.075E-12 | 2.138E-13 | 6.460E-15 |
| dy160 | 1.448E-02 | 1.449E-02 | 1.450E-02 | 1.455E-02 | 1.466E-02 | 1.474E-02 | 1.483E-02 | 1.484E-02 | 1.484E-02 | 1.484E-02 | 1.484E-02 | 1.484E-02 | 1.484E-02 | 1.484E-02 |
| tb161 | 1.328E-14 | 1.087E-14 | 6.917E-15 | 1.194E-15 | 8.733E-18 | 1.915E-20 | 1.468E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| dy161 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 | 1.961E-02 |
| dy162 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 | 1.206E-02 |
| er162 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 |
| dy163 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 | 1.005E-02 |
| ho163 | 3.703E-09 | 3.703E-09 | 3.703E-09 | 3.703E-09 | 3.703E-09 | 3.703E-09 | 3.703E-09 | 3.702E-09 | 3.701E-09 | 3.701E-09 | 3.700E-09 | 3.700E-09 | 3.700E-09 | 3.699E-09 |
| dy164 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 | 4.074E-03 |
| er164 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 | 4.881E-08 |
| ho165 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 | 3.993E-03 |
| ho166m | 1.038E-05 | 1.038E-05 | 1.038E-05 | 1.038E-05 | 1.038E-05 | 1.038E-05 | 1.037E-05 | 1.037E-05 | 1.036E-05 | 1.036E-05 | 1.035E-05 | 1.035E-05 | 1.034E-05 | 1.034E-05 |
| er166 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 | 1.275E-03 |
| er167 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 | 6.387E-05 |
| er168 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 | 2.010E-04 |
| tm168 | 1.904E-11 | 1.876E-11 | 1.814E-11 | 1.592E-11 | 1.106E-11 | 7.021E-12 | 1.052E-12 | 6.945E-14 | 4.586E-15 | 3.006E-16 | 3.968E-17 | 1.985E-17 | 1.311E-18 | 8.658E-20 |
| yb168 | 3.225E-14 | 3.228E-14 | 3.234E-14 | 3.256E-14 | 3.305E-14 | 3.345E-14 | 3.405E-14 | 3.414E-14 | 3.415E-14 | 3.415E-14 | 3.415E-14 | 3.415E-14 | 3.415E-14 | 3.415E-14 |
| er169 | 1.042E-14 | 8.990E-15 | 6.449E-15 | 1.773E-15 | 4.765E-17 | 5.283E-19 | 3.545E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm169 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 | 1.534E-05 |
| yb169 | 8.845E-14 | 8.470E-14 | 7.684E-14 | 5.261E-14 | 1.821E-14 | 4.862E-15 | 1.947E-17 | 7.205E-21 | 2.666E-24 | 9.656E-28 | 2.676E-30 | 3.573E-31 | 1.322E-34 | 0.000E+00 |
| er170 | 9.917E-06 | 9.917E-06 | 9.917E-06 | 9.917E-06 | 9.917E-06 | 9.917E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 | 9.918E-06 |
| tm170 | 9.517E-07 | 9.415E-07 | 9.190E-07 | 8.362E-07 | 6.421E-07 | 4.622E-07 | 1.169E-07 | 1.635E-08 | 2.286E-09 | 3.180E-10 | 7.339E-11 | 4.446E-11 | 6.217E-12 | 8.692E-13 |
| yb170 | 1.045E-05 | 1.046E-05 | 1.048E-05 | 1.056E-05 | 1.075E-05 | 1.093E-05 | 1.128E-05 | 1.138E-05 | 1.139E-05 | 1.140E-05 | 1.140E-05 | 1.140E-05 | 1.140E-05 | 1.140E-05 |
| tm171 | 2.701E-06 | 2.696E-06 | 2.684E-06 | 2.638E-06 | 2.513E-06 | 2.366E-06 | 1.839E-06 | 1.282E-06 | 8.936E-07 | 6.224E-07 | 4.756E-07 | 4.339E-07 | 3.025E-07 | 2.109E-07 |
| yb171 | 3.192E-06 | 3.197E-06 | 3.209E-06 | 3.255E-06 | 3.380E-06 | 3.527E-06 | 4.054E-06 | 4.611E-06 | 4.999E-06 | 5.271E-06 | 5.417E-06 | 5.459E-06 | 5.590E-06 | 5.682E-06 |
| yb172 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 | 6.615E-06 |
| total | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 |

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5 more years for cooling used fuel material fission products page 29

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element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y | 4.965E+00 | 4.965E+00 | 4.964E+00 | 4.961E+00 | 4.954E+00 | 4.950E+00 | 4.946E+00 | 4.945E+00 | 4.945E+00 | 4.945E+00 | 4.945E+00 | 4.945E+00 | 4.945E+00 | 4.945E+00 |
| zr | 5.409E+01 | 5.409E+01 | 5.409E+01 | 5.409E+01 | 5.409E+01 | 5.410E+01 | 5.418E+01 | 5.432E+01 | 5.445E+01 | 5.458E+01 | 5.467E+01 | 5.470E+01 | 5.482E+01 | 5.494E+01 |
| nb | 9.632E-02 | 9.437E-02 | 9.013E-02 | 7.528E-02 | 4.516E-02 | 2.370E-02 | 1.592E-03 | 1.265E-04 | 8.173E-05 | 8.607E-05 | 8.971E-05 | 9.096E-05 | 9.586E-05 | 1.008E-04 |
| mo | 6.717E+01 | 6.717E+01 | 6.718E+01 | 6.721E+01 | 6.727E+01 | 6.731E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 | 6.735E+01 |
| tc | 1.627E+01 | 1.627E+01 | 1.627E+01 | 1.627E+01 | 1.627E+01 | 1.627E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 | 1.626E+01 |
| ru | 6.365E+01 | 6.364E+01 | 6.360E+01 | 6.348E+01 | 6.315E+01 | 6.278E+01 | 6.163E+01 | 6.071E+01 | 6.024E+01 | 6.000E+01 | 5.990E+01 | 5.988E+01 | 5.982E+01 | 5.979E+01 |
| rh | 1.512E+01 | 1.512E+01 | 1.512E+01 | 1.512E+01 | 1.513E+01 | 1.513E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 | 1.514E+01 |
| pd | 5.369E+01 | 5.371E+01 | 5.374E+01 | 5.386E+01 | 5.419E+01 | 5.455E+01 | 5.570E+01 | 5.662E+01 | 5.709E+01 | 5.733E+01 | 5.743E+01 | 5.745E+01 | 5.751E+01 | 5.754E+01 |
| ag | 3.511E+00 | 3.511E+00 | 3.510E+00 | 3.509E+00 | 3.506E+00 | 3.503E+00 | 3.495E+00 | 3.490E+00 | 3.488E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 | 3.487E+00 |
| cd | 4.664E+00 | 4.664E+00 | 4.664E+00 | 4.665E+00 | 4.668E+00 | 4.671E+00 | 4.680E+00 | 4.685E+00 | 4.687E+00 | 4.688E+00 | 4.688E+00 | 4.688E+00 | 4.688E+00 | 4.688E+00 |
| in | 5.380E-02 | 5.380E-02 | 5.380E-02 | 5.381E-02 | 5.381E-02 | 5.381E-02 | 5.382E-02 | 5.382E-02 | 5.383E-02 | 5.383E-02 | 5.383E-02 | 5.383E-02 | 5.384E-02 | 5.384E-02 |
| sn | 1.848E+00 | 1.848E+00 | 1.848E+00 | 1.848E+00 | 1.847E+00 | 1.847E+00 | 1.846E+00 | 1.846E+00 | 1.846E+00 | 1.845E+00 | 1.845E+00 | 1.845E+00 | 1.845E+00 | 1.845E+00 |
| sb | 5.499E-01 | 5.496E-01 | 5.489E-01 | 5.462E-01 | 5.387E-01 | 5.296E-01 | 4.952E-01 | 4.550E-01 | 4.236E-01 | 3.992E-01 | 3.846E-01 | 3.802E-01 | 3.656E-01 | 3.542E-01 |
| te | 1.196E+01 | 1.196E+01 | 1.196E+01 | 1.196E+01 | 1.197E+01 | 1.197E+01 | 1.201E+01 | 1.205E+01 | 1.208E+01 | 1.210E+01 | 1.212E+01 | 1.212E+01 | 1.214E+01 | 1.215E+01 |
| i | 6.324E+00 | 6.324E+00 | 6.325E+00 | 6.325E+00 | 6.327E+00 | 6.328E+00 | 6.329E+00 | 6.330E+00 | 6.330E+00 | 6.330E+00 | 6.330E+00 | 6.330E+00 | 6.330E+00 | 6.330E+00 |
| xe | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 | 1.149E+02 |
| cs | 6.567E+01 | 6.566E+01 | 6.564E+01 | 6.557E+01 | 6.539E+01 | 6.516E+01 | 6.429E+01 | 6.321E+01 | 6.229E+01 | 6.148E+01 | 6.093E+01 | 6.075E+01 | 6.010E+01 | 5.949E+01 |
| ba | 2.990E+01 | 2.990E+01 | 2.992E+01 | 2.999E+01 | 3.018E+01 | 3.040E+01 | 3.128E+01 | 3.235E+01 | 3.328E+01 | 3.409E+01 | 3.463E+01 | 3.481E+01 | 3.547E+01 | 3.608E+01 |
| la | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 | 2.412E+01 |
| ce | 4.949E+01 | 4.948E+01 | 4.944E+01 | 4.930E+01 | 4.894E+01 | 4.855E+01 | 4.743E+01 | 4.666E+01 | 4.635E+01 | 4.622E+01 | 4.617E+01 | 4.616E+01 | 4.614E+01 | 4.613E+01 |
| pr | 2.202E+01 | 2.202E+01 | 2.202E+01 | 2.202E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 | 2.203E+01 |
| nd | 7.145E+01 | 7.147E+01 | 7.151E+01 | 7.164E+01 | 7.200E+01 | 7.239E+01 | 7.351E+01 | 7.428E+01 | 7.459E+01 | 7.472E+01 | 7.477E+01 | 7.478E+01 | 7.480E+01 | 7.481E+01 |
| pm | 2.962E+00 | 2.958E+00 | 2.948E+00 | 2.911E+00 | 2.809E+00 | 2.688E+00 | 2.235E+00 | 1.716E+00 | 1.318E+00 | 1.011E+00 | 8.307E-01 | 7.767E-01 | 5.964E-01 | 4.580E-01 |
| sm | 1.596E+01 | 1.596E+01 | 1.597E+01 | 1.601E+01 | 1.611E+01 | 1.623E+01 | 1.668E+01 | 1.720E+01 | 1.759E+01 | 1.790E+01 | 1.808E+01 | 1.813E+01 | 1.831E+01 | 1.844E+01 |
| eu | 4.474E+00 | 4.473E+00 | 4.472E+00 | 4.466E+00 | 4.452E+00 | 4.435E+00 | 4.374E+00 | 4.317E+00 | 4.267E+00 | 4.217E+00 | 4.167E+00 | 4.150E+00 | 3.989E+00 | 3.934E+00 |
| gd | 3.485E+00 | 3.486E+00 | 3.487E+00 | 3.492E+00 | 3.507E+00 | 3.525E+00 | 3.597E+00 | 3.691E+00 | 3.777E+00 | 3.854E+00 | 3.907E+00 | 3.925E+00 | 3.989E+00 | 4.047E+00 |
| tb | 1.134E-01 | 1.134E-01 | 1.133E-01 | 1.133E-01 | 1.132E-01 | 1.131E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 | 1.130E-01 |
| dy | 6.027E-02 | 6.028E-02 | 6.029E-02 | 6.034E-02 | 6.045E-02 | 6.053E-02 | 6.062E-02 | 6.063E-02 | 6.063E-02 | 6.063E-02 | 6.063E-02 | 6.063E-02 | 6.063E-02 | 6.063E-02 |
| ho | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 | 4.003E-03 |
| er | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 | 1.550E-03 |
| tm | 1.899E-05 | 1.897E-05 | 1.894E-05 | 1.881E-05 | 1.849E-05 | 1.816E-05 | 1.729E-05 | 1.663E-05 | 1.623E-05 | 1.596E-05 | 1.581E-05 | 1.577E-05 | 1.564E-05 | 1.555E-05 |
| yb | 2.025E-05 | 2.027E-05 | 2.030E-05 | 2.043E-05 | 2.075E-05 | 2.108E-05 | 2.195E-05 | 2.261E-05 | 2.301E-05 | 2.328E-05 | 2.343E-05 | 2.347E-05 | 2.360E-05 | 2.369E-05 |
| totals | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 | 7.281E+02 |

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5 more years for cooling used fuel material fission products page 30

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.193E+01 | 1.192E+01 | 1.191E+01 | 1.188E+01 | 1.179E+01 | 1.168E+01 | 1.123E+01 | 1.062E+01 | 1.004E+01 | 9.487E+00 | 9.098E+00 | 8.968E+00 | 8.478E+00 | 8.014E+00 |
| ga 68 | 2.516E-17 | 2.504E-17 | 2.475E-17 | 2.367E-17 | 2.088E-17 | 1.786E-17 | 9.302E-18 | 3.657E-18 | 1.437E-18 | 5.635E-19 | 2.810E-19 | 2.215E-19 | 8.707E-20 | 3.422E-20 |
| ge 68 | 2.516E-17 | 2.503E-17 | 2.474E-17 | 2.366E-17 | 2.087E-17 | 1.786E-17 | 9.301E-18 | 3.656E-18 | 1.437E-18 | 5.634E-19 | 2.810E-19 | 2.215E-19 | 8.705E-20 | 3.422E-20 |
| ge 71 | 5.107E-12 | 4.524E-12 | 3.443E-12 | 1.191E-12 | 6.103E-14 | 1.510E-15 | 2.904E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 6.462E-08 | 6.351E-08 | 6.110E-08 | 5.253E-08 | 3.441E-08 | 2.032E-08 | 2.249E-09 | 9.633E-11 | 4.125E-12 | 1.751E-13 | 1.674E-14 | 7.499E-15 | 3.211E-16 | 1.375E-17 |
| as 73 | 6.462E-08 | 6.351E-08 | 6.110E-08 | 5.253E-08 | 3.441E-08 | 2.032E-08 | 2.249E-09 | 9.633E-11 | 4.125E-12 | 1.751E-13 | 1.674E-14 | 7.499E-15 | 3.211E-16 | 1.375E-17 |
| as 74 | 7.502E-09 | 6.939E-09 | 5.822E-09 | 2.942E-09 | 4.350E-10 | 4.029E-11 | 1.929E-15 | 1.265E-21 | 8.294E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 2.388E-06 | 2.360E-06 | 2.300E-06 | 2.078E-06 | 1.565E-06 | 1.100E-06 | 2.514E-07 | 3.042E-08 | 3.681E-09 | 4.428E-10 | 9.176E-11 | 5.357E-11 | 6.482E-12 | 7.842E-13 |
| se 79 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 |
| kr 81 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 | 1.382E-08 |
| kr 83m | 1.804E-05 | 1.775E-05 | 1.712E-05 | 1.487E-05 | 1.003E-05 | 6.141E-06 | 7.901E-07 | 4.198E-08 | 2.230E-09 | 1.175E-10 | 1.319E-11 | 6.245E-12 | 3.318E-13 | 1.763E-14 |
| rb 83 | 2.427E-05 | 2.388E-05 | 2.303E-05 | 2.001E-05 | 1.349E-05 | 8.261E-06 | 1.063E-06 | 5.648E-08 | 3.000E-09 | 1.581E-10 | 1.775E-11 | 8.401E-12 | 4.463E-13 | 2.371E-14 |
| rb 84 | 9.042E-05 | 8.668E-05 | 7.882E-05 | 5.447E-05 | 1.935E-05 | 5.336E-06 | 2.445E-08 | 1.098E-11 | 4.927E-15 | 2.165E-18 | 6.929E-21 | 9.720E-22 | 4.363E-25 | 1.959E-28 |
| kr 85 | 1.172E+02 | 1.171E+02 | 1.170E+02 | 1.167E+02 | 1.157E+02 | 1.144E+02 | 1.094E+02 | 1.026E+02 | 9.617E+01 | 9.015E+01 | 8.593E+01 | 8.453E+01 | 7.926E+01 | 7.432E+01 |
| sr 85 | 7.261E-06 | 7.107E-06 | 6.773E-06 | 5.618E-06 | 3.327E-06 | 1.733E-06 | 1.135E-07 | 2.293E-09 | 4.632E-11 | 9.259E-13 | 5.055E-14 | 1.871E-14 | 3.779E-16 | 7.635E-18 |
| rb 86 | 4.289E-03 | 3.982E-03 | 3.368E-03 | 1.756E-03 | 2.837E-04 | 2.933E-05 | 2.224E-09 | 2.815E-15 | 3.565E-21 | 4.348E-27 | 1.752E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 | 2.412E-07 |
| y 88 | 7.314E-03 | 7.220E-03 | 7.012E-03 | 6.258E-03 | 4.551E-03 | 3.061E-03 | 5.834E-04 | 5.439E-05 | 5.071E-06 | 4.697E-07 | 8.015E-08 | 4.379E-08 | 4.082E-09 | 3.806E-10 |
| zr 88 | 2.341E-09 | 2.302E-09 | 2.218E-09 | 1.917E-09 | 1.276E-09 | 7.686E-10 | 9.231E-11 | 4.444E-12 | 2.140E-13 | 1.022E-14 | 1.065E-15 | 4.918E-16 | 2.368E-17 | 1.140E-18 |
| sr 89 | 3.454E+02 | 3.360E+02 | 3.159E+02 | 2.485E+02 | 1.269E+02 | 5.496E+01 | 1.663E+00 | 1.113E-02 | 7.445E-05 | 4.914E-07 | 1.178E-08 | 3.288E-09 | 2.200E-11 | 1.472E-13 |
| y 89m | 3.330E-02 | 3.240E-02 | 3.046E-02 | 2.396E-02 | 1.223E-02 | 5.298E-03 | 1.603E-04 | 1.073E-06 | 7.177E-09 | 4.737E-11 | 1.135E-12 | 3.170E-13 | 2.121E-15 | 1.419E-17 |
| sr 90 | 7.969E+02 | 7.968E+02 | 7.966E+02 | 7.957E+02 | 7.931E+02 | 7.899E+02 | 7.767E+02 | 7.583E+02 | 7.403E+02 | 7.226E+02 | 7.098E+02 | 7.054E+02 | 6.887E+02 | 6.723E+02 |
| y 90 | 7.971E+02 | 7.970E+02 | 7.968E+02 | 7.959E+02 | 7.933E+02 | 7.901E+02 | 7.769E+02 | 7.585E+02 | 7.404E+02 | 7.228E+02 | 7.099E+02 | 7.056E+02 | 6.888E+02 | 6.725E+02 |
| y 91 | 7.814E+02 | 7.631E+02 | 7.235E+02 | 5.880E+02 | 3.291E+02 | 1.598E+02 | 7.789E+00 | 1.032E-01 | 1.367E-03 | 1.789E-05 | 7.131E-07 | 2.370E-07 | 3.139E-09 | 4.158E-11 |
| nb 91 | 1.006E-09 | 1.006E-09 | 1.006E-09 | 1.006E-09 | 1.006E-09 | 1.005E-09 | 1.005E-09 | 1.004E-09 | 1.003E-09 | 1.002E-09 | 1.001E-09 | 1.001E-09 | 9.996E-10 | 9.986E-10 |
| nb 91m | 3.539E-12 | 3.460E-12 | 3.287E-12 | 2.693E-12 | 1.541E-12 | 7.694E-13 | 4.215E-14 | 6.598E-16 | 1.033E-17 | 1.598E-19 | 7.215E-21 | 2.502E-21 | 3.916E-23 | 6.130E-25 |
| nb 92 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 | 1.694E-12 |
| nb 92m | 2.060E-14 | 1.797E-14 | 1.322E-14 | 4.001E-15 | 1.409E-16 | 2.186E-18 | 5.982E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 |
| nb 93m | 2.377E-03 | 2.383E-03 | 2.395E-03 | 2.445E-03 | 2.583E-03 | 2.755E-03 | 3.457E-03 | 4.427E-03 | 5.356E-03 | 6.248E-03 | 6.887E-03 | 7.101E-03 | 7.917E-03 | 8.699E-03 |
| mo 93 | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.889E-09 | 6.888E-09 | 6.887E-09 | 6.886E-09 | 6.885E-09 | 6.884E-09 | 6.884E-09 | 6.883E-09 | 6.881E-09 |
| nb 94 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.020E-05 | 1.019E-05 | 1.019E-05 |
| zr 95 | 1.831E+03 | 1.792E+03 | 1.707E+03 | 1.412E+03 | 8.310E+02 | 4.294E+02 | 2.716E+01 | 5.224E-01 | 1.005E-02 | 1.912E-04 | 1.006E-05 | 3.676E-06 | 7.070E-08 | 1.360E-09 |
| nb 95 | 3.780E+03 | 3.704E+03 | 3.537E+03 | 2.954E+03 | 1.771E+03 | 9.283E+02 | 5.974E+01 | 1.188E+00 | 2.288E-02 | 4.352E-04 | 2.223E-05 | 8.112E-06 | 1.609E-07 | 3.097E-09 |
| nb 95m | 2.096E+01 | 2.052E+01 | 1.954E+01 | 1.617E+01 | 9.514E+00 | 4.915E+00 | 3.110E-01 | 5.980E-03 | 1.150E-04 | 2.188E-06 | 1.152E-07 | 4.208E-08 | 8.094E-10 | 1.557E-11 |
| tc 95 | 2.023E-13 | 1.978E-13 | 1.879E-13 | 1.540E-13 | 8.828E-14 | 4.414E-14 | 2.434E-15 | 3.847E-17 | 6.080E-19 | 9.499E-21 | 4.319E-22 | 1.501E-22 | 2.372E-24 | 0.000E+00 |
| tc 95m | 5.144E-12 | 5.028E-12 | 4.778E-12 | 3.916E-12 | 2.244E-12 | 1.122E-12 | 6.189E-14 | 9.780E-16 | 1.546E-17 | 2.415E-19 | 1.098E-20 | 3.816E-21 | 6.031E-23 | 9.530E-25 |
| zr 96 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 | 2.702E-15 |
| tc 97 | 1.510E-10 | 1.511E-10 | 1.511E-10 | 1.513E-10 | 1.517E-10 | 1.520E-10 | 1.525E-10 | 1.526E-10 | 1.526E-10 | 1.526E-10 | 1.526E-10 | 1.526E-10 | 1.526E-10 | 1.526E-10 |
| tc 97m | 2.796E-05 | 2.753E-05 | 2.661E-05 | 2.329E-05 | 1.603E-05 | 1.007E-05 | 1.444E-06 | 8.958E-08 | 5.556E-09 | 3.420E-10 | 4.308E-11 | 2.121E-11 | 1.316E-12 | 8.160E-14 |
| tc 98 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 | 1.547E-07 |
| tc 99 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 |
| rh 99 | 2.967E-16 | 2.722E-16 | 2.243E-16 | 1.056E-16 | 1.281E-17 | 9.265E-19 | 1.581E-23 | 2.368E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 | 9.991E-15 |
| rh101 | 1.045E-05 | 1.044E-05 | 1.041E-05 | 1.031E-05 | 1.006E-05 | 9.675E-06 | 8.355E-06 | 6.771E-06 | 5.491E-06 | 4.449E-06 | 3.804E-06 | 3.606E-06 | 2.923E-06 | 2.370E-06 |
| rh102 | 9.599E-02 | 9.536E-02 | 9.393E-02 | 8.860E-02 | 7.522E-02 | 6.135E-02 | 5.219E-03 | 5.235E-03 | 5.235E-03 | 7.106E-04 | 3.057E-04 | 2.320E-04 | 8.702E-05 | 4.109E-05 |
| rh102m | 3.221E-02 | 3.217E-02 | 3.210E-02 | 3.182E-02 | 3.104E-02 | 3.009E-02 | 2.644E-02 | 2.197E-02 | 1.826E-02 | 1.517E-02 | 1.321E-02 | 1.260E-02 | 1.047E-02 | 8.703E-03 |
| ru103 | 5.190E+02 | 5.010E+02 | 4.627E+02 | 3.397E+02 | 1.430E+02 | 4.868E+01 | 5.388E-01 | 8.547E-04 | 1.356E-06 | 2.113E-09 | 1.732E-11 | 3.352E-12 | 5.317E-15 | 8.434E-18 |
| rh103m | 5.134E+02 | 4.956E+02 | 4.577E+02 | 3.360E+02 | 1.414E+02 | 4.816E+01 | 5.330E-01 | 8.455E-04 | 1.341E-06 | 2.090E-09 | 1.714E-11 | 3.316E-12 | 5.260E-15 | 8.343E-18 |
| pd103 | 9.377E-06 | 8.642E-06 | 7.193E-06 | 3.522E-06 | 4.772E-07 | 3.962E-08 | 1.202E-12 | 4.105E-19 | 1.401E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 6.494E-12 | 6.279E-12 | 5.822E-12 | 4.340E-12 | 1.907E-12 | 6.847E-13 | 9.471E-15 | 2.067E-17 | 4.510E-20 | 9.679E-23 | 1.006E-24 | 2.112E-25 | 4.609E-28 | 1.006E-30 |
| ru106 | 1.287E+04 | 1.282E+04 | 1.272E+04 | 1.231E+04 | 1.123E+04 | 1.003E+04 | 6.232E+03 | 3.156E+03 | 1.598E+03 | 8.076E+02 | 4.864E+02 | 4.089E+02 | 2.071E+02 | 1.048E+02 |

1

5 more years for cooling used fuel material fission products page 31

0

nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rh106 | 1.287E+04 | 1.282E+04 | 1.272E+04 | 1.231E+04 | 1.123E+04 | 1.003E+04 | 6.232E+03 | 3.156E+03 | 1.598E+03 | 8.076E+02 | 4.864E+02 | 4.089E+02 | 2.071E+02 | 1.048E+02 |
| ag106m | 1.200E-16 | 1.015E-16 | 6.967E-17 | 1.610E-17 | 2.663E-19 | 1.613E-21 | 8.643E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.219E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 |
| ag108 | 7.956E-06 | 7.955E-06 | 7.955E-06 | 7.955E-06 | 7.953E-06 | 7.951E-06 | 7.942E-06 | 7.930E-06 | 7.917E-06 | 7.905E-06 | 7.895E-06 | 7.892E-06 | 7.880E-06 | 7.867E-06 |
| ag108m | 9.144E-05 | 9.144E-05 | 9.144E-05 | 9.143E-05 | 9.141E-05 | 9.139E-05 | 9.129E-05 | 9.114E-05 | 9.100E-05 | 9.086E-05 | 9.075E-05 | 9.071E-05 | 9.057E-05 | 9.043E-05 |
| ag109m | 9.007E-03 | 8.980E-03 | 8.919E-03 | 8.688E-03 | 8.071E-03 | 7.364E-03 | 5.021E-03 | 2.901E-03 | 1.677E-03 | 9.675E-04 | 6.430E-04 | 5.591E-04 | 3.231E-04 | 1.867E-04 |
| cd109 | 9.007E-03 | 8.980E-03 | 8.919E-03 | 8.688E-03 | 8.071E-03 | 7.364E-03 | 5.021E-03 | 2.901E-03 | 1.677E-03 | 9.675E-04 | 6.430E-04 | 5.591E-04 | 3.231E-04 | 1.867E-04 |
| ag110 | 1.569E+00 | 1.560E+00 | 1.541E+00 | 1.468E+00 | 1.281E+00 | 1.082E+00 | 5.330E-01 | 1.935E-01 | 7.028E-02 | 2.545E-02 | 1.196E-02 | 9.243E-03 | 3.356E-03 | 1.219E-03 |
| ag110m | 1.154E+02 | 1.147E+02 | 1.133E+02 | 1.079E+02 | 9.420E+01 | 7.953E+01 | 3.919E+01 | 1.423E+01 | 5.168E+00 | 1.871E+00 | 8.797E-01 | 6.796E-01 | 2.468E-01 | 8.962E-02 |
| ag111 | 3.798E-07 | 3.153E-07 | 2.075E-07 | 4.072E-08 | 4.265E-10 | 1.462E-12 | 7.266E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 | 2.340E-15 |
| cd113m | 1.898E-02 | 1.898E-02 | 1.896E-02 | 1.892E-02 | 1.880E-02 | 1.864E-02 | 1.801E-02 | 1.715E-02 | 1.633E-02 | 1.554E-02 | 1.498E-02 | 1.480E-02 | 1.409E-02 | 1.341E-02 |
| in113m | 1.338E-08 | 1.322E-08 | 1.287E-08 | 1.158E-08 | 8.623E-09 | 5.972E-09 | 1.286E-09 | 1.427E-10 | 1.584E-11 | 1.747E-12 | 3.396E-13 | 1.939E-13 | 2.153E-14 | 2.389E-15 |
| sn113 | 1.338E-08 | 1.322E-08 | 1.286E-08 | 1.158E-08 | 8.618E-09 | 5.968E-09 | 1.285E-09 | 1.426E-10 | 1.583E-11 | 1.746E-12 | 3.394E-13 | 1.938E-13 | 2.151E-14 | 2.388E-15 |
| in114 | 1.512E-04 | 1.470E-04 | 1.380E-04 | 1.080E-04 | 5.440E-05 | 2.316E-05 | 6.520E-07 | 3.935E-09 | 2.375E-11 | 1.414E-13 | 3.137E-15 | 8.531E-16 | 5.149E-18 | 3.108E-20 |
| in114m | 1.562E-04 | 1.519E-04 | 1.426E-04 | 1.117E-04 | 5.623E-05 | 2.394E-05 | 6.739E-07 | 4.067E-09 | 2.455E-11 | 1.461E-13 | 3.242E-15 | 8.818E-16 | 5.322E-18 | 3.212E-20 |
| cd115m | 3.986E-03 | 3.864E-03 | 3.603E-03 | 2.744E-03 | 1.281E-03 | 4.958E-04 | 6.588E-08 | 3.212E-06 | 1.099E-08 | 3.702E-11 | 5.381E-13 | 1.046E-13 | 4.329E-16 | 1.682E-18 |
| in115 | 3.793E-13 | 3.793E-13 | 3.793E-13 | 3.793E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 | 3.794E-13 |
| in115m | 4.235E-05 | 4.108E-05 | 3.828E-05 | 2.916E-05 | 1.360E-05 | 5.267E-06 | 9.975E-08 | 3.413E-10 | 1.168E-12 | 3.933E-15 | 5.717E-17 | 1.345E-17 | 4.603E-20 | 1.575E-22 |
| cd116 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 | 1.829E-17 |
| sn117m | 1.224E-05 | 1.105E-05 | 8.787E-06 | 3.601E-06 | 2.964E-07 | 1.323E-08 | 3.001E-14 | 2.501E-22 | 2.084E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 4.226E+00 | 4.206E+00 | 4.162E+00 | 3.993E+00 | 3.556E+00 | 3.078E+00 | 1.684E+00 | 7.100E-01 | 2.994E-01 | 1.260E-01 | 6.619E-02 | 5.311E-02 | 2.240E-02 | 9.445E-03 |
| sb120m | 4.249E-16 | 3.340E-16 | 1.944E-16 | 2.366E-17 | 6.503E-20 | 4.218E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 6.402E-01 | 6.402E-01 | 6.400E-01 | 6.396E-01 | 6.382E-01 | 6.365E-01 | 6.296E-01 | 6.197E-01 | 6.100E-01 | 6.004E-01 | 5.934E-01 | 5.910E-01 | 5.818E-01 | 5.727E-01 |
| sn121m | 8.250E-01 | 8.249E-01 | 8.247E-01 | 8.240E-01 | 8.224E-01 | 8.202E-01 | 8.118E-01 | 7.985E-01 | 7.860E-01 | 7.737E-01 | 7.646E-01 | 7.616E-01 | 7.496E-01 | 7.379E-01 |
| te121 | 3.266E-05 | 3.239E-05 | 3.177E-05 | 2.951E-05 | 2.399E-05 | 1.854E-05 | 6.320E-06 | 1.353E-06 | 2.899E-07 | 6.184E-08 | 1.962E-08 | 1.325E-08 | 2.838E-09 | 6.079E-10 |
| te121m | 3.254E-05 | 3.227E-05 | 3.166E-05 | 2.941E-05 | 2.391E-05 | 1.848E-05 | 6.299E-06 | 1.349E-06 | 2.890E-07 | 6.165E-08 | 1.956E-08 | 1.321E-08 | 2.829E-09 | 6.060E-10 |
| sn123 | 1.211E+01 | 1.198E+01 | 1.169E+01 | 1.065E+01 | 8.185E+00 | 5.901E+00 | 1.502E+00 | 2.120E-01 | 2.991E-02 | 4.199E-03 | 9.758E-04 | 5.925E-04 | 8.360E-05 | 1.180E-05 |
| te123m | 7.021E-02 | 6.940E-02 | 6.761E-02 | 6.107E-02 | 4.593E-02 | 3.221E-02 | 7.312E-03 | 8.755E-04 | 1.048E-04 | 1.248E-05 | 2.566E-06 | 1.494E-06 | 1.789E-07 | 2.142E-08 |
| sb124 | 1.436E+00 | 1.403E+00 | 1.332E+00 | 1.089E+00 | 6.195E-01 | 3.069E-01 | 1.629E-02 | 2.436E-04 | 3.643E-06 | 5.386E-08 | 2.350E-09 | 8.055E-10 | 1.205E-11 | 1.802E-13 |
| sn125 | 7.553E-06 | 6.541E-06 | 4.733E-06 | 1.345E-06 | 3.967E-08 | 4.939E-10 | 5.378E-18 | 2.151E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 2.478E+02 | 2.475E+02 | 2.467E+02 | 2.438E+02 | 2.357E+02 | 2.260E+02 | 1.896E+02 | 1.475E+02 | 1.148E+02 | 8.922E+01 | 7.400E+01 | 6.941E+01 | 5.400E+01 | 4.201E+01 |
| te125m

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 5.421E-04 | 4.823E-04 | 3.706E-04 | 1.331E-04 | 7.558E-06 | 2.126E-07 | 6.984E-14 | 3.664E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.759E-11 | 1.525E-11 | 1.106E-11 | 3.169E-12 | 9.605E-14 | 1.249E-15 | 2.537E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 2.657E-14 | 2.356E-14 | 1.796E-14 | 6.255E-15 | 3.263E-16 | 8.256E-18 | 1.745E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 5.309E-12 | 4.287E-12 | 2.649E-12 | 4.075E-13 | 2.157E-15 | 3.162E-18 | 4.506E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 32

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe133 | 7.199E-10 | 5.527E-10 | 3.048E-10 | 3.015E-11 | 4.634E-14 | 1.457E-17 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 8.194E-04 | 8.191E-04 | 8.185E-04 | 8.159E-04 | 8.087E-04 | 7.999E-04 | 7.639E-04 | 7.152E-04 | 6.696E-04 | 6.268E-04 | 5.968E-04 | 5.868E-04 | 5.494E-04 | 5.144E-04 |
| cs134 | 3.217E+03 | 3.211E+03 | 3.198E+03 | 3.147E+03 | 3.008E+03 | 2.844E+03 | 2.250E+03 | 1.609E+03 | 1.150E+03 | 8.219E+02 | 6.401E+02 | 5.877E+02 | 4.202E+02 | 3.005E+02 |
| cs135 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 | 1.515E-02 |
| cs136 | 4.716E-03 | 4.244E-03 | 3.349E-03 | 1.332E-03 | 1.009E-04 | 4.058E-06 | 5.960E-12 | 2.667E-20 | 1.193E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 5.222E-04 | 4.700E-04 | 3.708E-04 | 1.475E-04 | 1.117E-05 | 4.494E-07 | 6.600E-13 | 2.953E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.268E+03 | 2.267E+03 | 2.267E+03 | 2.264E+03 | 2.257E+03 | 2.249E+03 | 2.213E+03 | 2.162E+03 | 2.113E+03 | 2.065E+03 | 2.030E+03 | 2.018E+03 | 1.972E+03 | 1.927E+03 |
| ba137m | 2.147E+03 | 2.147E+03 | 2.147E+03 | 2.144E+03 | 2.138E+03 | 2.129E+03 | 2.095E+03 | 2.048E+03 | 2.001E+03 | 1.955E+03 | 1.922E+03 | 1.911E+03 | 1.867E+03 | 1.825E+03 |
| la137 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.622E-07 | 3.622E-07 |
| la138 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 | 1.161E-11 |
| ce139 | 1.911E-01 | 1.892E-01 | 1.849E-01 | 1.693E-01 | 1.323E-01 | 9.731E-02 | 2.694E-02 | 4.287E-03 | 6.821E-04 | 1.080E-04 | 2.745E-05 | 1.718E-05 | 2.734E-06 | 4.350E-07 |
| ba140 | 6.251E-02 | 5.607E-02 | 4.391E-02 | 1.696E-02 | 1.183E-03 | 4.295E-05 | 4.109E-11 | 9.953E-20 | 2.411E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 7.199E-02 | 6.457E-02 | 5.056E-02 | 1.957E-02 | 1.362E-03 | 4.946E-05 | 4.731E-11 | 1.146E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.628E+02 | 1.560E+02 | 1.417E+02 | 9.757E+01 | 3.432E+01 | 9.347E+00 | 4.067E-02 | 1.696E-05 | 7.068E-09 | 2.884E-12 | 8.735E-15 | 1.202E-15 | 5.013E-19 | 2.090E-22 |
| pr143 | 1.208E-01 | 1.091E-01 | 8.670E-02 | 3.547E-02 | 2.903E-03 | 1.287E-04 | 2.836E-10 | 2.268E-18 | 1.814E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.006E-10 | 1.001E-10 | 9.893E-11 | 9.451E-11 | 8.314E-11 | 7.088E-11 | 1.400E-12 | 5.390E-14 | 2.152E-15 | 1.016E-12 | 7.965E-13 | 3.066E-13 | 1.890E-13 | 1.188E-13 |
| ce144 | 1.070E+04 | 1.065E+04 | 1.053E+04 | 1.009E+04 | 8.959E+03 | 7.724E+03 | 4.153E+03 | 1.709E+03 | 7.032E+02 | 2.887E+02 | 1.489E+02 | 1.188E+02 | 4.887E+01 | 2.011E+01 |
| pr144 | 1.070E+04 | 1.065E+04 | 1.053E+04 | 1.009E+04 | 8.960E+03 | 7.724E+03 | 4.153E+03 | 1.709E+03 | 7.032E+02 | 2.887E+02 | 1.489E+02 | 1.188E+02 | 4.887E+01 | 2.011E+01 |
| pr144m | 1.022E+02 | 1.017E+02 | 1.006E+02 | 9.638E+01 | 8.554E+01 | 7.375E+01 | 3.966E+01 | 1.632E+01 | 6.714E+00 | 2.756E+00 | 1.422E+00 | 1.134E+00 | 4.666E-01 | 1.920E-01 |
| nd144 | 1.880E-11 | 1.881E-11 | 1.885E-11 | 1.900E-11 | 1.939E-11 | 1.981E-11 | 2.103E-11 | 2.186E-11 | 2.220E-11 | 2.234E-11 | 2.239E-11 | 2.240E-11 | 2.242E-11 | 2.243E-11 |
| pm144 | 2.193E-08 | 2.185E-08 | 2.166E-08 | 2.095E-08 | 1.908E-08 | 1.698E-08 | 1.044E-08 | 5.198E-09 | 2.589E-09 | 1.287E-09 | 7.656E-10 | 6.411E-10 | 3.193E-10 | 1.590E-10 |
| pm145 | 8.333E-05 | 8.331E-05 | 8.328E-05 | 8.315E-05 | 8.279E-05 | 8.233E-05 | 8.034E-05 | 7.744E-05 | 7.456E-05 | 7.173E-05 | 6.968E-05 | 6.899E-05 | 6.636E-05 | 6.381E-05 |
| sm145 | 1.489E-05 | 1.483E-05 | 1.470E-05 | 1.418E-05 | 1.283E-05 | 1.133E-05 | 6.718E-06 | 3.202E-06 | 1.521E-06 | 7.221E-07 | 4.143E-07 | 3.425E-07 | 1.629E-07 | 7.738E-08 |
| pm146 | 3.273E-03 | 3.270E-03 | 3.265E-03 | 3.246E-03 | 3.192E-03 | 3.126E-03 | 2.864E-03 | 2.527E-03 | 2.229E-03 | 1.966E-03 | 1.791E-03 | 1.735E-03 | 1.530E-03 | 1.350E-03 |
| sm146 | 1.317E-09 | 1.317E-09 | 1.317E-09 | 1.317E-09 | 1.318E-09 | 1.319E-09 | 1.324E-09 | 1.330E-09 | 1.336E-09 | 1.341E-09 | 1.344E-09 | 1.345E-09 | 1.349E-09 | 1.352E-09 |
| nd147 | 2.922E-03 | 2.575E-03 | 1.939E-03 | 6.422E-04 | 2.913E-05 | 6.193E-07 | 6.320E-14 | 6.219E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.746E+03 | 2.742E+03 | 2.733E+03 | 2.699E+03 | 2.605E+03 | 2.493E+03 | 2.073E+03 | 1.592E+03 | 1.222E+03 | 9.380E+02 | 7.704E+02 | 7.203E+02 | 5.532E+02 | 4.248E+02 |
| sm147 | 4.312E-08 | 4.322E-08 | 4.344E-08 | 4.429E-08 | 4.662E-08 | 4.940E-08 | 5.979E-08 | 7.170E-08 | 8.084E-08 | 8.787E-08 | 9.202E-08 | 9.326E-08 | 9.740E-08 | 1.006E-07 |
| eu147 | 3.652E-15 | 3.448E-15 | 3.030E-15 | 1.831E-15 | 4.474E-16 | 7.741E-17 | 5.053E-20 | 1.394E-24 | 3.847E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 8.344E-01 | 8.069E-01 | 7.481E-01 | 5.577E-01 | 2.450E-01 | 8.808E-02 | 1.217E-03 | 2.656E-06 | 5.796E-09 | 1.244E-11 | 1.293E-13 | 2.767E-14 | 5.923E-17 | 1.292E-19 |
| pm148m | 1.728E+01 | 1.671E+01 | 1.550E+01 | 1.155E+01 | 5.075E+00 | 1.823E+00 | 2.521E-02 | 5.501E-05 | 1.201E-07 | 2.576E-10 | 2.679E-12 | 5.622E-13 | 1.227E-15 | 2.677E-18 |
| sm148 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 | 1.085E-12 |
| eu149 | 1.335E-08 | 1.315E-08 | 1.272E-08 | 1.116E-08 | 7.751E-09 | 4.922E-09 | 7.373E-10 | 4.869E-11 | 3.215E-12 | 2.108E-13 | 2.782E-14 | 1.392E-14 | 9.191E-16 | 6.070E-17 |
| nd150 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 | 1.387E-15 |
| sm151 | 1.108E+01 | 1.108E+01 | 1.108E+01 | 1.107E+01 | 1.106E+01 | 1.105E+01 | 1.099E+01 | 1.090E+01 | 1.082E+01 | 1.074E+01 | 1.067E+01 | 1.065E+01 | 1.057E+01 | 1.049E+01 |
| gd151 | 1.102E-05 | 1.090E-05 | 1.063E-05 | 9.637E-06 | 7.328E-06 | 5.211E-06 | 1.253E-06 | 1.628E-07 | 2.117E-08 | 2.736E-09 | 5.981E-10 | 3.556E-10 | 4.623E-11 | 6.009E-12 |
| eu152 | 1.088E-01 | 1.088E-01 | 1.087E-01 | 1.085E-01 | 1.077E-01 | 1.068E-01 | 1.031E-01 | 9.792E-02 | 9.303E-02 | 8.838E-02 | 8.507E-02 | 8.397E-02 | 7.978E-02 | 7.580E-02 |
| gd152 | 2.790E-14 | 2.790E-14 | 2.790E-14 | 2.791E-14 | 2.794E-14 | 2.797E-14 | 2.811E-14 | 2.828E-14 | 2.845E-14 | 2.862E-14 | 2.877E-14 | 2.882E-14 | 2.892E-14 | 2.906E-14 |
| gd153 | 1.970E-01 | 1.958E-01 | 1.933E-01 | 1.838E-01 | 1.596E-01 | 1.338E-01 | 6.416E-02 | 2.240E-02 | 7.819E-03 | 2.722E-03 | 1.242E-03 | 9.502E-04 | 3.317E-04 | 1.158E-04 |
| eu154 | 2.566E+02 | 2.565E+02 | 2.562E+02 | 2.552E+02 | 2.525E+02 | 2.491E+02 | 2.355E+02 | 2.172E+02 | 2.004E+02 | 1.849E+02 | 1.741E+02 | 1.706E+02 | 1.574E+02 | 1.452E+02 |
| eu155 | 1.125E+02 | 1.124E+02 | 1.122E+02 | 1.114E+02 | 1.092E+02 | 1.066E+02 | 9.629E+01 | 8.323E+01 | 7.194E+01 | 6.216E+01 | 5.577E+01 | 5.373E+01 | 4.645E+01 | 4.015E+01 |
| eu156 | 1.058E-01 | 9.653E-02 | 7.861E-02 | 3.537E-02 | 3.781E-03 | 2.337E-04 | 2.066E-09 | 1.207E-16 | 7.050E-24 | 3.934E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 4.415E-07 | 4.414E-07 | 4.414E-07 | 4.412E-07 | 4.406E-07 | 4.399E-07 | 4.369E-07 | 4.327E-07 | 4.285E-07 | 4.243E-07 | 4.212E-07 | 4.202E-07 | 4.161E-07 | 4.120E-07 |
| tb158 | 2.223E-05 | 2.223E-05 | 2.223E-05 | 2.222E-05 | 2.221E-05 | 2.220E-05 | 2.214E-05 | 2.205E-05 | 2.197E-05 | 2.188E-05 | 2.182E-05 | 2.180E-05 | 2.171E-05 | 2.163E-05 |
| dy159 | 2.834E-05 | 2.807E-05 | 2.747E-05 | 2.525E-05 | 1.996E-05 | 1.489E-05 | 4.379E-06 | 7.594E-07 | 1.317E-07 | 2.273E-08 | 6.159E-09 | 3.941E-09 | 6.834E-10 | 1.185E-10 |
| tb160 | 4.030E+00 | 3.953E+00 | 3.786E+00 | 3.201E+00 | 2.001E+00 | 1.115E+00 | 9.674E-02 | 2.923E-03 | 8.833E-05 | 2.644E-06 | 1.949E-07 | 7.989E-08 | 2.414E-09 | 7.295E-11 |
| tb161 | 1.560E-09 | 1.277E-09 | 8.126E-10 | 1.403E-10 | 1.026E-12 | 2.250E-15 | 1.725E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.778E-09 | 1.778E-09 | 1.778E-09 | 1.778E-09 | 1.778E-09 | 1.778E-09 | 1.778E-09 | 1.777E-09 | 1.777E-09 | 1.777E-09 | 1.777E-09 | 1.777E-09 | 1.776E-09 | 1.776E-09 |
| ho166m | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.863E-05 | 1.863E-05 | 1.862E-05 | 1.860E-05 | 1.859E-05 | 1.859E-05 | 1.858E-05 | 1.857E-05 | 1.856E-05 |
| tm167 | 2.306E-16 | 1.985E-16 | 1.417E-16 | 3.817E-17 | 9.707E-19 | 1.004E-20 | 5.049E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.590E-07 | 1.567E-07 | 1.515E-07 | 1.330E-07 | 9.235E-08 | 5.864E-08 | 8.783E-09 | 5.800E-10 | 3.830E-11 | 2.511E-12 | 3.314E-13 | 1.658E-13 | 1.095E-14 | 7.231E-16 |
| er169 | 8.575E-10 | 7.398E-10 | 5.308E-10 | 1.459E-10 | 3.921E-12 | 4.348E-14 | 2.918E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 33

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb169 | 2.135E-09 | 2.045E-09 | 1.855E-09 | 1.270E-09 | 4.397E-10 | 1.174E-10 | 4.700E-13 | 1.739E-16 | 6.437E-20 | 2.331E-23 | 6.460E-26 | 8.626E-27 | 3.192E-30 | 0.000E+00 |
| tm170 | 5.687E-03 | 5.626E-03 | 5.491E-03 | 4.997E-03 | 3.837E-03 | 2.762E-03 | 6.987E-04 | 9.770E-05 | 1.366E-05 | 1.900E-06 | 4.385E-07 | 2.657E-07 | 3.715E-08 | 5.194E-09 |
| tm171 | 2.942E-03 | 2.936E-03 | 2.923E-03 | 2.873E-03 | 2.737E-03 | 2.577E-03 | 2.003E-03 | 1.396E-03 | 9.735E-04 | 6.780E-04 | 5.181E-04 | 4.726E-04 | 3.295E-04 | 2.297E-04 |
| total | 6.826E+04 | 6.786E+04 | 6.697E+04 | 6.378E+04 | 5.643E+04 | 4.946E+04 | 3.185E+04 | 1.930E+04 | 1.312E+04 | 9.893E+03 | 8.485E+03 | 8.122E+03 | 7.074E+03 | 6.404E+03 |

1

5 more years for cooling used fuel material fission products page 34

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.193E+01 | 1.192E+01 | 1.191E+01 | 1.188E+01 | 1.179E+01 | 1.168E+01 | 1.123E+01 | 1.062E+01 | 1.004E+01 | 9.487E+00 | 9.098E+00 | 8.968E+00 | 8.478E+00 | 8.014E+00 |
| ga | 2.516E-17 | 2.504E-17 | 2.475E-17 | 2.367E-17 | 2.088E-17 | 1.786E-17 | 9.302E-18 | 3.657E-18 | 1.437E-18 | 5.635E-19 | 2.810E-19 | 2.215E-19 | 8.707E-20 | 3.422E-20 |
| ge | 6.463E-08 | 6.352E-08 | 6.110E-08 | 5.253E-08 | 3.441E-08 | 2.032E-08 | 2.249E-09 | 9.633E-11 | 4.125E-12 | 1.751E-13 | 1.674E-14 | 7.499E-15 | 3.212E-16 | 1.379E-17 |
| as | 7.212E-08 | 7.045E-08 | 6.692E-08 | 5.547E-08 | 3.485E-08 | 2.037E-08 | 2.249E-09 | 9.633E-11 | 4.125E-12 | 1.751E-13 | 1.674E-14 | 7.499E-15 | 3.211E-16 | 1.375E-17 |
| se | 1.425E-03 | 1.425E-03 | 1.425E-03 | 1.424E-03 | 1.424E-03 | 1.423E-03 | 1.423E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 | 1.422E-03 |
| kr | 1.172E+02 | 1.171E+02 | 1.170E+02 | 1.167E+02 | 1.157E+02 | 1.144E+02 | 1.094E+02 | 1.026E+02 | 9.617E+01 | 9.015E+01 | 8.593E+01 | 8.453E+01 | 7.926E+01 | 7.432E+01 |
| rb | 4.404E-03 | 4.092E-03 | 3.470E-03 | 1.831E-03 | 3.168E-04 | 4.316E-05 | 1.331E-06 | 2.977E-07 | 2.442E-07 | 2.414E-07 | 2.413E-07 | 2.413E-07 | 2.412E-07 | 2.412E-07 |
| sr | 1.142E+03 | 1.133E+03 | 1.113E+03 | 1.044E+03 | 9.200E+02 | 8.449E+02 | 7.784E+02 | 7.583E+02 | 7.403E+02 | 7.226E+02 | 7.098E+02 | 7.054E+02 | 6.887E+02 | 6.723E+02 |
| y | 1.579E+03 | 1.560E+03 | 1.520E+03 | 1.384E+03 | 1.122E+03 | 9.499E+02 | 7.847E+02 | 7.586E+02 | 7.404E+02 | 7.228E+02 | 7.099E+02 | 7.056E+02 | 6.888E+02 | 6.725E+02 |
| zr | 1.831E+03 | 1.792E+03 | 1.707E+03 | 1.412E+03 | 8.310E+02 | 4.294E+02 | 2.719E+01 | 5.496E-01 | 3.725E-02 | 2.740E-02 | 2.722E-02 | 2.721E-02 | 2.721E-02 | 2.721E-02 |
| nb | 3.801E+03 | 3.724E+03 | 3.557E+03 | 2.970E+03 | 1.781E+03 | 9.332E+02 | 6.006E+01 | 1.199E+00 | 2.836E-02 | 6.696E-03 | 6.919E-03 | 7.119E-03 | 7.928E-03 | 8.710E-03 |
| mo | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.890E-09 | 6.889E-09 | 6.889E-09 | 6.887E-09 | 6.886E-09 | 6.885E-09 | 6.884E-09 | 6.884E-09 | 6.883E-09 | 6.881E-09 |
| tc | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.784E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 | 2.783E-01 |
| ru | 1.339E+04 | 1.332E+04 | 1.318E+04 | 1.265E+04 | 1.138E+04 | 1.007E+04 | 6.232E+03 | 3.156E+03 | 1.598E+03 | 8.076E+02 | 4.864E+02 | 4.089E+02 | 2.071E+02 | 1.048E+02 |
| rh | 1.338E+04 | 1.332E+04 | 1.317E+04 | 1.264E+04 | 1.137E+04 | 1.007E+04 | 6.232E+03 | 3.156E+03 | 1.598E+03 | 8.076E+02 | 4.864E+02 | 4.089E+02 | 2.071E+02 | 1.049E+02 |
| pd | 5.245E-03 | 5.244E-03 | 5.242E-03 | 5.236E-03 | 5.236E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 | 5.235E-03 |
| ag | 1.169E+02 | 1.163E+02 | 1.148E+02 | 1.094E+02 | 9.549E+01 | 8.062E+01 | 3.973E+01 | 1.443E+01 | 5.240E+00 | 1.898E+00 | 8.924E-01 | 6.895E-01 | 2.506E-01 | 9.112E-02 |
| cd | 4.266E-01 | 4.144E-01 | 3.882E-01 | 3.020E-01 | 1.549E-01 | 7.558E-02 | 2.397E-02 | 2.005E-02 | 1.800E-02 | 1.651E-02 | 1.563E-02 | 1.536E-02 | 1.441E-02 | 1.360E-02 |
| in | 3.498E-04 | 3.400E-04 | 3.190E-04 | 2.488E-04 | 1.242E-04 | 5.237E-05 | 1.427E-06 | 8.487E-09 | 6.568E-11 | 2.418E-12 | 7.254E-13 | 5.751E-13 | 4.009E-13 | 3.818E-13 |
| sn | 1.781E+01 | 1.766E+01 | 1.733E+01 | 1.611E+01 | 1.321E+01 | 1.044E+01 | 4.635E+00 | 2.349E+00 | 1.734E+00 | 1.513E+00 | 1.434E+00 | 1.415E+00 | 1.363E+00 | 1.329E+00 |
| sb | 2.493E+02 | 2.489E+02 | 2.481E+02 | 2.449E+02 | 2.363E+02 | 2.263E+02 | 1.897E+02 | 1.475E+02 | 1.148E+02 | 8.923E+01 | 7.401E+01 | 6.942E+01 | 5.401E+01 | 4.202E+01 |
| te | 1.690E+02 | 1.673E+02 | 1.635E+02 | 1.501E+02 | 1.216E+02 | 9.776E+01 | 5.470E+01 | 3.694E+01 | 2.818E+01 | 2.186E+01 | 1.812E+01 | 1.700E+01 | 1.322E+01 | 1.029E+01 |
| i | 8.678E-04 | 8.506E-04 | 8.594E-04 | 8.480E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 | 8.478E-04 |
| xe | 5.797E-04 | 5.185E-04 | 4.038E-04 | 1.569E-04 | 1.692E-05 | 3.143E-06 | 2.281E-08 | 2.185E-11 | 2.093E-14 | 1.968E-17 | 1.108E-19 | 1.885E-20 | 1.806E-23 | 1.731E-26 |
| cs | 5.485E+03 | 5.478E+03 | 5.465E+03 | 5.411E+03 | 5.265E+03 | 5.093E+03 | 4.463E+03 | 3.771E+03 | 3.264E+03 | 2.887E+03 | 2.670E+03 | 2.606E+03 | 2.392E+03 | 2.228E+03 |
| ba | 2.148E+03 | 2.147E+03 | 2.147E+03 | 2.144E+03 | 2.138E+03 | 2.129E+03 | 2.095E+03 | 2.048E+03 | 2.001E+03 | 1.955E+03 | 1.922E+03 | 1.911E+03 | 1.867E+03 | 1.825E+03 |
| la | 7.199E-02 | 6.457E-02 | 5.056E-02 | 1.957E-02 | 1.362E-03 | 4.982E-05 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 | 3.623E-07 |
| ce | 1.086E+04 | 1.080E+04 | 1.067E+04 | 1.019E+04 | 8.994E+03 | 7.733E+03 | 4.153E+03 | 1.709E+03 | 7.032E+02 | 2.887E+02 | 1.489E+02 | 1.188E+02 | 4.887E+01 | 2.011E+01 |
| pr | 1.080E+04 | 1.075E+04 | 1.063E+04 | 1.019E+04 | 9.045E+03 | 7.798E+03 | 4.193E+03 | 1.725E+03 | 7.100E+02 | 2.914E+02 | 1.504E+02 | 1.199E+02 | 4.934E+01 | 2.030E+01 |
| nd | 2.922E-03 | 2.575E-03 | 1.939E-03 | 6.422E-04 | 2.913E-05 | 6.193E-07 | 2.199E-11 | 2.186E-11 | 2.220E-11 | 2.234E-11 | 2.239E-11 | 2.240E-11 | 2.242E-11 | 2.243E-11 |
| pm | 2.764E+03 | 2.760E+03 | 2.750E+03 | 2.711E+03 | 2.610E+03 | 2.494E+03 | 2.073E+03 | 1.592E+03 | 1.222E+03 | 9.380E+02 | 7.704E+02 | 7.203E+02 | 5.532E+02 | 4.248E+02 |
| sm | 1.108E+01 | 1.108E+01 | 1.108E+01 | 1.107E+01 | 1.106E+01 | 1.105E+01 | 1.099E+01 | 1.090E+01 | 1.082E+01 | 1.074E+01 | 1.067E+01 | 1.065E+01 | 1.057E+01 | 1.049E+01 |
| eu | 3.693E+02 | 3.690E+02 | 3.686E+02 | 3.668E+02 | 3.618E+02 | 3.558E+02 | 3.319E+02 | 3.006E+02 | 2.725E+02 | 2.471E+02 | 2.300E+02 | 2.244E+02 | 2.039E+02 | 1.854E+02 |
| gd | 1.970E-01 | 1.959E-01 | 1.933E-01 | 1.838E-01 | 1.596E-01 | 1.339E-01 | 6.417E-02 | 2.240E-02 | 7.820E-03 | 2.722E-03 | 1.242E-03 | 9.502E-04 | 3.317E-04 | 1.158E-04 |
| tb | 4.030E+00 | 3.953E+00 | 3.786E+00 | 3.201E+00 | 2.001E+00 | 1.115E+00 | 9.676E-02 | 2.946E-03 | 1.107E-04 | 2.495E-05 | 2.243E-05 | 2.230E-05 | 2.213E-05 | 2.204E-05 |
| dy | 2.834E-05 | 2.807E-05 | 2.747E-05 | 2.525E-05 | 1.996E-05 | 1.489E-05 | 4.379E-06 | 7.594E-07 | 1.317E-07 | 2.273E-08 | 6.159E-09 | 3.941E-09 | 6.834E-10 | 1.185E-10 |
| ho | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.864E-05 | 1.863E-05 | 1.863E-05 | 1.862E-05 | 1.861E-05 | 1.860E-05 | 1.859E-05 | 1.859E-05 | 1.857E-05 | 1.856E-05 |
| er | 8.575E-10 | 7.398E-10 | 5.308E-10 | 1.459E-10 | 3.921E-12 | 4.348E-14 | 2.918E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 8.629E-03 | 8.562E-03 | 8.415E-03 | 7.870E-03 | 6.574E-03 | 5.339E-03 | 2.702E-03 | 1.494E-03 | 9.871E-04 | 6.799E-04 | 5.186E-04 | 4.729E-04 | 3.295E-04 | 2.297E-04 |
| yb | 2.135E-09 | 2.045E-09 | 1.855E-09 | 1.270E-09 | 4.397E-10 | 1.174E-10 | 4.700E-13 | 1.739E-16 | 6.437E-20 | 2.331E-23 | 6.460E-26 | 8.626E-27 | 3.192E-30 | 0.000E+00 |
| totals | 6.826E+04 | 6.786E+04 | 6.697E+04 | 6.378E+04 | 5.643E+04 | 4.946E+04 | 3.185E+04 | 1.930E+04 | 1.312E+04 | 9.893E+03 | 8.485E+03 | 8.122E+03 | 7.074E+03 | 6.404E+03 |

1

5 more years for cooling used fuel material fission products page 35

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 4.022E-04 | 4.021E-04 | 4.018E-04 | 4.007E-04 | 3.977E-04 | 3.940E-04 | 3.788E-04 | 3.581E-04 | 3.385E-04 | 3.200E-04 | 3.068E-04 | 3.025E-04 | 2.859E-04 | 2.703E-04 |
| ga 68 | 2.522E-19 | 2.509E-19 | 2.481E-19 | 2.372E-19 | 2.093E-19 | 1.790E-19 | 9.324E-20 | 3.665E-20 | 1.441E-20 | 5.649E-21 | 2.817E-21 | 2.220E-21 | 8.728E-22 | 3.431E-22 |
| ge 71 | 2.752E-16 | 2.438E-16 | 1.856E-16 | 6.421E-17 | 3.289E-18 | 8.138E-20 | 1.565E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 2.534E-11 | 2.491E-11 | 2.396E-11 | 2.060E-11 | 1.350E-11 | 7.971E-12 | 8.822E-13 | 3.778E-14 | 1.618E-15 | 6.868E-17 | 6.564E-18 | 2.941E-18 | 1.259E-19 | 5.393E-21 |
| as 73 | 3.736E-12 | 3.672E-12 | 3.532E-12 | 3.037E-12 | 1.989E-12 | 1.175E-12 | 1.300E-13 | 5.569E-15 | 2.385E-16 | 1.012E-17 | 9.675E-19 | 4.335E-19 | 1.856E-20 | 7.950E-22 |
| as 74 | 4.554E-11 | 4.212E-11 | 3.504E-11 | 1.786E-11 | 2.641E-12 | 2.460E-13 | 7.719E-17 | 7.679E-21 | 5.035E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 5.706E-09 | 5.641E-09 | 5.496E-09 | 4.967E-09 | 3.740E-09 | 2.628E-09 | 6.009E-10 | 7.271E-11 | 8.797E-12 | 1.058E-12 | 2.193E-13 | 1.280E-13 | 1.549E-14 | 1.874E-15 |
| se 79 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 | 4.705E-07 |
| kr 81 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 | 9.882E-13 |
| kr 83m | 4.414E-09 | 4.344E-09 | 4.190E-09 | 3.640E-09 | 2.454E-09 | 1.503E-09 | 1.934E-10 | 1.027E-11 | 5.458E-13 | 2.877E-14 | 3.228E-15 | 1.528E-15 | 8.120E-17 | 4.314E-18 |
| rb 83 | 7.189E-08 | 7.074E-08 | 6.823E-08 | 5.927E-08 | 3.997E-08 | 2.447E-08 | 3.149E-09 | 1.673E-10 | 8.889E-12 | 4.685E-13 | 5.258E-14 | 2.489E-14 | 1.322E-15 | 7.025E-17 |
| rb 84 | 5.640E-07 | 5.406E-07 | 4.916E-07 | 3.397E-07 | 1.207E-07 | 3.328E-08 | 1.525E-10 | 6.845E-14 | 3.073E-17 | 1.351E-20 | 4.322E-23 | 6.062E-24 | 2.721E-27 | 1.222E-30 |
| kr 85 | 1.756E-01 | 1.755E-01 | 1.754E-01 | 1.748E-01 | 1.731E-01 | 1.711E-01 | 1.639E-01 | 1.537E-01 | 1.441E-01 | 1.351E-01 | 1.288E-01 | 1.267E-01 | 1.188E-01 | 1.114E-01 |
| kr 85 | 2.191E-08 | 2.144E-08 | 2.044E-

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 91 | 2.808E+00 | 2.742E+00 | 2.600E+00 | 2.113E+00 | 1.182E+00 | 5.740E-01 | 2.799E-02 | 3.707E-04 | 4.910E-06 | 6.428E-08 | 2.562E-09 | 8.514E-10 | 1.128E-11 | 1.494E-13 |
| nb 91 | 1.055E-13 | 1.055E-13 | 1.055E-13 | 1.055E-13 | 1.055E-13 | 1.055E-13 | 1.054E-13 | 1.053E-13 | 1.052E-13 | 1.051E-13 | 1.050E-13 | 1.050E-13 | 1.049E-13 | 1.048E-13 |
| nb 91m | 2.651E-15 | 2.591E-15 | 2.462E-15 | 2.017E-15 | 1.154E-15 | 5.762E-16 | 1.157E-17 | 4.941E-19 | 7.735E-21 | 1.197E-22 | 5.404E-24 | 1.874E-24 | 2.933E-26 | 4.591E-28 |
| nb 92 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 | 1.517E-14 |
| nb 92m | 1.191E-16 | 1.039E-16 | 7.641E-17 | 2.313E-17 | 8.144E-19 | 1.264E-20 | 3.458E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 | 3.072E-06 |
| nb 93m | 4.127E-07 | 4.137E-07 | 4.159E-07 | 4.245E-07 | 4.486E-07 | 4.783E-07 | 6.003E-07 | 7.687E-07 | 9.299E-07 | 1.085E-06 | 1.196E-06 | 1.233E-06 | 1.375E-06 | 1.510E-06 |
| mo 93 | 6.593E-13 | 6.593E-13 | 6.593E-13 | 6.593E-13 | 6.593E-13 | 6.593E-13 | 6.592E-13 | 6.591E-13 | 6.589E-13 | 6.588E-13 | 6.587E-13 | 6.587E-13 | 6.586E-13 | 6.585E-13 |
| nb 94 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.064E-07 | 1.063E-07 |
| zr 95 | 9.229E-00 | 9.031E-00 | 8.602E-00 | 7.117E-00 | 4.188E-00 | 2.164E-00 | 1.369E-01 | 2.633E-03 | 5.083E-05 | 9.633E-07 | 5.070E-08 | 1.853E-08 | 3.563E-10 | 6.853E-12 |
| nb 95 | 1.813E+01 | 1.776E+01 | 1.696E+01 | 1.417E+01 | 8.494E+00 | 4.451E+00 | 2.865E-01 | 5.699E-03 | 1.097E-04 | 2.087E-06 | 1.066E-07 | 3.890E-08 | 7.714E-10 | 1.485E-11 |
| nb 95m | 3.098E-02 | 3.032E-02 | 2.888E-02 | 2.390E-02 | 1.406E-02 | 7.264E-03 | 4.596E-04 | 8.839E-06 | 1.700E-07 | 3.234E-09 | 1.702E-10 | 6.220E-11 | 1.196E-12 | 2.301E-14 |
| tc 95 | 9.636E-16 | 9.420E-16 | 8.950E-16 | 7.336E-16 | 4.204E-16 | 2.102E-16 | 1.159E-17 | 1.832E-19 | 2.895E-21 | 4.524E-23 | 2.057E-24 | 7.149E-25 | 1.130E-26 | 0.000E+00 |
| tc 95m | 2.145E-14 | 2.097E-14 | 1.992E-14 | 1.633E-14 | 9.357E-15 | 4.678E-15 | 2.580E-16 | 4.078E-18 | 6.444E-20 | 1.007E-21 | 4.578E-23 | 1.591E-23 | 2.514E-25 | 3.974E-27 |
| zr 96 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 | 2.681E-17 |
| tc 97 | 1.575E-14 | 1.575E-14 | 1.575E-14 | 1.577E-14 | 1.582E-14 | 1.585E-14 | 1.590E-14 | 1.591E-14 | 1.591E-14 | 1.591E-14 | 1.591E-14 | 1.591E-14 | 1.591E-14 | 1.591E-14 |
| tc 97m | 1.536E-08 | 1.512E-08 | 1.461E-08 | 1.279E-08 | 8.907E-09 | 5.534E-09 | 7.934E-10 | 4.921E-11 | 3.052E-12 | 1.879E-13 | 2.366E-14 | 1.165E-14 | 7.227E-16 | 4.483E-17 |
| tc 98 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 | 1.390E-09 |
| tc 99 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 | 9.108E-05 |
| rh 99 | 2.396E-18 | 2.198E-18 | 1.811E-18 | 8.525E-19 | 1.034E-19 | 7.481E-21 | 1.277E-25 | 1.912E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 | 8.985E-17 |
| rh101 | 1.942E-08 | 1.940E-08 | 1.935E-08 | 1.916E-08 | 1.863E-08 | 1.798E-08 | 1.553E-08 | 1.259E-08 | 1.021E-08 | 8.269E-09 | 7.072E-09 | 6.704E-09 | 5.434E-09 | 4.405E-09 |
| rh102 | 3.814E-04 | 3.789E-04 | 3.732E-04 | 3.520E-04 | 2.989E-04 | 2.438E-04 | 1.041E-04 | 3.087E-05 | 9.237E-06 | 2.823E-06 | 1.215E-06 | 9.219E-07 | 3.458E-07 | 1.633E-07 |
| rh102m | 4.132E-04 | 4.128E-04 | 4.118E-04 | 4.082E-04 | 3.982E-04 | 3.860E-04 | 3.392E-04 | 2.819E-04 | 2.343E-04 | 1.946E-04 | 1.695E-04 | 1.617E-04 | 1.344E-04 | 1.117E-04 |
| rh103 | 1.730E+00 | 1.670E+00 | 1.132E+00 | 4.765E-01 | 5.242E-02 | 5.772E-03 | 1.796E-03 | 2.849E-06 | 4.310E-09 | 7.042E-12 | 5.773E-14 | 1.117E-14 | 1.772E-17 | 2.811E-20 |
| rh103m | 1.184E-01 | 1.143E-01 | 1.056E-01 | 7.750E-02 | 3.262E-02 | 1.111E-02 | 1.229E-04 | 1.950E-07 | 3.094E-10 | 4.821E-13 | 3.952E-15 | 7.648E-16 | 1.213E-18 | 1.924E-21 |
| pd103 | 1.124E-09 | 1.036E-09 | 8.619E-10 | 4.221E-10 | 5.718E-11 | 4.748E-12 | 1.441E-16 | 4.919E-23 | 1.679E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 1.913E-14 | 1.850E-14 | 1.715E-14 | 1.279E-14 | 5.617E-15 | 2.017E-15 | 2.790E-17 | 6.089E-20 | 1.329E-22 | 2.852E-25 | 2.965E-27 | 6.223E-28 | 1.358E-30 | 2.963E-33 |
| ru106 | 7.652E-01 | 7.624E-01 | 7.560E-01 | 7.317E-01 | 6.678E-01 | 5.960E-01 | 3.705E-01 | 1.876E-01 | 9.500E-02 | 4.801E-02 | 2.892E-02 | 2.431E-02 | 1.231E-02 | 6.234E-03 |
| rh106 | 1.236E+02 | 1.231E+02 | 1.221E+02 | 1.181E+02 | 1.078E+02 | 9.624E+01 | 5.983E+01 | 3.029E+01 | 1.534E+01 | 7.753E+00 | 4.669E+00 | 3.926E+00 | 1.988E+00 | 1.007E+00 |

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5 more years for cooling used fuel material fission products page 36

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nuclide thermal power, watts

basis =~15.1 kgHHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag106m | 2.006E-18 | 1.697E-18 | 1.164E-18 | 2.690E-19 | 4.450E-21 | 2.695E-23 | 1.444E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 | 3.063E-07 |
| ag108 | 2.954E-08 | 2.954E-08 | 2.954E-08 | 2.954E-08 | 2.953E-08 | 2.953E-08 | 2.949E-08 | 2.945E-08 | 2.940E-08 | 2.935E-08 | 2.932E-08 | 2.931E-08 | 2.926E-08 | 2.921E-08 |
| ag108m | 8.870E-07 | 8.870E-07 | 8.870E-07 | 8.869E-07 | 8.867E-07 | 8.865E-07 | 8.855E-07 | 8.841E-07 | 8.829E-07 | 8.813E-07 | 8.803E-07 | 8.799E-07 | 8.785E-07 | 8.771E-07 |
| ag109m | 4.646E-06 | 4.632E-06 | 4.601E-06 | 4.482E-06 | 4.164E-06 | 3.799E-06 | 2.590E-06 | 1.497E-06 | 8.649E-07 | 4.991E-07 | 3.317E-07 | 2.884E-07 | 1.667E-07 | 9.632E-08 |
| cd109 | 1.127E-06 | 1.123E-06 | 1.116E-06 | 1.087E-06 | 1.010E-06 | 9.212E-07 | 6.280E-07 | 3.629E-07 | 2.097E-07 | 1.210E-07 | 8.042E-08 | 6.994E-08 | 4.042E-08 | 2.336E-08 |
| ag110 | 1.124E-02 | 1.118E-02 | 1.104E-02 | 1.052E-02 | 9.179E-03 | 7.749E-03 | 3.819E-03 | 1.387E-03 | 5.036E-04 | 1.824E-04 | 8.572E-05 | 6.622E-05 | 2.405E-05 | 8.733E-06 |
| ag110m | 1.938E+00 | 1.928E+00 | 1.904E+00 | 1.813E+00 | 1.583E+00 | 1.336E+00 | 6.585E-01 | 2.391E-01 | 8.684E-02 | 3.145E-02 | 1.478E-02 | 1.142E-02 | 4.147E-03 | 1.506E-03 |
| ag111 | 8.497E-10 | 7.054E-10 | 4.641E-10 | 9.109E-11 | 9.540E-13 | 3.271E-15 | 1.625E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 | 1.285E-18 |
| cd113m | 2.090E-05 | 2.089E-05 | 2.088E-05 | 2.083E-05 | 2.069E-05 | 2.052E-05 | 1.983E-05 | 1.888E-05 | 1.798E-05 | 1.711E-05 | 1.650E-05 | 1.629E-05 | 1.551E-05 | 1.477E-05 |
| in113m | 3.107E-11 | 3.070E-11 | 2.987E-11 | 2.689E-11 | 2.002E-11 | 1.386E-11 | 1.984E-12 | 3.312E-13 | 5.678E-14 | 4.056E-15 | 7.882E-16 | 4.502E-16 | 4.997E-17 | 5.546E-18 |
| sn113 | 2.359E-12 | 2.331E-12 | 2.269E-12 | 2.042E-12 | 1.520E-12 | 1.053E-12 | 2.266E-13 | 2.515E-14 | 2.792E-15 | 3.080E-16 | 5.985E-17 | 3.419E-17 | 3.794E-18 | 4.211E-19 |
| in114 | 6.954E-07 | 6.762E-07 | 6.349E-07 | 4.969E-07 | 2.503E-07 | 1.065E-07 | 2.999E-09 | 1.810E-11 | 1.093E-13 | 6.503E-16 | 1.443E-17 | 3.925E-18 | 2.369E-20 | 1.430E-22 |
| in114m | 2.063E-07 | 2.006E-07 | 1.884E-07 | 1.474E-07 | 7.425E-08 | 3.161E-08 | 8.899E-10 | 5.371E-12 | 3.242E-14 | 1.929E-16 | 4.281E-18 | 1.164E-18 | 7.028E-21 | 4.242E-23 |
| cd115m | 1.506E-03 | 1.460E-03 | 1.361E-03 | 1.037E-03 | 4.838E-04 | 1.873E-04 | 3.547E-06 | 1.213E-08 | 4.152E-11 | 1.398E-13 | 2.033E-15 | 4.784E-16 | 1.637E-18 | 5.600E-21 |
| in115 | 3.462E-16 | 3.463E-16 | 3.463E-16 | 3.463E-16 | 3.463E-16 | 3.463E-16 | 3.463E-16 | 3.464E-16 | 3.464E-16 | 3.464E-16 | 3.464E-16 | 3.464E-16 | 3.464E-16 | 3.464E-16 |
| in115m | 8.394E-08 | 8.142E-08 | 7.587E-08 | 5.779E-08 | 2.696E-08 | 1.044E-08 | 1.977E-10 | 6.764E-13 | 2.314E-15 | 7.795E-18 | 1.133E-19 | 2.667E-20 | 9.123E-23 | 3.121E-25 |
| cd116 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 | 1.523E-19 |
| sn117m | 2.290E-08 | 2.068E-08 | 1.644E-08 | 6.738E-09 | 5.545E-10 | 2.476E-11 | 5.615E-17 | 4.679E-25 | 3.899E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 2.194E-03 | 2.184E-03 | 2.161E-03 | 2.073E-03 | 1.846E-03 | 1.598E-03 | 8.742E-04 | 3.686E-04 | 1.554E-04 | 6.540E-05 | 3.436E-05 | 2.758E-05 | 1.163E-05 | 4.904E-06 |
| sb120m | 6.324E-18 | 4.971E-18 | 2.892E-18 | 3.521E-19 | 9.678E-22 | 6.278E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 4.395E-04 | 4.395E-04 | 4.394E-04 | 4.391E-04 | 4.382E-04 | 4.370E-04 | 4.322E-04 | 4.254E-04 | 4.188E-04 | 4.122E-04 | 4.074E-04 | 4.058E-04 | 3.994E-04 | 3.932E-04 |
| sn121m | 1.858E-04 | 1.857E-04 | 1.857E-04 | 1.856E-04 | 1.852E-04 | 1.847E-04 | 1.827E-04 | 1.798E-04 | 1.770E-04 | 1.742E-04 | 1.722E-04 | 1.715E-04 | 1.688E-04 | 1.662E-04 |
| te121 | 1.139E-07 | 1.129E-07 | 1.108E-07 | 1.029E-07 | 8.362E-08 | 6.463E-08 | 2.203E-08 | 4.718E-09 | 1.011E-09 | 2.156E-10 | 6.839E-11 | 4.618E-11 | 9.892E-12 | 2.119E-12 |
| te121m | 5.701E-08 | 5.654E-08 | 5.547E-08 | 5.152E-08 | 4.189E-08 | 3.238E-08 | 1.104E-08 | 2.364E-09 | 5.064E-10 | 1.080E-10 | 3.426E-11 | 2.314E-11 | 4.956E-12 | 1.062E-12 |
| sn123 | 3.805E-02 | 3.764E-02 | 3.674E-02 | 3.345E-02 | 2.572E-02 | 1.854E-02 | 4.720E-03 | 6.661E-04 | 9.399E-05 | 1.319E-05 | 3.066E-06 | 1.862E-06 | 2.627E-07 | 3.707E-08 |
| te123m | 1.036E-04 | 1.024E-04 | 9.972E-05 | 9.007E-05 | 6.774E-05 | 4.751E-05 | 1.078E-05 | 1.291E-06 | 1.546E-07 | 1.840E-08 | 3.784E-09 | 2.204E-09 | 2.638E-10 | 3.159E-11 |
| sb124 | 1.902E-02 | 1.859E-02 | 1.765E-02 | 1.443E-02 | 8.208E-03 | 4.066E-03 | 2.158E-04 | 3.227E-06 | 4.827E-08 | 7.136E-10 | 3.114E-11 | 1.067E-11 | 1.596E-13 | 2.387E-15 |
| sn125 | 5.085E-08 | 4.403E-08 | 3.186E-08 | 9.053E-09 | 2.671E-10 | 3.325E-12 | 3.621E-20 | 1.448E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 7.838E-01 | 7.827E-01 | 7.803E-01 | 7.709E-01 | 7.454E-01 | 7.148E-01 | 5.997E-01 | 4.666E-01 | 3.630E-01 | 2.822E-01 | 2.340E-01 | 2.195E-01 | 1.708E-01 | 1.328E-01 |
| te125m | 5.200E-02 | 5.193E-02 | 5.179E-02 | 5.122E-02 | 4.963E-02 | 4.765E-02 | 4.004E-02 | 3.115E-02 | 2.423E-02 | 1.884E-02 | 1.562E-02 | 1.466E-02 | 1.140E-02 | 8.869E-03 |
| i125 | 1.476E-10 | 1.442E-10 | 1.368E-10 | 1.115E-10 | 6.295E-11 | 3.089E-11 | 1.576E-12 | 2.227E-14 | 3.148E-16 | 4.397E-18 | 1.839E-19 | 6.214E-20 | 8.782E-22 | 1.241E-23 |
| sn126 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 | 8.417E-06 |
| sb126 | 2.284E-05 | 2.282E-05 | 2.275E-05 | 2.257E-05 | 2.245E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 | 2.244E-05 |
| sb126m | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 | 1.129E-04 |
| i126 | 3.120E-10 | 2.803E-10 | 2.202E-10 | 8.619E-11 | 6.232E-12 | 2.368E-13 | 2.739E-19 | 8.705E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 2.234E-18 | 1.559E-18 | 6.933E-19 | 2.969E-20 | 4.378E-24 | 7.441E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 6.594E-02 | 6.511E-02 | 6.329E-02 | 5.661E-02 | 4.145E-02 | 2.812E-02 | 5.557E-03 | 5.455E-04 | 5.355E-05 | 5.223E-06 | 9.262E-07 | 5.127E-07 | 5.033E-08 | 4.941E-09 |
| te127m | 2.705E-02 | 2.670E-02 | 2.595E-02 | 2.322E-02 | 1.700E-02 | 1.153E-02 | 2.279E-03 | 2.237E-04 | 2.196E-05 | 2.142E-06 | 3.799E-07 | 2.103E-07 | 2.064E-08 | 2.026E-09 |
| xe127 | 6.968E-08 | 6.708E-08 | 6.157E-08 | 4.412E-08 | 1.735E-08 | 5.431E-09 | 2.792E-11 | 4.050E-14 | 3.888E-20 | 3.647E-26 | 2.054E-27 | 3.489E-23 | 3.348E-26 | 3.208E-29 |
| te128 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 | 2.214E-18 |
| te129 | 1.489E-02 | 1.429E-02 | 1.302E-02 | 9.075E-03 | 3.303E-03 | 9.383E-04 | 4.872E-06 | 2.616E-09 | 1.404E-12 | 7.385E-16 | 2.700E-18 | 3.964E-19 | 2.128E-22 | 1.143E-25 |
| te129m | 1.198E-02 | 1.149E-02 | 1.048E-02 | 7.301E-03 | 2.657E-03 | 7.549E-04 | 3.920E-06 | 2.104E-09 | 1.130E-12 | 5.941E-16 | 2.172E-18 | 3.190E-19 | 1.712E-22 | 9.193E-26 |
| i129 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 | 3.736E-07 |
| xe129m | 4.430E-12 | 3.790E-12 | 2.667E-12 | 6.805E-13 | 1.485E-14 | 1.270E-16 | 2.879E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 6.633E-08 | 5.581E-08 | 3.784E-08 | 8.346E-09 | 1.212E-10 | 6.241E-13 | 1.698E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 5.236E-07 | 4.658E-07 | 3.579E-07 | 1.285E-07 | 7.299E-09 | 2.053E-10 | 6.746E-17 | 3.539E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 3.090E-15 | 2.679E-15 | 1.943E-15 | 5.567E-16 | 1.687E-17 | 2.194E-19 | 4.457E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 8.433E-17 | 7.475E-17 | 5.699E-17 | 1.985E-17 | 1.035E-18 | 2.620E-20 | 5.536E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 2.292E-14 | 1.851E-14 | 1.144E-14 | 1.759E-15 | 9.312E-18 | 1.365E-20 | 1.946E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe133 | 7.812E-13 | 5.997E-13 | 3.308E-13 | 3.272E-14 | 5.028E-17 | 1.581E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material fission products page 37

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nuclide thermal power, watts

basis =~15.1 kgHHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba133 | 2.221E-06 | 2.220E-06 | 2.218E-06 | 2.211E-06 | 2.192E-06 | 2.168E-06 | 2.070E-06 | 1.938E-06 | 1.815E-06 | 1.699E-06 | 1.617E-06 | 1.590E-06 | 1.489E-06 | 1.394E-06 |
| cs134 | 3.277E+01 | 3.271E+01 | 3.257E+01 | 3.205E+01 | 3.064E+01 | 2.897E+01 | 2.292E+01 | 1.639E+01 | 1.172E+01 | 8.372E+00 | 6.520E+00 | 5.986E+00 | 4.281E+00 | 3.061E+00 |
| cs135 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 | 6.796E-06 |
| cs136 | 5.732E-05 | 5.159E-05 | 4.071E-05 | 1.619E-05 | 1.226E-06 | 4.933E-08 | 7.245E-14 | 3.241E-22 | 1.450E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 6.283E-06 | 5.654E-06 | 4.461E-06 | 1.775E-06 | 1.344E-07 | 5.406E-09 | 7.940E-15 | 3.553E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.412E+00 | 2.411E+00 | 2.411E+00 | 2.392E+00 | 2.392E+00 | 2.354E+00 | 2.300E+00 | 2.244E+00 | 2.196E+00 | 2.146E+00 | 2.098E+00 | 2.098E+00 | 2.050E+00 | 2.050E+00 |
| ba137m | 8.419E+00 | 8.418E+00 | 8.416E+00 | 8.406E+00 | 8.381E+00 | 8.348E+00 | 8.215E+00 | 8.028E+00 | 7.845E+00 | 7.666E+00 | 7.536E+00 | 7.492E+00 | 7.321E+00 | 7.154E+00 |
| la137 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.911E-11 | 6.910E-11 |
| la138 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 | 8.698E-14 |
| ce139 | 2.217E-04 | 2.195E-04 | 2.146E-04 | 1.965E-04 | 1.535E-04 | 1.129E-04 | 3.126E-05 | 4.974E-06 | 7.915E-07 | 1.253E-07 | 3.185E-08 | 1.994E-08 | 3.172E-09 | 5.048E-10 |
| ba140 | 1.854E-04 | 1.663E-04 | 1.302E-04 | 5.031E-05 | 3.508E-06 | 1.274E-07 | 1.219E-13 | 2.952E-22 | 7.151E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.214E-03 | 1.089E-03 | 8.523E-04 | 3.299E-04 | 2.296E-05 | 8.337E-07 | 7.976E-13 | 1.932E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 2.381E-01 | 2.282E-01 | 2.073E-01 | 1.428E-01 | 5.021E-02 | 1.368E-02 | 5.951E-05 | 2.481E-08 | 1.034E-11 | 4.220E-15 | 1.278E-17 | 3.759E-18 | 7.332E-22 | 3.038E-25 |
| pr143 | 2.257E-04 | 2.038E-04 | 1.620E-04 | 6.625E-05 | 5.422E-06 | 2.404E-07 | 5.298E-13 | 4.237E-21 | 3.389E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.932E-13 | 1.922E-13 | 1.900E-13 | 1.815E-13 | 1.597E-13 | 1.361E-13 | 6.986E-14 | 2.689E-14 | 1.035E-14 | 3.974E-15 | 1.951E-15 | 1.530E-15 | 5.888E-16 | 2.266E-16 |
| ce144 | 7.015E+00 | 6.981E+00 | 6.905E+00 | 6.617E+00 | 5.873E+00 | 5.063E+00 | 2.723E+00 | 1.120E+00 | 4.610E-01 | 1.892E-01 | 9.763E-02 | 7.786E-02 | 3.204E-02 | 1.318E-02 |
| pr144 | 7.849E+01 | 7.811E+01 | 7.726E+01 | 7.404E+01 | 6.572E+01 | 5.665E+01 | 3.047E+01 | 1.254E+01 | 5.158E+00 | 2.117E+00 | 1.092E+00 | 8.712E-01 | 3.585E-01 | 1.475E-01 |
| pr144m | 3.541E-02 | 3.524E-02 | 3.485E-02 | 3.340E-02 | 2.965E-02 | 2.556E-02 | 1.374E-02 | 5.655E-03 | 2.327E-03 | 9.552E-04 | 4.928E-04 | 3.930E-04 | 1.617E-04 | 6.654E-05 |
| nd144 | 2.121E-13 | 2.123E-13 | 2.127E-13 | 2.144E-13 | 2.188E-13 | 2.235E-13 | 2.372E-13 | 2.466E-13 | 2.505E-13 | 2.521E-13 | 2.526E-13 | 2.528E-13 | 2.530E-13 | 2.531E-13 |
| pm144 | 2.054E-10 | 2.046E-10 | 2.029E-10 | 1.962E-10 | 1.787E-10 | 1.590E-10 | 9.737E-11 | 4.868E-11 | 2.425E-11 | 1.205E-11 | 7.171E-12 | 6.004E-12 | 2.991E-12 | 1.490E-12 |
| pm145 | 2.226E-08 | 2.225E-08 | 2.224E-08 | 2.221E-08 | 2.211E-08 | 2.199E-08 | 2.146E-08 | 2.068E-08 | 1.991E-08 | 1.916E-08 | 1.861E-08 | 1.843E-08 | 1.772E-08 | 1.704E-08 |
| sm145 | 8.127E-09 | 8.094E-09 | 8.020E-09 | 7.739E-09 | 7.003E-09 | 6.184E-09 | 3.677E-09 | 1.747E-09 | 8.302E-10 | 3.937E-10 | 2.261E-10 | 1.871E-10 | 8.888E-11 | 4.223E-11 |
| pm146 | 1.635E-05 | 1.634E-05 | 1.631E-05 | 1.622E-05 | 1.594E-05 | 1.561E-05 | 1.431E-05 | 1.262E-05 | 1.114E-05 | 9.821E-06 | 8.946E-06 | 8.665E-06 | 7.645E-06 | 6.745E-06 |
| sm146 | 1.973E-11 | 1.973E-11 | 1.973E-11 | 1.973E-11 | 1.975E-11 | 1.977E-11 | 1.984E-11 | 1.993E-11 | 2.001E-11 | 2.008E-11 | 2.013E-11 | 2.015E-11 | 2.020E-11 | 2.025E-11 |
| nd147 | 7.140E-06 | 6.293E-06 | 4.737E-06 | 1.569E-06 | 7.117E-08 | 1.513E-09 | 1.544E-16 | 1.520E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 1.006E+00 | 1.004E+00 | 1.001E+00 | 9.884E-01 | 9.540E-01 | 9.128E-01 | 7.591E-01 | 5.829E-01 | 4.476E-01 | 3.435E-01 | 2.822E-01 | 2.638E-01 | 2.026E-01 | 1.556E-01 |
| sm147 | 5.901E-10 | 5.915E-10 | 5.945E-10 | 6.062E-10 | 6.380E-10 | 6.761E-10 | 8.183E-10 | 9.812E-10 | 1.106E-09 | 1.203E-09 | 1.259E-09 | 1.276E-09 | 1.333E-09 | 1.376E-09 |
| eu147 | 1.033E-17 | 9.754E-18 | 8.570E-18 | 5.181E-18 | 1.266E-18 | 2.908E-19 | 1.945E-27 | 1.088E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 6.449E-03 | 6.236E-03 | 5.782E-03 | 4.310E-03 | 1.893E-03 | 6.807E-04 | 9.406E-06 | 2.053E-08 | 4.479E-11 | 9.612E-14 | 9.994E-16 | 2.098E-16 | 4.577E-19 | 9.989E-22 |
| pm148m | 2.213E-01 | 2.140E-01 | 1.984E-01 | 1.479E-01 | 6.498E-02 | 2.334E-02 | 3.228E-04 | 7.044E-07 | 1.537E-09 | 3.298E-12 | 3.430E-14 | 7.198E-15 | 1.571E-17 | 3.428E-20 |
| sm148 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 | 1.276E-14 |
| eu149 | 6.739E-12 | 6.639E-12 | 6.420E-12 | 5.636E-12 | 3.913E-12 | 2.485E-12 | 3.722E-13 | 2.458E-14 | 1.623E-15 | 1.064E-16 | 1.404E-17 | 7.026E-18 | 4.640E-19 | 3.064E-20 |
| nd150 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 | 1.385E-17 |
| sm151 | 1.301E-03 | 1.301E-03 | 1.301E-03 | 1.301E-03 | 1.299E-03 | 1.298E-03 | 1.291E-03 | 1.281E-03 | 1.271E-03 | 1.261E-03 | 1.254E-03 | 1.251E-03 | 1.242E-03 | 1.232E-03 |
| gd151 | 7.031E-09 | 6.953E-09 | 6.718E-09 | 6.148E-09 | 5.745E-09 | 5.329E-09 | 3.992E-09 | 2.931E-09 | 2.816E-13 | 2.218E-13 

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     yb169   5.445E-12 5.214E-12 4.730E-12 3.238E-12 1.121E-12 2.993E-13 1.198E-15 4.435E-19 1.641E-22 5.943E-26 1.647E-28 2.199E-29 8.139E-33 0.000E+00
1
    5 more years for cooling used fuel material                                                    fission products         page   38
0                                                   nuclide thermal power, watts
                                                    basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     tm170   1.119E-05 1.107E-05 1.081E-05 9.835E-06 7.552E-06 5.436E-06 1.375E-06 1.923E-07 2.689E-08 3.739E-09 8.631E-10 5.229E-10 7.311E-11 1.022E-11
     tm171   4.543E-07 4.534E-07 4.514E-07 4.436E-07 4.226E-07 3.979E-07 3.093E-07 2.156E-07 1.503E-07 1.047E-07 8.000E-08 7.297E-08 5.087E-08 3.547E-08
    total    2.991E+02 2.974E+02 2.936E+02 2.799E+02 2.478E+02 2.168E+02 1.370E+02 7.944E+01 5.075E+01 3.570E+01 2.914E+01 2.746E+01 2.266E+01 1.969E+01
1
    5 more years for cooling used fuel material                                                    fission products         page   39
0                                                   element thermal power, watts
                                                    basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
       h     4.022E-04 4.021E-04 4.018E-04 4.007E-04 3.977E-04 3.940E-04 3.788E-04 3.581E-04 3.385E-04 3.200E-04 3.068E-04 3.025E-04 2.859E-04 2.703E-04
      ga     2.522E-19 2.509E-19 2.481E-19 2.372E-19 2.093E-19 1.790E-19 9.324E-20 3.665E-20 1.441E-20 5.649E-21 2.817E-21 2.220E-21 8.728E-22 3.431E-22
      ge     2.534E-11 2.491E-11 2.396E-11 2.060E-11 1.350E-11 7.971E-12 8.822E-13 3.778E-14 1.618E-15 6.868E-17 6.564E-18 2.941E-18 1.259E-19 5.395E-21
      as     4.928E-11 4.580E-11 3.887E-11 2.089E-11 4.630E-12 1.420E-12 1.301E-13 5.569E-15 2.385E-16 1.012E-17 9.675E-19 4.335E-19 1.856E-20 7.950E-22
      se     4.762E-07 4.761E-07 4.760E-07 4.754E-07 4.742E-07 4.731E-07 4.711E-07 4.705E-07 4.705E-07 4.705E-07 4.705E-07 4.705E-07 4.705E-07 4.705E-07
      kr     1.756E-01 1.755E-01 1.754E-01 1.748E-01 1.733E-01 1.715E-01 1.639E-01 1.537E-01 1.441E-01 1.351E-01 1.288E-01 1.267E-01 1.188E-01 1.114E-01
      rb     2.001E-05 1.860E-05 1.577E-05 8.332E-06 1.442E-06 1.903E-07 3.428E-09 2.842E-10 1.257E-10 1.173E-10 1.169E-10 1.169E-10 1.168E-10 1.168E-10
      sr     2.123E+00 2.091E+00 2.021E+00 1.786E+00 1.361E+00 1.107E+00 9.073E-01 8.801E-01 8.592E-01 8.387E-01 8.238E-01 8.187E-01 7.993E-01 7.803E-01
       y     7.217E+00 7.150E+00 7.007E+00 6.515E+00 5.570E+00 4.944E+00 4.325E+00 4.195E+00 4.095E+00 3.997E+00 3.926E+00 3.902E+00 3.810E+00 3.719E+00
      zr     9.229E+00 9.031E+00 8.602E+00 7.117E+00 4.188E+00 2.164E+00 1.369E-01 2.636E-03 5.370E-05 4.036E-06 3.123E-06 3.091E-06 3.073E-06 3.072E-06
      nb     1.816E+01 1.779E+01 1.699E+01 1.419E+01 8.508E+00 4.459E+00 2.870E-01 5.709E-03 1.109E-04 3.282E-06 1.409E-06 1.378E-06 1.482E-06 1.617E-06
      mo     6.594E-13 6.594E-13 6.594E-13 6.594E-13 6.594E-13 6.593E-13 6.593E-13 6.591E-13 6.590E-13 6.589E-13 6.588E-13 6.588E-13 6.587E-13 6.586E-13
      tc     9.110E-05 9.110E-05 9.110E-05 9.110E-05 9.109E-05 9.109E-05 9.108E-05 9.108E-05 9.108E-05 9.108E-05 9.108E-05 9.108E-05 9.108E-05 9.108E-05
      ru     2.495E+00 2.432E+00 2.298E+00 1.864E+00 1.144E+00 7.583E-01 3.723E-01 1.876E-01 9.500E-02 4.801E-02 2.892E-02 2.431E-02 1.231E-02 6.234E-03
      rh     1.237E+02 1.232E+02 1.222E+02 1.182E+02 1.079E+02 9.625E+01 5.983E+01 3.029E+01 1.534E+01 7.753E+00 4.669E+00 3.926E+00 1.988E+00 1.007E+00
      pd     3.074E-07 3.073E-07 3.072E-07 3.067E-07 3.064E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07 3.063E-07
      ag     1.950E+00 1.939E+00 1.915E+00 1.824E+00 1.592E+00 1.344E+00 6.623E-01 2.405E-01 8.734E-02 3.163E-02 1.487E-02 1.149E-02 4.172E-03 1.516E-03
      cd     1.528E-03 1.482E-03 1.383E-03 1.059E-03 5.055E-04 2.087E-04 2.401E-05 1.926E-05 1.819E-05 1.723E-05 1.658E-05 1.636E-05 1.555E-05 1.479E-05
      in     9.857E-07 9.583E-07 8.992E-07 7.022E-07 3.515E-07 1.486E-07 4.090E-09 2.448E-11 1.811E-13 5.253E-15 1.153E-15 8.017E-16 3.963E-16 3.519E-16
      sn     4.087E-02 4.046E-02 3.954E-02 3.616E-02 2.820E-02 2.077E-02 6.218E-03 1.648E-03 8.536E-04 6.734E-04 6.254E-04 6.151E-04 5.885E-04 5.727E-04
      sb     8.029E-01 8.014E-01 7.981E-01 7.855E-01 7.537E-01 7.190E-01 6.001E-01 4.667E-01 3.631E-01 2.823E-01 2.342E-01 2.196E-01 1.709E-01 1.330E-01
      te     1.720E-01 1.696E-01 1.646E-01 1.475E-01 1.141E-01 8.905E-02 4.789E-02 3.192E-02 2.431E-02 1.885E-02 1.562E-02 1.466E-02 1.140E-02 8.869E-03
       i     4.404E-07 4.298E-07 4.118E-07 3.821E-07 3.738E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07 3.736E-07
      xe     5.933E-07 5.328E-07 4.195E-07 1.726E-07 2.465E-08 5.637E-09 4.227E-11 4.050E-14 3.880E-17 3.647E-20 2.054E-22 3.495E-23 3.348E-26 3.208E-29
      cs     3.518E+01 3.512E+01 3.499E+01 3.446E+01 3.304E+01 3.136E+01 2.527E+01 1.869E+01 1.397E+01 1.057E+01 8.680E+00 8.133E+00 6.378E+00 5.111E+00
      ba     8.419E+00 8.418E+00 8.416E+00 8.407E+00 8.381E+00 8.348E+00 8.215E+00 8.028E+00 7.845E+00 7.666E+00 7.536E+00 7.492E+00 7.321E+00 7.155E+00
      la     1.214E-03 1.089E-03 8.523E-04 3.299E-04 2.296E-05 8.337E-07 6.999E-11 6.920E-11 6.919E-11 6.919E-11 6.919E-11 6.919E-11 6.919E-11 6.919E-11
      ce     7.253E+00 7.209E+00 7.112E+00 6.760E+00 5.924E+00 5.077E+00 2.723E+00 1.120E+00 4.610E-01 1.892E-01 9.763E-02 7.786E-02 3.204E-02 1.318E-02
      pr     7.853E+01 7.815E+01 7.729E+01 7.407E+01 6.575E+01 5.668E+01 3.048E+01 1.254E+01 5.161E+00 2.118E+00 1.093E+00 8.716E-01 3.587E-01 1.476E-01
      nd     7.140E-06 6.293E-06 4.737E-06 1.569E-06 7.117E-08 1.513E-09 2.374E-13 2.467E-13 2.505E-13 2.521E-13 2.527E-13 2.528E-13 2.530E-13 2.531E-13
      pm     1.233E+00 1.225E+00 1.205E+00 1.141E+00 1.021E+00 9.368E-01 7.594E-01 5.829E-01 4.476E-01 3.435E-01 2.822E-01 2.638E-01 2.026E-01 1.556E-01
      sm     1.301E-03 1.301E-03 1.301E-03 1.301E-03 1.299E-03 1.298E-03 1.291E-03 1.281E-03 1.271E-03 1.261E-03 1.254E-03 1.251E-03 1.242E-03 1.232E-03
      eu     2.389E+00 2.388E+00 2.386E+00 2.376E+00 2.349E+00 2.317E+00 2.187E+00 2.014E+00 1.854E+00 1.707E+00 1.606E+00 1.573E+00 1.449E+00 1.335E+00
      gd     1.719E-04 1.709E-04 1.687E-04 1.604E-04 1.393E-04 1.168E-04 5.600E-05 1.955E-05 6.825E-06 2.376E-06 1.084E-06 8.293E-07 2.895E-07 1.011E-07
      tb     3.302E-02 3.240E-02 3.103E-02 2.624E-02 1.640E-02 9.139E-03 7.929E-04 2.408E-05 8.430E-07 1.402E-07 1.198E-07 1.187E-07 1.177E-07 1.172E-07
      dy     9.579E-09 9.488E-09 9.285E-09 8.537E-09 6.747E-09 5.035E-09 1.480E-09 2.567E-10 4.452E-11 7.683E-12 2.082E-12 1.332E-12 2.310E-13 4.007E-14
      ho     1.921E-07 1.921E-07 1.921E-07 1.920E-07 1.920E-07 1.920E-07 1.919E-07 1.918E-07 1.917E-07 1.916E-07 1.915E-07 1.915E-07 1.914E-07 1.913E-07
      er     5.221E-13 4.504E-13 3.231E-13 8.882E-14 2.388E-15 2.647E-17 1.776E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
      tm     1.165E-05 1.153E-05 1.126E-05 1.028E-05 7.975E-06 5.834E-06 1.685E-06 4.079E-07 1.772E-07 1.084E-07 8.086E-08 7.350E-08 5.095E-08 3.548E-08
      yb     5.445E-12 5.214E-12 4.730E-12 3.238E-12 1.121E-12 2.993E-13 1.198E-15 4.435E-19 1.641E-22 5.943E-26 1.647E-28 2.199E-29 8.139E-33 0.000E+00
  totals     2.991E+02 2.974E+02 2.936E+02 2.799E+02 2.478E+02 2.168E+02 1.370E+02 7.944E+01 5.075E+01 3.570E+01 2.914E+01 2.746E+01 2.266E+01 1.969E+01

    56$ array     20 entries read

     0t
1  * normal termination of execution *
0                                   table of contents for material tables
0                                     case or subcase printed      page

                                          1                   1
```

# B.5 ORIGEN RESULTS FOR COOLING MOX FUEL ROD K5

```
*                                                                                *
 *                              SCALE 6.1.3                                      *
 *                             --------------                                    *
 *                             October  2013                                     *
 *                                                                               *
 *          SCALE:  A Comprehensive Modeling and Simulation Suite                *
 *                  for Nuclear Safety Analysis and Design                       *
 *                                                                               *
 *                     Reactor and Nuclear Systems Division                      *
 *                       Oak Ridge National Laboratory                           *
 *                                                                               *
 *                         http://scale.ornl.gov                                 *
 *                          scalehelp@ornl.gov                                   *
 *                                                                               *
 *********************************************************************************

 *********************************************************************************

                  Job Information
                  ---------------
      Job started on jupiter on Mon 21/10/2013 11:34:03
      Working directory: /tmp/scale.8re.31386
      Input file name  : /home/8re/MOX/k5xmox.inp
      Output file name : /home/8re/MOX/k5xmox.out

 *********************************************************************************
           primary module access and input record ( Scale 6.1 driver )


    module shell will be called at 11:34:03.940 on 10/21/2013.
    sequence specification record:#shell

    Input Data:

      cp $RTNDIR/ft71_mox_k5x ft71f001

    module shell  is finished. completion code     0. total cpu time used .04 seconds.


    module origens will be called at 11:34:03.973 on 10/21/2013.
    sequence specification record:#origens

    Input Data:

      0$$ a11 71 e t
      Decay Case
      3$$ 21 1 1 0 a16 2 a33 0 e t
      35$$ 0 t
      54$$ a1 1 a8 1 a11 0  e
      56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
      57** 0 a3 0.0 e
      95$$ 0 t
      5 more years for cooling used fuel material
      ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
      '
      '
      '                  14      365      365       366       272       93
      '
      '      xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      '      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/13 1/22/14 1/22/15 1/22/16
      ' 60** 2         6.5  24      73      134     389     754     1119    1485    1757     1850    2215    2580
      '
      60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
      61** 1e-20 1e-20 5r1e-20
      65$$
      'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
       0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
      t
      56$$ f0 t

    module origens  is finished. completion code     0. total cpu time used .14 seconds.

    Scale is finished at 11:34:04.115 on 10/21/2013
1



        ***********************************************************************************************************
        ***********************************************************************************************************
        ***********************************************************************************************************
        *****                                                                                                 *****
        *****                                  program verification information                                *****
        *****                                                                                                 *****
        *****                                code system:  SCALE    version:  6.1                            *****
        *****                                                                                                 *****
        ***********************************************************************************************************
        ***********************************************************************************************************
        *****                                                                                                 *****
        *****                                                                                                 *****
        *****             program:  origen                                                                    *****
        *****                                                                                                 *****
        *****       creation date:  21_feb_2013                                                               *****
        *****                                                                                                 *****
        *****             library:  /scale/scale6.1/Linux_x86_64/bin                                          *****
        *****                                                                                                 *****
        *****                                                                                                 *****
        *****     production code:  origen                                                                    *****
        *****                                                                                                 *****
        *****            revision:  6.1.2                                                                     *****
        *****                                                                                                 *****
        *****             jobname:  8re                                                                       *****
        *****                                                                                                 *****
        *****        machine name:  jupiter.ornl.gov                                                          *****
        *****                                                                                                 *****
        *****    date of execution:  21_oct_2013                                                              *****
        *****                                                                                                 *****
        *****    time of execution:  11:34:03.98                                                              *****
        *****                                                                                                 *****
        *****                                                                                                 *****
        ***********************************************************************************************************
        ***********************************************************************************************************
        ***********************************************************************************************************
1
1            * input echo * (with break between col. 1-72 and 73-80)
0       note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0...............................columns 1-72...............................                 ..73-80.

 0$$ a11 71 e t
 Decay Case
 3$$ 21 1 1 0 a16 2 a33 0 e t
 35$$ 0 t
 54$$ a1 1 a8 1 a11 0  e
 56$$ a2 13 a6 1 a10 0 a13 -43 a15 3 a17 2 e
 57** 0 a3 0.0 e
 95$$ 0 t
 5 more years for cooling used fuel material
 ~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
 '
 '
```

```
'                  14      365      365       366       272       93
'
'      xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13                 10/21/1
'      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/                 22/13 10
' 60** 2         6.5  24      73      134     389     754     1119    14                 85    17
'
 60** 2 6.5 24 73 134 389 754 1119 1485 1757 1850 2215 2580
 61** 1e-20 1e-20 5r1e-20
 65$$
 'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
  0 0 0    1   1   0   1   1   0   1   1   0   3z   6z
 t
 56$$ f0 t
0when job "fails", make sure no fido input............................................. is out here!


     0$ array     12 entries read

     0t

     3$ array     33 entries read

     0t
1library information...

          cross-section data taken from position number    1 of library on unit 21.

          ******************************************************************************
          *                          ENDF/B-VII.1 decay data                           *
          *                          compiled August 30, 2012                          *
          *                       i.c. gauld, g. ilas, m. pigni                        *
          *                  reactor and nuclear systems division                      *
          *                     oak ridge national laboratory                          *
          ******************************************************************************
0         ******************************************************************************
0                   .other identification and sizes of library.
0                    data set name:  /scale/scale6.1/data/origen.rev03.end7dec
0                 8/31/2012    date library was produced
0                      2237    total number of nuclides in library
                        910    number of light-element nuclides
                        176    number of actinide nuclides
                       1151    number of fission product nuclides
0                      2636    number of nonzero off-diagonal matrix elements
0         ******************************************************************************

    35$ array      1 entries read

     0t

    54$ array     12 entries read

    56$ array     20 entries read

    57* array      5 entries read

    95$ array      1 entries read

     0t


                  14      365      365       366       272       93

      xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10/21/1
      240+2xxx  xxx  1/22/09 3/12/09 5/12/09 1/22/10 1/22/11 1/22/12 1/22/13 10
  60** 2         6.5  24      73      134     389     754     1119    1485    17


    60* array     13 entries read

    61* array      7 entries read
 gram-atoms   grams   curies   watts-all   watts-gamma

    65$ array     63 entries read

     0t
0  obtaining data from position no.   43 on unit no.   71
1
     5 more years for cooling used fuel material                                                    light elements         page    1
0                                          nuclide concentrations, grams
                                           basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
      h  1   8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05 8.143E-05
      h  2   1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05 1.738E-05
      h  3   6.800E-07 6.798E-07 6.794E-07 6.775E-07 6.724E-07 6.661E-07 6.405E-07 6.055E-07 5.724E-07 5.410E-07 5.188E-07 5.114E-07 4.835E-07 4.570E-07
     he  3   1.918E-07 1.920E-07 1.925E-07 1.943E-07 1.994E-07 2.057E-07 2.314E-07 2.664E-07 2.995E-07 3.309E-07 3.531E-07 3.604E-07 3.884E-07 4.148E-07
     he  4   4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02 4.765E-02
     li  6   2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12 2.835E-12
     li  7   2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13 2.253E-13
     be  9   2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08 2.931E-08
     be 10   1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06 1.315E-06
      b 10   6.295E-13 6.328E-13 6.402E-13 6.691E-13 7.501E-13 8.509E-13 1.272E-12 1.876E-12 2.479E-12 3.084E-12 3.533E-12 3.687E-12 4.290E-12 4.894E-12
      b 11   7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10 7.441E-10
      c 12   9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04 9.708E-04
      c 13   1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01 1.538E-01
      c 14   4.600E-06 4.600E-06 4.600E-06 4.600E-06 4.600E-06 4.600E-06 4.600E-06 4.599E-06 4.598E-06 4.598E-06 4.597E-06 4.597E-06 4.597E-06 4.596E-06
      n 14   6.064E-08 6.064E-08 6.065E-08 6.068E-08 6.075E-08 6.085E-08 6.124E-08 6.180E-08 6.235E-08 6.291E-08 6.333E-08 6.347E-08 6.403E-08 6.459E-08
      n 15   1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04 1.433E-04
      o 16   2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03 2.025E+03
      o 17   3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04 3.948E-04
      o 18   1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09 1.278E-09
      f 19   1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15 1.023E-15
     na 23   6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16 6.288E-16
     mg 24   6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16 6.568E-16
     mg 25   6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16 6.836E-16
     mg 26   7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16 7.114E-16
     al 27   7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16 7.384E-16
     si 28   7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16 7.660E-16
     si 29   7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16 7.940E-16
     si 30   8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16 8.244E-16
      p 31   8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16 8.483E-16
      s 32   8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16 8.744E-16
      s 33   8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16 8.990E-16
      s 34   9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16 9.306E-16
      s 36   9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16 9.846E-16
     cl 35   9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16 9.193E-16
     cl 36   4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17 4.111E-17
     cl 37   1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15 1.019E-15
     ar 36   9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16 9.773E-16
     ar 38   1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15 1.039E-15
     ar 39   1.620E-18 1.620E-18 1.620E-18 1.619E-18 1.619E-18 1.618E-18 1.615E-18 1.611E-18 1.607E-18 1.603E-18 1.600E-18 1.599E-18 1.595E-18 1.590E-18
     ar 40   1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15 1.098E-15
      k 39   1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15 1.063E-15
      k 40   1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15 1.060E-15
      k 41   1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15
     ca 40   1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15 1.092E-15
     ca 41   5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19 5.036E-19
     ca 42   1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15 1.151E-15
     ca 43   1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15 1.163E-15
     ca 44   1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15 1.217E-15
     ca 46   1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15 1.257E-15
     ca 48   1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15 1.312E-15
     sc 45   1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15 1.200E-15
     sc 46   6.572E-19 6.464E-19 6.228E-19 5.388E-19 3.593E-19 2.169E-19 2.631E-20 1.285E-21 6.273E-23 3.038E-24 3.201E-25 1.483E-25 7.242E-27 3.536E-28
1
     5 more years for cooling used fuel material                                                    light elements         page    2
0                                          nuclide concentrations, grams
                                           basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     ti 46   1.289E-15 1.289E-15 1.289E-15 1.289E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15 1.290E-15
     ti 47   1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15 1.284E-15
     ti 48   1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15 1.306E-15
```

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ti 49 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 | 1.350E-15 |
| ti 50 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 | 1.370E-15 |
| v 50 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 | 7.445E-19 |
| v 51 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 | 2.220E-17 |
| cr 50 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 | 1.345E-15 |
| cr 52 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 | 1.421E-15 |
| cr 53 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 | 1.425E-15 |
| cr 54 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 | 1.504E-15 |
| mn 54 | 3.153E-19 | 3.139E-19 | 3.107E-19 | 2.989E-19 | 2.681E-19 | 2.341E-19 | 1.329E-19 | 5.906E-20 | 2.625E-20 | 1.164E-20 | 6.364E-21 | 5.176E-21 | 2.301E-21 | 1.023E-21 |
| mn 55 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.479E-15 | 1.479E-15 | 1.479E-15 | 1.479E-15 | 1.480E-15 | 1.480E-15 | 1.480E-15 | 1.480E-15 |
| fe 54 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 | 1.472E-15 |
| fe 55 | 2.400E-18 | 2.397E-18 | 2.389E-18 | 2.361E-18 | 2.282E-18 | 2.188E-18 | 1.834E-18 | 1.425E-18 | 1.107E-18 | 8.594E-19 | 7.121E-19 | 6.677E-19 | 5.187E-19 | 4.030E-19 |
| fe 56 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 | 1.595E-15 |
| fe 57 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 | 1.559E-15 |
| fe 58 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 |
| co 59 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 | 1.614E-15 |
| co 60 | 1.258E-15 | 1.257E-15 | 1.255E-15 | 1.247E-15 | 1.225E-15 | 1.199E-15 | 1.093E-16 | 9.588E-17 | 8.407E-17 | 7.369E-17 | 6.682E-17 | 6.462E-17 | 5.666E-17 | 4.968E-17 |
| ni 58 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 | 1.577E-15 |
| ni 59 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 | 1.329E-15 |
| ni 60 | 1.921E-15 | 1.922E-15 | 1.922E-15 | 1.923E-15 | 1.925E-15 | 1.927E-15 | 1.938E-15 | 1.951E-15 | 1.963E-15 | 1.974E-15 | 1.980E-15 | 1.983E-15 | 1.991E-15 | 1.998E-15 |
| ni 61 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 | 1.669E-15 |
| ni 62 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 | 1.678E-15 |
| ni 63 | 2.320E-17 | 2.320E-17 | 2.320E-17 | 2.319E-17 | 2.317E-17 | 2.314E-17 | 2.303E-17 | 2.287E-17 | 2.272E-17 | 2.256E-17 | 2.245E-17 | 2.241E-17 | 2.226E-17 | 2.210E-17 |
| ni 64 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 | 1.757E-15 |
| cu 63 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.710E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 | 1.711E-15 |
| cu 65 | 2.940E-18 | 2.940E-18 | 2.940E-18 | 2.940E-18 | 2.941E-18 | 2.941E-18 | 2.941E-18 | 2.942E-18 | 2.942E-18 | 2.942E-18 | 2.942E-18 | 2.942E-18 | 2.942E-18 | 2.942E-18 |
| zn 64 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 | 5.238E-18 |
| te123 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 | 3.277E-17 |
| te124 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 | 3.333E-15 |
| te125 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 | 2.618E-17 |
| te126 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 | 2.674E-19 |
| xe131 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 | 4.416E-16 |
| xe132 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 | 1.496E-16 |
| cs133 | 3.287E-19 | 3.287E-19 | 3.287E-19 | 3.288E-19 | 3.290E-19 | 3.293E-19 | 3.305E-19 | 3.322E-19 | 3.337E-19 | 3.351E-19 | 3.361E-19 | 3.365E-19 | 3.377E-19 | 3.389E-19 |
| ba130 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 |
| ba132 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 | 1.011E-18 |
| la137 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 | 2.207E-16 |
| la138 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 | 1.794E-17 |
| la139 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 | 1.983E-18 |
| ce136 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 | 3.481E-15 |
| yb176 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 | 1.481E-18 |
| lu175 | 4.597E-15 | 4.597E-15 | 4.598E-15 | 4.601E-15 | 4.607E-15 | 4.611E-15 | 4.615E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 | 4.616E-15 |
| lu176 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 | 1.284E-16 |
| hf174 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 | 2.521E-15 |
| hf175 | 1.859E-17 | 1.823E-17 | 1.743E-17 | 1.466E-17 | 9.023E-18 | 4.932E-18 | 3.948E-19 | 1.063E-20 | 2.864E-22 | 7.640E-24 | 5.168E-25 | 2.058E-25 | 5.543E-27 | 1.493E-28 |
| hf176 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 | 4.967E-15 |
| hf177 | 9.674E-16 | 9.674E-16 | 9.674E-16 | 9.674E-16 | 9.674E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 | 9.675E-16 |
| hf178 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 | 5.960E-15 |
| hf179 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 | 1.095E-14 |

1

5 more years for cooling used fuel material light elements page 3

0

nuclide concentrations, grams

basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hf180 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 | 8.109E-15 |
| hf181 | 4.302E-19 | 4.163E-19 | 3.868E-19 | 2.905E-19 | 1.304E-19 | 4.809E-20 | 7.433E-22 | 1.902E-24 | 4.865E-27 | 1.224E-29 | 1.433E-31 | 3.132E-32 | 8.013E-35 | 0.000E+00 |
| hf182 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 | 1.042E-17 |
| ta180m | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 | 2.747E-19 |
| ta181 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 | 2.969E-15 |
| ta182 | 1.370E-17 | 1.353E-17 | 1.317E-17 | 1.185E-17 | 8.812E-18 | 6.096E-18 | 1.306E-18 | 1.440E-19 | 1.588E-20 | 1.740E-21 | 3.368E-22 | 1.922E-22 | 2.152E-23 | 2.700E-24 |
| w182 | 4.722E-15 | 4.723E-15 | 4.723E-15 | 4.724E-15 | 4.727E-15 | 4.730E-15 | 4.735E-15 | 4.736E-15 | 4.736E-15 | 4.736E-15 | 4.736E-15 | 4.736E-15 | 4.736E-15 | 4.736E-15 |
| w183 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 | 9.627E-15 |
| w184 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 | 7.794E-15 |
| w185 | 1.844E-18 | 1.810E-18 | 1.736E-18 | 1.477E-18 | 9.398E-19 | 5.352E-19 | 5.086E-20 | 1.751E-21 | 6.029E-23 | 2.057E-24 | 1.671E-25 | 7.081E-26 | 2.438E-27 | 8.393E-29 |
| w186 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 | 3.477E-15 |
| re185 | 1.276E-15 | 1.276E-15 | 1.276E-15 | 1.277E-15 | 1.277E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 | 1.278E-15 |
| re186m | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 | 3.199E-18 |
| re187 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 | 5.396E-15 |
| os186 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 | 3.091E-15 |
| os187 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 | 4.090E-16 |
| os188 | 1.659E-15 | 1.659E-15 | 1.659E-15 | 1.659E-15 | 1.659E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 | 1.660E-15 |
| os189 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 | 9.445E-17 |
| os190 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 | 2.058E-17 |
| os192 | 1.479E-16 | 1.479E-16 | 1.480E-16 | 1.480E-16 | 1.481E-16 | 1.482E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 | 1.483E-16 |
| ir191 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 | 2.834E-16 |
| ir192 | 7.158E-18 | 7.024E-18 | 6.734E-18 | 5.714E-18 | 3.607E-18 | 2.034E-18 | 1.954E-19 | 6.030E-21 | 1.958E-22 | 6.304E-24 | 4.904E-25 | 2.048E-25 | 6.653E-27 | 2.161E-28 |
| ir193 | 2.961E-15 | 2.961E-15 | 2.961E-15 | 2.962E-15 | 2.962E-15 | 2.963E-15 | 2.965E-15 | 2.969E-15 | 2.973E-15 | 2.976E-15 | 2.979E-15 | 2.980E-15 | 2.983E-15 | 2.986E-15 |
| pt192 | 2.605E-15 | 2.606E-15 | 2.606E-15 | 2.607E-15 | 2.609E-15 | 2.610E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 | 2.612E-15 |
| pt193 | 2.690E-16 | 2.690E-16 | 2.689E-16 | 2.688E-16 | 2.683E-16 | 2.676E-16 | 2.651E-16 | 2.614E-16 | 2.578E-16 | 2.543E-16 | 2.516E-16 | 2.508E-16 | 2.473E-16 | 2.439E-16 |
| pt194 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 | 4.245E-15 |
| pt195 | 2.848E-17 | 2.848E-17 | 2.848E-17 | 2.848E-17 | 2.848E-17 | 2.848E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 | 2.849E-17 |
| pt196 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 | 3.608E-18 |
| au197 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 |
| hg196 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 | 6.331E-16 |
| hg198 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 | 9.728E-15 |
| hg199 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 | 1.973E-15 |
| hg200 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 | 1.081E-14 |
| hg201 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 | 5.335E-15 |
| hg202 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 | 5.687E-15 |
| hg204 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 | 5.563E-15 |
| tl203 | 3.462E-17 | 3.462E-17 | 3.463E-17 | 3.467E-17 | 3.469E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 | 3.470E-17 |
| tl204 | 5.713E-19 | 5.708E-19 | 5.695E-19 | 5.645E-19 | 5.508E-19 | 5.342E-19 | 4.701E-19 | 3.914E-19 | 3.259E-19 | 2.712E-19 | 2.366E-19 | 2.259E-19 | 1.881E-19 | 1.566E-19 |
| tl205 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 | 1.675E-17 |
| total | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 |

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5 more years for cooling used fuel material light elements page 4

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element concentrations, grams

basis =-15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 9.949E-05 | 9.949E-05 | 9.949E-05 | 9.949E-05 | 9.948E-05 | 9.948E-05 | 9.945E-05 | 9.942E-05 | 9.938E-05 | 9.935E-05 | 9.933E-05 | 9.932E-05 | 9.929E-05 | 9.927E-05 |
| he | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 | 4.765E-02 |
| li | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 | 3.061E-12 |
| be | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 | 1.344E-06 |
| b | 7.447E-10 | 7.447E-10 | 7.447E-10 | 7.447E-10 | 7.448E-10 | 7.449E-10 | 7.453E-10 | 7.459E-10 | 7.465E-10 | 7.471E-10 | 7.476E-10 | 7.478E-10 | 7.484E-10 | 7.490E-10 |
| c | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 | 1.548E-01 |
| n | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 | 1.434E-04 |
| o | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 |
| f | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 | 1.023E-15 |
| na | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 | 6.288E-16 |
| mg | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 | 2.052E-15 |
| al | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 | 7.384E-16 |
| si | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 | 2.384E-15 |
| p | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 | 8.483E-16 |
| s | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 | 3.689E-15 |
| cl | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 | 1.980E-15 |
| ar | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 | 3.116E-15 |
| k | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 | 3.274E-15 |
| ca | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 | 7.192E-15 |
| sc | 1.201E-15 | 1.201E-15 | 1.201E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 | 1.200E-15 |
| ti | 6.599E-15 | 6.599E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 | 6.600E-15 |
| v | 2.294E-17 | 2.294E-17 | 2.294E-17 | 2.294E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 | 2.295E-17 |
| cr | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 | 5.696E-15 |
| mn | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.478E-15 | 1.479E-15 | 1.479E-15 | 1.479E-15 | 1.479E-15 | 1.480E-15 | 1.480E-15 | 1.480E-15 | 1.480E-15 | 1.480E-15 |
| fe | 9.245E-15 | 9.245E-15 | 9.245E-15 | 9.245E-15 | 9.245E-15 | 9.245E-15 | 9.244E-15 | 9.244E-15 | 9.243E-15 | 9.243E-15 | 9.243E-15 | 9.243E-15 | 9.243E-15 | 9.243E-15 |
| co | 1.739E-15 | 1.739E-15 | 1.739E-15 | 1.738E-15 | 1.736E-15 | 1.733E-15 | 1.723E-15 | 1.709E-15 | 1.698E-15 | 1.687E-15 | 1.680E-15 | 1.678E-15 | 1.670E-15 | 1.663E-15 |
| ni | 9.954E-15 | 9.955E-15 | 9.955E-15 | 9.956E-15 | 9.958E-15 | 9.960E-15 | 9.971E-15 | 9.984E-15 | 9.996E-15 | 1.001E-14 | 1.001E-14 | 1.001E-14 | 1.002E-14 | 1.003E-14 |
| cu | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.713E-15 | 1.714E-15 | 1.714E-15 |
| zn | 5.245E-18 | 5.245E-18 | 5.245E-18 | 5.245E-18

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| au | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 | 3.998E-15 |
| hg | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 | 3.973E-14 |
| tl | 5.194E-17 | 5.195E-17 | 5.195E-17 | 5.196E-17 | 5.198E-17 | 5.198E-17 | 5.198E-17 | 5.193E-17 | 5.178E-17 | 5.173E-17 | 5.173E-17 | 5.169E-17 | 5.168E-17 | 5.164E-17 | 5.161E-17 |
| totals | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 | 2.025E+03 |

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5 more years for cooling used fuel material light elements page 5

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 6.581E-03 | 6.579E-03 | 6.574E-03 | 6.556E-03 | 6.507E-03 | 6.446E-03 | 6.198E-03 | 5.859E-03 | 5.539E-03 | 5.235E-03 | 5.020E-03 | 4.949E-03 | 4.678E-03 | 4.423E-03 |
| be 10 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 |
| c 14 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.060E-05 | 2.060E-05 | 2.060E-05 |
| na 22 | 8.423E-21 | 8.411E-21 | 8.383E-21 | 8.277E-21 | 7.986E-21 | 7.639E-21 | 6.343E-21 | 4.861E-21 | 3.725E-21 | 2.852E-21 | 2.339E-21 | 2.186E-21 | 1.675E-21 | 1.284E-21 |
| si 32 | 4.508E-21 | 4.508E-21 | 4.508E-21 | 4.507E-21 | 4.504E-21 | 4.501E-21 | 4.486E-21 | 4.466E-21 | 4.446E-21 | 4.426E-21 | 4.411E-21 | 4.406E-21 | 4.386E-21 | 4.366E-21 |
| p 32 | 6.910E-20 | 6.311E-20 | 5.160E-20 | 2.463E-20 | 6.365E-21 | 4.598E-21 | 4.488E-21 | 4.467E-21 | 4.447E-21 | 4.427E-21 | 4.412E-21 | 4.407E-21 | 4.387E-21 | 4.367E-21 |
| p 33 | 5.671E-18 | 5.369E-18 | 4.747E-18 | 2.941E-18 | 7.699E-19 | 1.451E-19 | 1.357E-22 | 6.257E-27 | 2.886E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 2.057E-15 | 2.025E-15 | 1.954E-15 | 1.701E-15 | 1.154E-15 | 7.118E-16 | 9.445E-17 | 5.243E-18 | 2.911E-19 | 1.603E-20 | 1.859E-21 | 8.900E-22 | 4.941E-23 | 2.743E-24 |
| cl 36 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 |
| ar 37 | 2.671E-16 | 2.568E-16 | 2.349E-16 | 1.662E-16 | 6.304E-17 | 1.886E-17 | 1.216E-19 | 8.893E-23 | 6.506E-26 | 4.666E-29 | 2.149E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 5.522E-17 | 5.522E-17 | 5.522E-17 | 5.521E-17 | 5.519E-17 | 5.517E-17 | 5.507E-17 | 5.493E-17 | 5.478E-17 | 5.464E-17 | 5.454E-17 | 5.450E-17 | 5.436E-17 | 5.422E-17 |
| ar 42 | 7.695E-23 | 7.694E-23 | 7.692E-23 | 7.684E-23 | 7.663E-23 | 7.636E-23 | 7.524E-23 | 7.367E-23 | 7.214E-23 | 7.063E-23 | 6.953E-23 | 6.916E-23 | 6.772E-23 | 6.631E-23 |
| k 40 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 | 7.594E-21 |
| k 42 | 7.695E-23 | 7.694E-23 | 7.692E-23 | 7.685E-23 | 7.663E-23 | 7.636E-23 | 7.524E-23 | 7.368E-23 | 7.214E-23 | 7.063E-23 | 6.954E-23 | 6.916E-23 | 6.772E-23 | 6.631E-23 |
| ca 41 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 | 4.307E-20 |
| ca 45 | 2.421E-15 | 2.401E-15 | 2.355E-15 | 2.186E-15 | 1.774E-15 | 1.368E-15 | 4.613E-16 | 9.736E-17 | 2.058E-17 | 4.358E-18 | 1.353E-18 | 9.104E-19 | 1.921E-19 | 4.053E-20 |
| sc 45m | 4.601E-20 | 4.561E-20 | 4.475E-20 | 4.153E-20 | 3.370E-20 | 2.599E-20 | 8.763E-21 | 1.849E-21 | 3.902E-22 | 8.198E-23 | 2.571E-23 | 1.730E-23 | 3.650E-24 | 7.701E-25 |
| sc 46 | 2.227E-14 | 2.191E-14 | 2.111E-14 | 1.826E-14 | 1.218E-14 | 7.351E-15 | 8.917E-16 | 4.354E-17 | 2.126E-18 | 1.029E-19 | 1.085E-20 | 5.027E-21 | 2.454E-22 | 1.198E-23 |
| v 49 | 5.892E-18 | 5.867E-18 | 5.812E-18 | 5.602E-18 | 5.054E-18 | 4.446E-18 | 2.603E-18 | 1.209E-18 | 5.617E-19 | 2.604E-19 | 1.471E-19 | 1.210E-19 | 5.619E-20 | 2.610E-20 |
| cr 51 | 2.524E-16 | 2.400E-16 | 2.145E-16 | 1.384E-16 | 4.062E-17 | 8.827E-18 | 1.495E-20 | 1.615E-24 | 1.744E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 | 8.450E-24 |
| mn 54 | 2.444E-15 | 2.433E-15 | 2.409E-15 | 2.317E-15 | 2.078E-15 | 1.815E-15 | 1.030E-15 | 4.579E-16 | 2.035E-16 | 9.027E-17 | 4.933E-17 | 4.013E-17 | 1.784E-17 | 7.929E-18 |
| fe 55 | 5.688E-15 | 5.680E-15 | 5.663E-15 | 5.595E-15 | 5.408E-15 | 5.185E-15 | 4.349E-15 | 3.377E-15 | 2.623E-15 | 2.037E-15 | 1.687E-15 | 1.582E-15 | 1.229E-15 | 9.551E-16 |
| fe 59 | 9.379E-16 | 9.092E-16 | 8.476E-16 | 6.454E-16 | 3.008E-16 | 1.463E-16 | 2.190E-18 | 7.430E-21 | 2.521E-23 | 8.421E-26 | 1.217E-27 | 2.857E-28 | 9.695E-31 | 0.000E+00 |
| fe 60 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 |
| co 56 | 6.805E-23 | 6.684E-23 | 6.419E-23 | 5.486E-23 | 3.534E-23 | 2.044E-23 | 2.073E-24 | 7.833E-26 | 2.960E-27 | 1.108E-28 | 9.650E-30 | 4.188E-30 | 1.583E-31 | 0.000E+00 |
| co 57 | 1.318E-17 | 1.311E-17 | 1.296E-17 | 1.239E-17 | 1.094E-17 | 9.361E-18 | 4.885E-18 | 1.925E-18 | 7.588E-19 | 2.983E-19 | 1.491E-19 | 1.176E-19 | 4.635E-20 | 1.827E-20 |
| co 58 | 3.546E-16 | 3.477E-16 | 3.328E-16 | 2.804E-16 | 1.736E-16 | 9.561E-17 | 7.892E-18 | 2.221E-19 | 6.251E-21 | 1.742E-22 | 1.218E-23 | 4.903E-24 | 1.380E-25 | 3.884E-27 |
| co 60 | 1.422E-13 | 1.421E-13 | 1.419E-13 | 1.410E-13 | 1.386E-13 | 1.355E-13 | 1.237E-13 | 1.084E-13 | 9.508E-14 | 8.334E-14 | 7.556E-14 | 7.307E-14 | 6.408E-14 | 5.619E-14 |
| co 60m | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 | 3.281E-23 |
| ni 59 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 | 1.060E-16 |
| ni 63 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.301E-15 | 1.300E-15 | 1.298E-15 | 1.292E-15 | 1.283E-15 | 1.274E-15 | 1.266E-15 | 1.259E-15 | 1.257E-15 | 1.248E-15 | 1.240E-15 |
| zn 65 | 1.129E-17 | 1.123E-17 | 1.108E-17 | 1.055E-17 | 9.176E-18 | 7.716E-18 | 3.738E-18 | 1.325E-18 | 4.697E-19 | 1.660E-19 | 7.663E-20 | 5.884E-20 | 2.086E-20 | 7.392E-21 |
| sn119m | 2.930E-22 | 2.916E-22 | 2.885E-22 | 2.768E-22 | 2.465E-22 | 2.134E-22 | 1.167E-22 | 4.922E-23 | 2.076E-23 | 8.732E-24 | 4.588E-24 | 3.682E-24 | 1.553E-24 | 6.548E-25 |
| sn121 | 4.186E-21 | 4.186E-21 | 4.185E-21 | 4.182E-21 | 4.173E-21 | 4.162E-21 | 4.116E-21 | 4.052E-21 | 3.988E-21 | 3.926E-21 | 3.880E-21 | 3.864E-21 | 3.804E-21 | 3.744E-21 |
| sn121m | 5.394E-21 | 5.393E-21 | 5.392E-21 | 5.388E-21 | 5.377E-21 | 5.363E-21 | 5.304E-21 | 5.221E-21 | 5.139E-21 | 5.059E-21 | 4.999E-21 | 4.979E-21 | 4.901E-21 | 4.825E-21 |
| sn123 | 1.175E-24 | 1.162E-24 | 1.134E-24 | 1.033E-24 | 7.940E-25 | 5.724E-25 | 1.457E-25 | 2.056E-26 | 2.902E-27 | 4.073E-28 | 9.466E-29 | 5.747E-29 | 8.110E-30 | 1.144E-30 |
| sb124 | 2.495E-20 | 2.438E-20 | 2.315E-20 | 1.893E-20 | 1.077E-20 | 5.333E-21 | 2.831E-22 | 4.233E-24 | 6.331E-26 | 9.360E-28 | 4.084E-29 | 1.400E-29 | 2.094E-31 | 0.000E+00 |
| sb125 | 1.868E-21 | 1.866E-21 | 1.860E-21 | 1.838E-21 | 1.777E-21 | 1.704E-21 | 1.430E-21 | 1.112E-21 | 8.651E-22 | 6.726E-22 | 5.578E-22 | 5.232E-22 | 4.070E-22 | 3.166E-22 |
| te121 | 4.288E-22 | 4.252E-22 | 4.172E-22 | 3.874E-22 | 3.149E-22 | 2.434E-22 | 8.299E-23 | 1.777E-23 | 3.807E-24 | 8.120E-25 | 2.576E-25 | 1.739E-25 | 3.226E-31 | 0.000E+00 |
| te121m | 4.273E-22 | 4.237E-22 | 4.157E-22 | 3.861E-22 | 3.139E-22 | 2.427E-22 | 8.270E-23 | 1.772E-23 | 3.795E-24 | 8.095E-25 | 2.568E-25 | 1.734E-25 | 3.714E-26 | 7.956E-27 |
| te123m | 5.204E-17 | 5.144E-17 | 5.011E-17 | 4.526E-17 | 3.404E-17 | 2.388E-17 | 5.420E-18 | 6.489E-19 | 7.770E-20 | 9.249E-21 | 1.902E-21 | 1.107E-21 | 1.326E-22 | 1.588E-23 |
| te125m | 3.905E-17 | 3.812E-17 | 3.610E-17 | 2.922E-17 | 1.617E-17 | 7.742E-18 | 3.564E-19 | 4.610E-21 | 2.647E-22 | 1.653E-22 | 1.366E-22 | 1.281E-22 | 9.967E-23 | 7.754E-23 |
| te127 | 5.145E-20 | 5.080E-20 | 4.939E-20 | 4.417E-20 | 3.234E-20 | 2.195E-20 | 4.336E-21 | 4.256E-22 | 4.178E-23 | 4.076E-24 | 7.228E-25 | 4.001E-25 | 0.000E+00 | 0.000E+00 |
| te127m | 5.253E-20 | 5.187E-20 | 5.040E-20 | 4.509E-20 | 3.302E-20 | 2.240E-20 | 4.427E-21 | 4.345E-22 | 4.266E-23 | 4.161E-24 | 7.379E-25 | 4.083E-25 | 4.010E-26 | 3.936E-27 |
| te129 | 2.782E-24 | 2.670E-24 | 2.433E-24 | 1.696E-24 | 6.171E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 4.410E-24 | 4.232E-24 | 3.857E-24 | 2.688E-24 | 9.781E-25 | 2.779E-25 | 1.443E-27 | 7.747E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 1.655E-19 | 1.616E-19 | 1.534E-19 | 1.250E-19 | 7.059E-20 | 3.464E-20 | 1.767E-21 | 2.498E-23 | 3.530E-25 | 4.930E-27 | 2.063E-28 | 6.968E-29 | 9.848E-31 | 0.000E+00 |
| i126 | 4.919E-24 | 4.419E-24 | 3.472E-24 | 1.359E-24 | 9.824E-26 | 3.733E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 7.733E-20 | 7.444E-20 | 6.833E-20 | 4.897E-20 | 1.926E-20 | 6.028E-21 | 4.691E-23 | 4.495E-26 | 4.306E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 1.066E-21 | 9.480E-22 | 7.284E-22 | 2.615E-22 | 1.485E-23 | 4.175E-25 | 1.372E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.802E-18 | 2.487E-18 | 1.902E-18 | 6.688E-19 | 3.555E-20 | 9.111E-22 | 1.089E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 6

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cs134 | 2.082E-17 | 2.078E-17 | 2.069E-17 | 2.036E-17 | 1.947E-17 | 1.841E-17 | 1.456E-17 | 1.041E-17 | 7.445E-18 | 5.319E-18 | 4.142E-18 | 3.803E-18 | 2.719E-18 | 1.944E-18 |
| cs135 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 | 9.852E-25 |
| cs137 | 6.792E-25 | 6.791E-25 | 6.789E-25 | 6.781E-25 | 6.761E-25 | 6.734E-25 | 6.627E-25 | 6.476E-25 | 6.329E-25 | 6.184E-25 | 6.079E-25 | 6.044E-25 | 5.906E-25 | 5.772E-25 |
| ba131 | 4.676E-19 | 4.145E-19 | 3.161E-19 | 1.101E-19 | 5.741E-21 | 1.453E-22 | 3.070E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 7.028E-18 | 7.025E-18 | 7.020E-18 | 6.997E-18 | 6.936E-18 | 6.860E-18 | 6.551E-18 | 6.134E-18 | 5.743E-18 | 5.376E-18 | 5.118E-18 | 5.033E-18 | 4.712E-18 | 4.412E-18 |
| la137 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 |
| ce139 | 5.254E-20 | 5.202E-20 | 5.085E-20 | 4.656E-20 | 3.638E-20 | 2.676E-20 | 7.409E-21 | 1.179E-21 | 1.876E-22 | 2.970E-23 | 7.548E-24 | 4.725E-24 | 7.518E-25 | 1.196E-25 |
| ce141 | 9.285E-23 | 8.898E-23 | 8.084E-23 | 5.566E-23 | 1.958E-23 | 5.332E-24 | 2.320E-26 | 9.673E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 8.240E-25 | 8.151E-25 | 7.956E-25 | 7.240E-25 | 5.559E-25 | 4.002E-25 | 1.012E-25 | 1.416E-26 | 1.979E-27 | 2.753E-28 | 6.354E-29 | 3.849E-29 | 5.382E-30 | 7.526E-31 |
| tm171 | 2.651E-21 | 2.646E-21 | 2.634E-21 | 2.589E-21 | 2.467E-21 | 2.322E-21 | 1.808E-21 | 1.207E-21 | 8.777E-22 | 6.109E-22 | 4.669E-22 | 4.259E-22 | 2.969E-22 | 2.070E-22 |
| lu172 | 2.392E-21 | 2.391E-21 | 2.387E-21 | 2.355E-21 | 2.243E-21 | 2.108E-21 | 1.612E-21 | 1.113E-21 | 7.682E-22 | 5.299E-22 | 4.021E-22 | 3.659E-22 | 2.526E-22 | 1.744E-22 |
| lu172m | 2.392E-21 | 2.387E-21 | 2.376E-21 | 2.334E-21 | 2.221E-21 | 2.088E-21 | 1.612E-21 | 1.113E-21 | 7.682E-22 | 5.299E-22 | 4.021E-22 | 3.659E-22 | 2.526E-22 | 1.744E-22 |
| lu173 | 7.945E-17 | 7.923E-17 | 7.874E-17 | 7.685E-17 | 7.181E-17 | 6.599E-17 | 4.635E-17 | 2.796E-17 | 1.686E-17 | 1.016E-17 | 6.967E-18 | 6.125E-18 | 3.694E-18 | 2.228E-18 |
| lu174 | 1.034E-16 | 1.033E-16 | 1.031E-16 | 1.024E-16 | 1.002E-16 | 9.745E-17 | 8.543E-17 | 6.970E-17 | 5.661E-17 | 4.590E-17 | 3.928E-17 | 3.724E-17 | 3.021E-17 | 2.450E-17 |
| lu174m | 3.133E-17 | 3.102E-17 | 3.035E-17 | 2.786E-17 | 2.194E-17 | 1.629E-17 | 4.691E-18 | 7.897E-19 | 1.330E-19 | 2.227E-20 | 5.904E-21 | 3.750E-21 | 6.313E-22 | 1.063E-22 |
| lu176 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 | 6.938E-24 |
| lu177 | 1.509E-16 | 1.496E-16 | 1.467E-16 | 1.361E-16 | 1.101E-16 | 8.459E-17 | 2.811E-17 | 5.808E-18 | 1.200E-18 | 2.469E-19 | 7.623E-20 | 5.101E-20 | 1.054E-20 | 2.177E-21 |
| lu177m | 6.760E-16 | 6.702E-16 | 6.573E-16 | 6.094E-16 | 4.932E-16 | 3.789E-16 | 1.259E-16 | 2.602E-17 | 5.375E-18 | 1.106E-18 | 3.414E-19 | 2.285E-19 | 4.720E-20 | 9.753E-21 |
| hf172 | 2.392E-21 | 2.387E-21 | 2.376E-21 | 2.334E-21 | 2.221E-21 | 2.088E-21 | 1.612E-21 | 1.113E-21 | 7.682E-22 | 5.299E-22 | 4.021E-22 | 3.658E-22 | 2.526E-22 | 1.744E-22 |
| hf175 | 1.982E-13 | 1.943E-13 | 1.859E-13 | 1.563E-13 | 9.622E-14 | 5.259E-14 | 4.210E-15 | 1.134E-16 | 3.055E-18 | 8.147E-20 | 5.511E-21 | 2.194E-21 | 5.911E-23 | 1.592E-24 |
| hf177m | 5.314E-16 | 5.268E-16 | 5.166E-16 | 4.790E-16 | 3.876E-16 | 2.978E-16 | 9.897E-17 | 2.045E-17 | 4.225E-18 | 8.691E-19 | 2.684E-19 | 1.796E-19 | 3.710E-20 | 7.666E-21 |
| hf181 | 7.324E-15 | 7.088E-15 | 6.585E-15 | 4.947E-15 | 2.220E-15 | 8.187E-16 | 1.265E-17 | 3.238E-20 | 8.283E-23 | 2.085E-25 | 2.440E-27 | 5.333E-28 | 1.364E-30 | 0.000E+00 |
| hf182 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 | 2.302E-21 |
| ta179 | 4.224E-19 | 4.215E-19 | 4.196E-19 | 4.120E-19 | 3.915E-19 | 3.673E-19 | 2.816E-19 | 1.924E-19 | 1.315E-19 | 8.979E-20 | 6.762E-20 | 6.137E-20 | 4.194E-20 | 2.867E-20 |
| ta182 | 8.567E-14 | 8.464E-14 | 8.237E-14 | 7.411E-14 | 5.512E-14 | 3.813E-14 | 8.171E-15 | 9.008E-16 | 9.932E-17 | 1.089E-17 | 2.107E-18 | 1.202E-18 | 1.346E-19 | 1.689E-20 |
| w181 | 7.181E-17 | 7.100E-17 | 6.919E-17 | 6.260E-17 | 4.730E-17 | 3.337E-17 | 7.763E-18 | 9.626E-19 | 1.194E-19 | 1.472E-20 | 3.106E-21 | 1.825E-21 | 2.263E-22 | 2.806E-23 |
| w185 | 1.733E-14 | 1.702E-14 | 1.632E-14 | 1.389E-14 | 8.836E-15 | 5.032E-15 | 4.782E-16 | 1.646E-17 | 5.669E-19 | 1.934E-20 | 1.571E-21 | 6.658E-22 | 2.292E-23 | 7.892E-25 |
| w188 | 3.268E-16 | 3.203E-16 | 3.063E-16 | 2.574E-16 | 1.582E-16 | 8.633E-17 | 6.856E-18 | 1.826E-19 | 4.862E-21 | 1.282E-22 | 8.600E-24 | 3.414E-24 | 9.092E-26 | 2.421E-27 |
| re183 | 1.625E-20 | 1.593E-20 | 1.524E-20 | 1.282E-20 | 7.889E-21 | 4.312E-21 | 3.452E-22 | 9.298E-24 | 2.504E-25 | 6.679E-27 | 4.519E-28 | 1.799E-28 | 4.846E-30 | 1.305E-31 |
| re184 | 2.792E-18 | 2.761E-18 | 2.693E-18 | 2.455E-18 | 1.935E-18 | 1.476E-18 | 5.119E-19 | 1.149E-19 | 2.572E-20 | 5.732E-21 | 1.872E-21 | 1.278E-21 | 2.871E-22 | 6.425E-23 |
| re184m | 2.678E-18 | 2.656E-18 | 2.607E-18 | 2.427E-18 | 1.985E-18 | 1.545E-18 | 5.430E-19 | 1.215E-19 | 2.720E-20 | 6.062E-21 | 1.986E-21 | 1.357E-21 | 3.036E-22 | 6.794E-23 |
| re186 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 |
| re186m | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 | 3.075E-20 |
| re187 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 | 2.383E-22 |
| re188 | 3.301E-16 | 3.236E-16 | 3.095E-16 | 2.601E-16 | 1.599E-16 | 8.721E-17 | 6.926E-18 | 1.845E-19 | 4.912E-21 | 1.295E-22 | 8.688E-24 | 3.449E-24 | 0.000E+00 | 0.000E+00 |
| os185 | 2.443E-17 | 2.407E-17 | 2.328E-17 | 2.045E-17 | 1.423E-17 | 9.057E-18 | 1.370E-18 | 9.183E-20 | 6.153E-21 | 4.092E-22 | 5.460E-23 | 2.742E-23 | 1.837E-24 | 1.231E-25 |
| os191 | 1.618E-20 | 1.479E-20 | 1.208E-20 | 5.493E-21 | 6.053E-22 | 3.887E-23 | 4.027E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| os194 | 1.710E-20 | 1.709E-20 | 1.706E-20 | 1.697E-20 | 1.671E-20 | 1.639E-20 | 1.512E-20 | 1.347E-20 | 1.200E-20 | 1.069E-20 | 9.809E-21 | 9.525E-21 | 8.486E-21 | 7.561E-21 |
| ir190 | 1.262E-23 | 1.122E-23 | 8.611E-24 | 3.075E-24 | 1.721E-25 | 4.751E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir191m | 1.618E-20 | 1.479E-20 | 1.208E-20 | 5.493E-21 | 6.053E-22 | 3.887E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir192 | 6.596E-14 | 6.474E-14 | 6.206E-14 | 5.266E-14 | 3.324E-14 | 1.875E-14 | 1.711E-15 | 5.557E-17 | 1.805E-18 | 5.810E-20 | 4.519E-21 | 1.887E-21 | 6.132E-23 | 1.992E-24 |
| ir193m | 1.094E-20 | 9.589E-21 | 7.131E-21 | 2.253E-21 | 8.954E-23 | 1.615E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ir194 | 1.711E-20 | 1.709E-20 | 1.707E-20 | 1.698E-20 | 1.672E-20 | 1.640E-20 | 1.513E-20 | 1.348E-20 | 1.201E-20 | 1.069E-20 | 9.812E-21 | 9.528E-21 | 8.489E-21 | 7.564E-21 |
| pt193 | 9.970E-15 | 9.969E-15 | 9.968E-15 | 9.961E-15 | 9.942E-15 | 9.919E-15 | 9.824E-15 | 9.689E-15 | 9.555E-15 | 9.424E-15 | 9.327E-15 | 9.294E-15 | 9.166E-15 | 9.040E-15 |
| au194 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.237E-22 | 1.236E-22 | 1.234E-22 | 1.232E-22 | 1.230E-22 | 1.229E-22 | 1.228E-22 | 1.226E-22 | 1.224E-22 |
| au195 | 1.696E-17 | 1.683E-17 | 1.655E-17 | 1.553E-17 | 1.292E-17 | 1.029E-17 | 3.982E-18 | 1.023E-18 | 2.626E-19 | 6.718E-20 | 2.439E-20 | 1.725E-20 | 4.430E-21 | 1.138E-21 |
| hg194 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.238E-22 | 1.237E-22 | 1.236E-22 | 1.234E-22 | 1.232E-22 | 1.230E-22 | 1.229E-22 | 1.228E-22 | 1.226E-22 | 1.224E-22 |
| hg203 | 1.148E-15 | 1.114E-15 | 1.042E-15 | 8.031E-16 | 3.874E-16 | 1.563E-16 | 3.520E-18 | 1.543E-20 | 6.765E-23 | 2.922E-25 | 5.108E-27 | 1.281E-27 | 5.614E-30 | 0.000E+00 |
| tl202 | 2.305E-24 | 2.060E-24 | 1.599E-24 | 5.968E-25 | 3.781E-26 | 1.229E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 1.062E-29 | 0.000E+00 | 0.000E+00 |
| tl204 | 2.648E-16 | 2.645E-16 | 2.639E-16 | 2.616E-16 | 2.553E-16 | 2.476E-16 | 2.178E-16 | 1.814E-16 | 1.510E-16 | 1.257E-16 | 1.097E-16 | 1.047E-16 | 8.716E-17 | 7.258E-17 |
| total | 6.601E-03 | 6.599E-03 | 6.595E-03 | 6.577E-03 | 6.528E-03 | 6.467E-03 | 6.219E-03 | 5.880E-03 | 5.559E-03 | 5.256E-03 | 5.041E-03 | 4.970E-03 | 4.699E-03 | 4.443E-03 |

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5 more years for cooling used fuel material light elements page 7

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element radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 6.581E-03 | 6.579E-03 | 6.574E-03 | 6.556E-03 | 6.507E-03 | 6.446E-03 | 6.198E-03 | 5.859E-03 | 5.539E-03 | 5.235E-03 | 5.020E-03 | 4.949E-03 | 4.678E-03 | 4.423E-03 |
| be | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 | 3.115E-08 |
| c | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.062E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.061E-05 | 2.060E-05 | 2.060E-05 | 2.060E-05 |
| na | 8.423E-21 | 8.411E-21 | 8.383E-21 | 8.277E-21 | 7.986E-21 | 7.639E-21 | 6.343E-21 | 4.861E-21 | 3.725E-21 | 2.852E-21 | 2.339E-21 | 2.186E-21 | 1.675E-21 | 1.284E-21 |
| si | 4.508E-21 | 4.508E-21 | 4.508E-21 | 4.507E-21 | 4.504E-21 | 4.501E-21 | 4.486E-21 | 4.466E-21 | 4.446E-21 | 4.426E-21 | 4.411E-21 | 4.406E-21 | 4.386E-21 | 4.366E-21 |
| p | 5.740E-18 | 5.432E-18 | 4.799E-18 | 2.966E-18 | 7.763E-19 | 1.497E-19 | 4.623E-21 | 4.447E-21 | 4.447E-21 | 4.427E-21 | 4.412E-21 | 4.407E-21 | 4.387E-21 | 4.367E-21 |
| s | 2.057E-15 | 2.025E-15 | 1.954E-15 | 1.701E-15 | 1.154E-15 | 7.118E-16 | 9.445E-17 | 5.243E-18 | 2.911E-19 | 1.603E-20 | 1.859E-21 | 8.900E-22 | 4.941E-23 | 2.743E-24 |
| cl | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 | 1.357E-18 |
| ar | 3.224E-16 | 3.120E-16 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te | 9.120E-17 | 8.966E-17 | 8.631E-17 | 7.458E-17 | 5.028E-17 | 3.166E-17 | 5.785E-18 | 6.544E-19 | 7.805E-20 | 9.424E-21 | 2.040E-21 | 1.237E-21 | 2.323E-22 | 9.343E-23 |
| i | 1.655E-19 | 1.616E-19 | 1.534E-19 | 1.250E-19 | 7.059E-20 | 3.464E-20 | 1.767E-21 | 2.498E-23 | 3.537E-25 | 5.661E-27 | 9.366E-28 | 8.000E-28 | 7.313E-28 | 7.303E-28 |
| xe | 7.840E-20 | 7.539E-20 | 6.906E-20 | 4.923E-20 | 1.927E-20 | 6.028E-21 | 6.691E-23 | 4.495E-26 | 4.506E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 2.362E-17 | 2.327E-17 | 2.260E-17 | 2.103E-17 | 1.950E-17 | 1.841E-17 | 1.456E-17 | 1.041E-17 | 7.445E-18 | 5.319E-18 | 4.142E-18 | 3.803E-18 | 2.719E-18 | 1.944E-18 |
| ba | 7.496E-18 | 7.440E-18 | 7.336E-18 | 7.108E-18 | 6.942E-18 | 6.860E-18 | 6.551E-18 | 6.134E-18 | 5.743E-18 | 5.376E-18 | 5.118E-18 | 5.033E-18 | 4.712E-18 | 4.412E-18 |
| la | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.604E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 | 9.603E-18 |
| ce | 5.264E-20 | 5.211E-20 | 5.093E-20 | 4.662E-20 | 3.640E-20 | 2.676E-20 | 7.409E-21 | 1.179E-21 | 1.876E-22 | 2.970E-23 | 7.548E-24 | 4.725E-24 | 7.518E-25 | 1.196E-25 |
| tm | 2.652E-21 | 2.647E-21 | 2.635E-21 | 2.590E-21 | 2.467E-21 | 2.323E-21 | 1.805E-21 | 1.258E-21 | 8.772E-22 | 6.109E-22 | 4.669E-22 | 4.259E-22 | 2.969E-22 | 2.070E-22 |
| lu | 1.041E-15 | 1.033E-15 | 1.016E-15 | 9.526E-16 | 7.973E-16 | 6.432E-16 | 2.905E-16 | 1.303E-16 | 8.018E-17 | 5.743E-17 | 4.667E-17 | 4.365E-17 | 3.396E-17 | 2.674E-17 |
| hf | 2.061E-13 | 2.020E-13 | 1.930E-13 | 1.617E-13 | 9.882E-14 | 5.371E-14 | 4.322E-15 | 1.339E-16 | 7.283E-18 | 9.534E-19 | 2.766E-19 | 1.844E-19 | 3.971E-20 | 1.014E-20 |
| ta | 8.567E-14 | 8.465E-14 | 8.238E-14 | 7.411E-14 | 5.512E-14 | 3.813E-14 | 8.171E-15 | 9.010E-16 | 9.945E-17 | 1.098E-17 | 2.174E-18 | 1.264E-18 | 1.765E-19 | 4.555E-20 |
| w | 1.773E-14 | 1.741E-14 | 1.670E-14 | 1.421E-14 | 9.042E-15 | 5.152E-15 | 4.928E-16 | 1.761E-17 | 6.911E-19 | 3.418E-20 | 4.685E-21 | 2.494E-21 | 2.493E-22 | 2.885E-23 |
| re | 3.357E-16 | 3.291E-16 | 3.148E-16 | 2.650E-16 | 1.638E-16 | 9.030E-17 | 8.043E-18 | 4.827E-19 | 1.196E-19 | 7.367E-20 | 6.562E-20 | 6.439E-20 | 6.234E-20 | 6.188E-20 |
| os | 2.446E-17 | 2.410E-17 | 2.331E-17 | 2.048E-17 | 1.425E-17 | 9.073E-18 | 1.386E-18 | 1.053E-19 | 1.815E-20 | 1.110E-20 | 9.863E-21 | 9.552E-21 | 8.488E-21 | 7.561E-21 |
| ir | 6.596E-14 | 6.474E-14 | 6.206E-14 | 5.266E-14 | 3.324E-14 | 1.875E-14 | 1.711E-15 | 5.558E-17 | 1.817E-18 | 6.879E-20 | 1.433E-20 | 1.142E-20 | 8.550E-21 | 7.566E-21 |
| pt | 9.970E-15 | 9.969E-15 | 9.968E-15 | 9.961E-15 | 9.942E-15 | 9.919E-15 | 9.824E-15 | 9.689E-15 | 9.555E-15 | 9.424E-15 | 9.327E-15 | 9.294E-15 | 9.166E-15 | 9.040E-15 |
| au | 1.696E-17 | 1.683E-17 | 1.655E-17 | 1.551E-17 | 1.292E-17 | 1.029E-17 | 3.982E-18 | 1.023E-18 | 2.627E-19 | 6.730E-20 | 2.451E-20 | 1.737E-20 | 4.553E-21 | 1.260E-21 |
| hg | 1.148E-15 | 1.114E-15 | 1.042E-15 | 8.031E-16 | 3.874E-16 | 1.363E-16 | 2.521E-18 | 1.556E-20 | 1.908E-22 | 1.233E-22 | 1.229E-22 | 1.228E-22 | 1.226E-22 | 1.224E-22 |
| tl | 2.648E-16 | 2.645E-16 | 2.639E-16 | 2.616E-16 | 2.553E-16 | 2.476E-16 | 2.178E-16 | 1.814E-16 | 1.510E-16 | 1.257E-16 | 1.097E-16 | 1.047E-16 | 8.716E-17 | 7.258E-17 |
| totals | 6.601E-03 | 6.599E-03 | 6.595E-03 | 6.577E-03 | 6.528E-03 | 6.467E-03 | 6.219E-03 | 5.880E-03 | 5.559E-03 | 5.256E-03 | 5.041E-03 | 4.970E-03 | 4.699E-03 | 4.443E-03 |

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5 more years for cooling used fuel material light elements page 8

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 2.220E-07 | 2.219E-07 | 2.217E-07 | 2.211E-07 | 2.195E-07 | 2.174E-07 | 2.090E-07 | 1.976E-07 | 1.868E-07 | 1.766E-07 | 1.693E-07 | 1.669E-07 | 1.578E-07 | 1.492E-07 |
| be 10 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 |
| c 14 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.045E-09 | 6.044E-09 | 6.044E-09 | 6.043E-09 | 6.042E-09 | 6.042E-09 | 6.041E-09 | 6.041E-09 |
| na 22 | 1.192E-22 | 1.190E-22 | 1.187E-22 | 1.171E-22 | 1.130E-22 | 1.081E-22 | 8.977E-23 | 6.880E-23 | 5.272E-23 | 4.037E-23 | 3.311E-23 | 3.094E-23 | 2.371E-23 | 1.817E-23 |
| al 26 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 |
| si 32 | 1.829E-24 | 1.829E-24 | 1.828E-24 | 1.828E-24 | 1.827E-24 | 1.826E-24 | 1.820E-24 | 1.812E-24 | 1.803E-24 | 1.795E-24 | 1.789E-24 | 1.787E-24 | 1.779E-24 | 1.771E-24 |
| p 32 | 2.846E-22 | 2.600E-22 | 2.126E-22 | 1.014E-22 | 2.622E-23 | 1.894E-23 | 1.848E-23 | 1.840E-23 | 1.832E-23 | 1.823E-23 | 1.817E-23 | 1.815E-23 | 1.807E-23 | 1.799E-23 |
| p 33 | 2.569E-21 | 2.432E-21 | 2.151E-21 | 1.333E-21 | 3.488E-22 | 6.575E-23 | 6.146E-26 | 2.835E-30 | 1.307E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| s 35 | 5.947E-19 | 5.853E-19 | 5.648E-19 | 4.917E-19 | 3.335E-19 | 2.057E-19 | 2.730E-20 | 1.515E-21 | 8.413E-23 | 4.633E-24 | 5.373E-25 | 2.572E-25 | 1.428E-26 | 7.927E-28 |
| cl 36 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 |
| ar 37 | 3.428E-21 | 3.295E-21 | 3.014E-21 | 2.132E-21 | 8.089E-22 | 2.420E-22 | 1.560E-24 | 1.141E-27 | 8.349E-31 | 5.988E-34 | 2.757E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ar 39 | 7.162E-20 | 7.162E-20 | 7.161E-20 | 7.160E-20 | 7.158E-20 | 7.155E-20 | 7.142E-20 | 7.124E-20 | 7.105E-20 | 7.087E-20 | 7.073E-20 | 7.069E-20 | 7.051E-20 | 7.033E-20 |
| ar 42 | 1.061E-25 | 1.061E-25 | 1.061E-25 | 1.059E-25 | 1.056E-25 | 1.053E-25 | 1.037E-25 | 1.016E-25 | 9.946E-26 | 9.738E-26 | 9.587E-26 | 9.536E-26 | 9.337E-26 | 9.142E-26 |
| k 40 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 | 2.950E-23 |
| k 42 | 7.796E-25 | 7.796E-25 | 7.794E-25 | 7.786E-25 | 7.764E-25 | 7.736E-25 | 7.623E-25 | 7.465E-25 | 7.309E-25 | 7.156E-25 | 7.045E-25 | 7.007E-25 | 6.861E-25 | 6.718E-25 |
| ca 41 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 | 7.944E-25 |
| ca 45 | 1.103E-18 | 1.094E-18 | 1.073E-18 | 9.959E-19 | 8.082E-19 | 6.231E-19 | 2.101E-19 | 4.434E-20 | 9.356E-21 | 1.966E-21 | 6.166E-22 | 4.148E-22 | 8.752E-23 | 1.847E-23 |
| sc 45m | 3.360E-24 | 3.331E-24 | 3.268E-24 | 3.033E-24 | 2.461E-24 | 1.898E-24 | 6.400E-25 | 1.350E-25 | 2.849E-26 | 5.987E-27 | 1.878E-27 | 1.263E-27 | 2.665E-28 | 5.624E-29 |
| sc 46 | 2.801E-16 | 2.755E-16 | 2.654E-16 | 2.296E-16 | 1.531E-16 | 9.244E-17 | 1.121E-17 | 5.475E-19 | 2.673E-20 | 1.295E-21 | 1.364E-22 | 6.321E-23 | 3.086E-24 | 1.507E-25 |
| v 48 | 2.654E-27 | 2.434E-27 | 2.002E-27 | 9.367E-28 | 1.117E-28 | 7.916E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| v 49 | 1.555E-22 | 1.548E-22 | 1.534E-22 | 1.478E-22 | 1.334E-22 | 1.173E-22 | 6.867E-23 | 3.190E-23 | 1.482E-23 | 6.870E-24 | 3.880E-24 | 3.192E-24 | 1.483E-24 | 6.888E-25 |
| cr 51 | 5.487E-20 | 5.219E-20 | 4.663E-20 | 3.010E-20 | 8.831E-21 | 1.919E-21 | 1.251E-24 | 3.511E-28 | 3.792E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn 53 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 | 2.699E-28 |
| mn 54 | 1.217E-17 | 1.212E-17 | 1.200E-17 | 1.154E-17 | 1.035E-17 | 9.038E-18 | 5.130E-18 | 2.280E-18 | 1.014E-18 | 4.496E-19 | 2.457E-19 | 1.998E-19 | 8.883E-20 | 3.949E-20 |
| fe 55 | 1.970E-19 | 1.967E-19 | 1.961E-19 | 1.937E-19 | 1.873E-19 | 1.795E-19 | 1.505E-19 | 1.169E-19 | 9.085E-20 | 7.053E-20 | 5.844E-20 | 5.480E-20 | 4.257E-20 | 3.307E-20 |
| fe 59 | 7.261E-18 | 7.038E-18 | 6.562E-18 | 4.996E-18 | 2.329E-18 | 9.004E-19 | 1.695E-20 | 5.752E-23 | 1.952E-25 | 6.519E-28 | 9.418E-30 | 2.212E-30 | 7.505E-33 | 0.000E+00 |
| fe 60 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 | 9.758E-27 |
| co 56 | 1.517E-24 | 1.490E-24 | 1.431E-24 | 1.223E-24 | 7.879E-25 | 4.558E-25 | 4.622E-26 | 1.746E-27 | 6.599E-29 | 2.471E-30 | 2.151E-31 | 9.338E-32 | 3.528E-33 | 0.000E+00 |
| co 57 | 1.123E-20 | 1.117E-20 | 1.105E-20 | 1.056E-20 | 9.323E-21 | 7.979E-21 | 4.164E-21 | 1.641E-21 | 6.468E-22 | 2.543E-22 | 1.271E-22 | 1.050E-22 | 3.950E-23 | 1.557E-23 |
| co 58 | 2.121E-18 | 2.079E-18 | 1.990E-18 | 1.677E-18 | 1.038E-18 | 5.717E-19 | 4.719E-20 | 1.328E-21 | 3.738E-23 | 1.042E-24 | 7.282E-26 | 2.932E-26 | 8.252E-28 | 2.322E-29 |
| co 60 | 2.193E-15 | 2.191E-15 | 2.188E-15 | 2.174E-15 | 2.136E-15 | 2.089E-15 | 1.906E-15 | 1.671E-15 | 1.466E-15 | 1.285E-15 | 1.165E-15 | 1.126E-15 | 9.878E-16 | 8.661E-16 |
| co 60m | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 | 1.226E-26 |
| ni 59 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 | 4.346E-21 |
| ni 63 | 1.344E-19 | 1.344E-19 | 1.344E-19 | 1.344E-19 | 1.342E-19 | 1.341E-19 | 1.334E-19 | 1.325E-19 | 1.316E-19 | 1.307E-19 | 1.301E-19 | 1.298E-19 | 1.290E-19 | 1.281E-19 |
| zn 65 | 3.901E-20 | 3.879E-20 | 3.830E-20 | 3.644E-20 | 3.170E-20 | 2.666E-20 | 1.292E-20 | 4.578E-21 | 1.623E-21 | 5.735E-22 | 2.648E-22 | 2.033E-22 | 7.205E-23 | 2.554E-23 |
| sn119m | 1.521E-25 | 1.514E-25 | 1.498E-25 | 1.437E-25 | 1.280E-25 | 1.108E-25 | 6.060E-26 | 2.556E-26 | 1.078E-26 | 4.534E-27 | 2.382E-27 | 1.912E-27 | 8.062E-28 | 3.400E-28 |
| sn121 | 2.874E-24 | 2.874E-24 | 2.873E-24 | 2.871E-24 | 2.865E-24 | 2.857E-24 | 2.826E-24 | 2.782E-24 | 2.738E-24 | 2.695E-24 | 2.664E-24 | 2.653E-24 | 2.611E-24 | 2.571E-24 |
| sn121m | 1.215E-24 | 1.214E-24 | 1.214E-24 | 1.213E-24 | 1.211E-24 | 1.208E-24 | 1.194E-24 | 1.176E-24 | 1.157E-24 | 1.139E-24 | 1.126E-24 | 1.121E-24 | 1.104E-24 | 1.086E-24 |
| sn123 | 3.691E-27 | 3.651E-27 | 3.564E-27 | 3.245E-27 | 2.495E-27 | 1.798E-27 | 4.579E-28 | 6.461E-29 | 9.117E-30 | 1.280E-30 | 2.974E-31 | 1.806E-31 | 2.548E-32 | 3.596E-33 |
| sb124 | 3.306E-22 | 3.230E-22 | 3.067E-22 | 2.507E-22 | 1.426E-22 | 7.066E-23 | 3.750E-24 | 5.609E-26 | 8.388E-28 | 1.240E-29 | 5.411E-31 | 1.855E-31 | 2.774E-33 | 0.000E+00 |
| sb125 | 5.908E-24 | 5.900E-24 | 5.882E-24 | 5.811E-24 | 5.619E-24 | 5.388E-24 | 4.521E-24 | 3.517E-24 | 2.736E-24 | 2.127E-24 | 1.764E-24 | 1.655E-24 | 1.287E-24 | 1.001E-24 |
| te121 | 1.495E-24 | 1.482E-24 | 1.454E-24 | 1.350E-24 | 1.098E-24 | 8.486E-25 | 2.893E-25 | 6.195E-26 | 1.327E-26 | 2.831E-27 | 8.980E-28 | 6.063E-28 | 1.125E-33 | 0.000E+00 |
| te121m | 7.486E-25 | 7.423E-25 | 7.283E-25 | 6.765E-25 | 5.501E-25 | 4.252E-25 | 1.449E-25 | 3.104E-26 | 6.649E-27 | 1.418E-27 | 4.499E-28 | 3.038E-28 | 6.508E-29 | 1.394E-29 |
| te123m | 7.676E-20 | 7.587E-20 | 7.391E-20 | 6.676E-20 | 5.021E-20 | 3.521E-20 | 7.948E-21 | 1.571E-21 | 1.146E-22 | 1.364E-23 | 2.805E-24 | 1.633E-24 | 1.956E-25 | 2.342E-26 |
| te125m | 3.367E-20 | 3.287E-20 | 3.113E-20 | 2.520E-20 | 1.394E-20 | 6.676E-21 | 3.073E-22 | 3.975E-24 | 2.282E-25 | 1.426E-25 | 1.178E-25 | 1.105E-25 | 8.594E-26 | 6.686E-26 |
| te127 | 6.998E-23 | 6.910E-23 | 6.717E-23 | 6.008E-23 | 4.399E-23 | 2.985E-23 | 5.898E-24 | 5.789E-25 | 5.683E-26 | 5.543E-27 | 9.831E-28 | 5.442E-28 | 0.000E+00 | 0.000E+00 |
| te127m | 2.870E-23 | 2.834E-23 | 2.754E-23 | 2.464E-23 | 1.804E-23 | 1.224E-23 | 2.419E-24 | 2.374E-25 | 2.331E-26 | 2.274E-27 | 4.032E-28 | 2.232E-28 | 2.191E-29 | 2.151E-30 |
| te129 | 1.004E-26 | 9.632E-27 | 8.778E-27 | 6.118E-27 | 2.227E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te129m | 8.076E-27 | 7.750E-27 | 7.063E-27 | 4.922E-27 | 1.791E-27 | 5.089E-28 | 2.643E-30 | 1.419E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i125 | 5.931E-23 | 5.794E-23 | 5.497E-23 | 4.482E-23 | 2.530E-23 | 1.242E-23 | 6.334E-25 | 8.952E-27 | 1.265E-28 | 1.767E-30 | 7.393E-32 | 2.498E-32 | 3.530E-34 | 0.000E+00 |
| i126 | 1.738E-26 | 1.561E-26 | 1.226E-26 | 4.799E-27 | 3.470E-28 | 1.319E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe127 | 1.433E-22 | 1.380E-22 | 1.266E-22 | 9.076E-23 | 3.570E-23 | 1.117E-23 | 8.695E-26 | 8.331E-29 | 7.982E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material light elements page 9

0

nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 1.029E-24 | 9.155E-25 | 7.035E-25 | 2.525E-25 | 1.434E-26 | 4.033E-28 | 1.325E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 4.922E-22 | 4.369E-22 | 3.341E-22 | 1.175E-22 | 6.246E-24 | 1.601E-25 | 1.912E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.494E-28 | 1.206E-28 | 7.455E-29 | 1.147E-29 | 6.069E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs134 | 2.121E-19 | 2.117E-19 | 2.108E-19 | 2.074E-19 | 1.983E-19 | 1.875E-19 | 1.483E-19 | 1.061E-19 | 7.584E-20 | 5.418E-20 | 4.220E-20 | 3.874E-20 | 2.770E-20 | 1.981E-20 |
| cs135 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 | 4.421E-28 |
| cs136 | 2.508E-27 | 2.257E-27 | 1.781E-27 | 7.085E-28 | 5.364E-29 | 2.158E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 7.225E-28 | 7.224E-28 | 7.222E-28 | 7.214E-28 | 7.191E-28 | 7.164E-28 | 7.049E-28 | 6.889E-28 | 6.732E-28 | 6.578E-28 | 6.466E-28 | 6.429E-28 | 6.282E-28 | 6.139E-28 |
| ba131 | 1.484E-21 | 1.315E-21 | 1.003E-21 | 3.493E-22 | 1.822E-23 | 4.610E-25 | 9.742E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 1.905E-20 | 1.904E-20 | 1.902E-20 | 1.896E-20 | 1.880E-20 | 1.859E-20 | 1.776E-20 | 1.662E-20 | 1.556E-20 | 1.457E-20 | 1.387E-20 | 1.364E-20 | 1.277E-20 | 1.196E-20 |
| ba137m | 2.522E-27 | 2.521E-27 | 2.521E-27 | 2.518E-27 | 2.510E-27 | 2.500E-27 | 2.460E-27 | 2.404E-27 | 2.350E-27 | 2.296E-27 | 2.257E-27 | 2.244E-27 | 2.193E-27 | 2.143E-27 |
| la137 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 |
| la138 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 | 3.417E-27 |
| ce139 | 6.097E-23 | 6.036E-23 | 5.901E-23 | 5.403E-23 | 4.221E-23 | 3.105E-23 | 8.597E-24 | 1.368E-24 | 2.176E-25 | 3.446E-26 | 8.758E-27 | 5.483E-27 | 8.724E-28 | 1.388E-28 |
| ce141 | 1.359E-25 | 1.302E-25 | 1.183E-25 | 8.144E-26 | 2.865E-26 | 7.802E-27 | 3.395E-29 | 1.415E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm170 | 1.622E-27 | 1.604E-27 | 1.566E-27 | 1.425E-27 | 1.094E-27 | 7.876E-28 | 1.992E-28 | 2.786E-29 | 3.896E-30 | 5.418E-31 | 1.251E-31 | 7.576E-32 | 1.059E-32 | 1.481E-33 |
| tm171 | 4.094E-25 | 4.086E-25 | 4.067E-25 | 3.998E-25 | 3.816E-25 | 3.586E-25 | 2.787E-25 | 1.943E-25 | 1.354E-25 | 9.433E-26 | 6.576E-26 | 5.584E-26 | 3.196E-26 | 1.829E-26 |
| lu172 | 2.918E-23 | 2.918E-23 | 2.913E-23 | 2.874E-23 | 2.737E-23 | 2.572E-23 | 1.967E-23 | 1.358E-23 | 9.375E-24 | 6.466E-24 | 4.906E-24 | 4.465E-24 | 3.082E-24 | 2.128E-24 |
| lu172m | 5.025E-25 | 5.014E-25 | 4.992E-25 | 4.904E-25 | 4.666E-25 | 4.386E-25 | 3.386E-25 | 2.338E-25 | 1.614E-25 | 1.113E-25 | 8.447E-26 | 7.686E-26 | 5.307E-26 | 3.664E-26 |
| lu173 | 1.086E-19 | 1.083E-19 | 1.076E-19 | 1.050E-19 | 9.814E-20 | 9.019E-20 | 6.335E-20 | 3.821E-20 | 2.304E-20 | 1.388E-20 | 9.522E-21 | 8.371E-21 | 5.049E-21 | 3.045E-21 |
| lu174 | 9.687E-20 | 9.680E-20 | 9.662E-20 | 9.593E-20 | 9.391E-20 | 9.129E-20 | 8.003E-20 | 6.530E-20 | 5.303E-20 | 4.300E-20 | 3.679E-20 | 3.488E-20 | 2.830E-20 | 2.295E-20 |
| lu174m | 3.103E-20 | 3.073E-20 | 3.006E-20 | 2.760E-20 | 2.173E-20 | 1.613E-20 | 4.647E-21 | 7.823E-22 | 1.317E-22 | 2.207E-23 | 5.849E-24 | 3.715E-24 | 6.254E-25 | 1.053E-25 |
| lu176 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 | 3.176E-26 |
| lu177 | 1.622E-19 | 1.608E-19 | 1.577E-19 | 1.462E-19 | 1.183E-19 | 9.092E-20 | 3.022E-20 | 6.243E-21 | 1.290E-21 | 2.653E-22 | 8.193E-23 | 5.483E-23 | 1.133E-23 | 2.340E-24 |
| lu177m | 9.924E-19 | 9.838E-19 | 9.649E-19 | 8.946E-19 | 7.239E-19 | 5.562E-19 | 1.848E-19 | 3.819E-20 | 7.890E-21 | 1.623E-21 | 5.012E-22 | 3.354E-22 | 6.929E-23 | 1.430E-23 |
| hf172 | 2.613E-24 | 2.608E-24 | 2.596E-24 | 2.550E-24 | 2.427E-24 | 2.281E-24 | 1.761E-24 | 1.216E-24 | 8.394E-25 | 5.790E-25 | 4.393E-25 | 3.998E-25 | 2.760E-25 | 1.906E-25 |
| hf174 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 | 3.928E-29 |
| hf175 | 4.668E-16 | 4.577E-16 | 4.377E-16 | 3.681E-16 | 2.266E-16 | 1.239E-16 | 9.915E-18 | 2.671E-19 | 7.194E-21 | 1.919E-22 | 1.298E-23 | 5.168E-24 | 1.392E-25 | 3.749E-27 |
| hf177m | 4.784E-18 | 4.743E-18 | 4.652E-18 | 4.313E-18 | 3.490E-18 | 2.682E-18 | 8.911E-19 | 1.841E-19 | 3.804E-20 | 7.826E-21 | 2.416E-21 | 1.617E-21 | 3.341E-22 | 6.902E-23 |
| hf181 | 3.170E-17 | 3.068E-17 | 2.850E-17 | 2.141E-17 | 9.607E-18 | 3.543E-18 | 5.477E-20 | 1.401E-22 | 3.585E-25 | 9.022E-28 | 1.056E-29 | 2.308E-30 | 5.905E-33 | 0.000E+00 |
| hf182 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 | 4.137E-24 |
| ta179 | 8.506E-23 | 8.488E-23 | 8.448E-23 | 8.295E-23 | 7.882E-23 | 7.396E-23 | 5.669E-23 | 3.875E-23 | 2.648E-23 | 1.808E-23 | 1.362E-23 | 1.236E-23 | 8.445E-24 | 5.772E-24 |
| ta182 | 7.697E-16 | 7.604E-16 | 7.401E-16 | 6.658E-16 | 4.952E-16 | 3.426E-16 | 7.341E-17 | 8.093E-18 | 8.923E-19 | 9.780E-20 | 1.893E-20 | 1.080E-20 | 1.209E-21 | 1.517E-22 |
| ta183 | 4.308E-29 | 3.283E-29 | 1.781E-29 | 1.651E-30 | 2.115E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| w181 | 2.207E-20 | 2.182E-20 | 2.127E-20 | 1.924E-20 | 1.454E-20 | 1.026E-20 | 2.386E-21 | 2.958E-22 | 3.668E-23 | 4.523E-24 | 9.546E-25 | 5.609E-25 | 6.955E-26 | 8.624E-27 |
| w185 | 1.304E-17 | 1.280E-17 | 1.228E-17 | 1.045E-17 | 6.647E-18 | 3.785E-18 | 3.597E-19 | 1.238E-20 | 4.264E-22 | 1.455E-23 | 1.182E-24 | 5.008E-25 | 1.724E-26 | 5.936E-28 |
| w188 | 1.965E-19 | 1.926E-19 | 1.842E-19 | 1.548E-19 | 9.515E-20 | 5.191E-20 | 4.122E-21 | 1.098E-22 | 2.924E-24 | 7.709E-26 | 5.171E-27 | 2.053E-27 | 5.467E-29 | 1.456E-30 |
| re183 | 2.497E-23 | 2.448E-23 | 2.341E-23 | 1.969E-23 | 1.212E-23 | 6.624E-24 | 5.303E-25 | 1.428E-26 | 3.848E-28 | 1.026E-29 | 6.942E-31 | 2.764E-31 | 7.445E-33 | 2.005E-34 |
| re184 | 1.574E-20 | 1.556E-20 | 1.518E-20 | 1.383E-20 | 1.090E-20 | 8.318E-21 | 2.885E-21 | 5.777E-22 | 1.450E-22 | 3.231E-23 | 1.055E-23 | 7.205E-24 | 1.618E-24 | 3.621E-25 |
| re184m | 8.211E-21 | 8.144E-21 | 7.995E-21 | 7.441E-21 | 6.087E-21 | 4.739E-21 | 1.665E-21 | 3.727E-22 | 8.340E-23 | 1.859E-23 | 6.092E-24 | 4.160E-24 | 9.310E-25 | 2.083E-25 |
| re186 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 | 6.508E-23 |
| re186m | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 | 2.604E-23 |
| re187 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 | 8.727E-28 |
| re188 | 1.641E-18 | 1.608E-18 | 1.538E-18 | 1.293E-18 | 7.945E-19 | 4.334E-19 | 3.442E-20 | 9.167E-22 | 2.441E-23 | 6.437E-25 | 4.318E-26 | 1.714E-26 | 0.000E+00 | 0.000E+00 |
| os185 | 1.025E-19 | 1.010E-19 | 9.773E-20 | 8.585E-20 | 5.973E-20 | 3.802E-20 | 5.752E-21 | 3.854E-22 | 2.583E-23 | 1.718E-24 | 2.292E-25 | 1.151E-25 | 7.711E-27 | 5.167E-28 |
| os186 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 | 4.973E-29 |
| os191 | 3.596E-24 | 3.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg194 | 7.010E-27 | 7.010E-27 | 7.009E-27 | 7.009E-27 | 7.007E-27 | 7.006E-27 | 6.998E-27 | 6.987E-27 | 6.976E-27 | 6.965E-27 | 6.957E-27 | 6.954E-27 | 6.944E-27 | 6.933E-27 |
| hg203 | 2.372E-18 | 2.302E-18 | 2.153E-18 | 1.660E-18 | 8.006E-19 | 3.231E-19 | 7.275E-21 | 3.189E-23 | 1.398E-25 | 6.037E-28 | 1.056E-29 | 2.646E-30 | 1.160E-32 | 0.000E+00 |
| tl202 | 6.664E-27 | 5.954E-27 | 4.621E-27 | 1.725E-27 | 1.093E-28 | 3.553E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 3.071E-32 | 0.000E+00 | 0.000E+00 |
| tl204 | 3.742E-19 | 3.739E-19 | 3.730E-19 | 3.698E-19 | 3.608E-19 | 3.499E-19 | 3.079E-19 | 2.564E-19 | 2.135E-19 | 1.777E-19 | 1.550E-19 | 1.479E-19 | 1.232E-19 | 1.026E-19 |
| total | 2.280E-07 | 2.280E-07 | 2.278E-07 | 2.272E-07 | 2.256E-07 | 2.235E-07 | 2.151E-07 | 2.037E-07 | 1.929E-07 | 1.827E-07 | 1.754E-07 | 1.730E-07 | 1.639E-07 | 1.552E-07 |

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5 more years for cooling used fuel material light elements page 11

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 2.220E-07 | 2.219E-07 | 2.217E-07 | 2.211E-07 | 2.195E-07 | 2.174E-07 | 2.090E-07 | 1.976E-07 | 1.868E-07 | 1.766E-07 | 1.693E-07 | 1.669E-07 | 1.578E-07 | 1.492E-07 |
| be | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 | 3.740E-11 |
| c | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.046E-09 | 6.045E-09 | 6.044E-09 | 6.044E-09 | 6.043E-09 | 6.042E-09 | 6.042E-09 | 6.041E-09 | 6.041E-09 |
| na | 1.192E-22 | 1.190E-22 | 1.187E-22 | 1.171E-22 | 1.130E-22 | 1.081E-22 | 8.977E-23 | 6.880E-23 | 5.272E-23 | 4.037E-23 | 3.311E-23 | 3.094E-23 | 2.371E-23 | 1.817E-23 |
| al | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 | 9.075E-27 |
| si | 1.829E-24 | 1.829E-24 | 1.828E-24 | 1.828E-24 | 1.827E-24 | 1.826E-24 | 1.820E-24 | 1.812E-24 | 1.803E-24 | 1.795E-24 | 1.789E-24 | 1.787E-24 | 1.779E-24 | 1.771E-24 |
| p | 2.854E-21 | 2.692E-21 | 2.363E-21 | 1.434E-21 | 3.750E-22 | 8.469E-23 | 1.855E-23 | 1.840E-23 | 1.832E-23 | 1.823E-23 | 1.817E-23 | 1.815E-23 | 1.807E-23 | 1.799E-23 |
| s | 5.947E-19 | 5.853E-19 | 5.648E-19 | 4.917E-19 | 3.335E-19 | 2.057E-19 | 2.730E-20 | 1.515E-21 | 8.413E-23 | 4.633E-24 | 5.373E-25 | 2.572E-25 | 1.428E-26 | 7.927E-28 |
| cl | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 | 2.394E-21 |
| ar | 7.505E-20 | 7.491E-20 | 7.463E-20 | 7.374E-20 | 7.239E-20 | 7.179E-20 | 7.142E-20 | 7.124E-20 | 7.105E-20 | 7.087E-20 | 7.073E-20 | 7.069E-20 | 7.051E-20 | 7.033E-20 |
| k | 3.028E-23 | 3.028E-23 | 3.028E-23 | 3.028E-23 | 3.028E-23 | 3.027E-23 | 3.026E-23 | 3.025E-23 | 3.023E-23 | 3.021E-23 | 3.020E-23 | 3.020E-23 | 3.019E-23 | 3.017E-23 |
| ca | 1.103E-18 | 1.094E-18 | 1.073E-18 | 9.959E-19 | 8.082E-19 | 6.231E-19 | 2.101E-19 | 4.434E-20 | 9.357E-21 | 1.967E-21 | 6.174E-22 | 4.156E-22 | 8.831E-23 | 1.926E-23 |
| sc | 2.801E-16 | 2.755E-16 | 2.654E-16 | 2.296E-16 | 1.531E-16 | 9.244E-17 | 1.121E-17 | 5.475E-19 | 2.673E-20 | 1.295E-21 | 1.364E-22 | 6.321E-23 | 3.087E-24 | 1.508E-25 |
| v | 1.555E-22 | 1.548E-22 | 1.534E-22 | 1.478E-22 | 1.334E-22 | 1.173E-22 | 6.867E-23 | 3.190E-23 | 1.482E-23 | 6.870E-24 | 3.880E-24 | 3.192E-24 | 1.483E-24 | 6.888E-25 |
| cr | 5.487E-20 | 5.219E-20 | 4.663E-20 | 3.010E-20 | 8.831E-21 | 1.919E-21 | 2.511E-28 | 3.511E-28 | 3.537E-28 | 3.537E-28 | 3.537E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mn | 1.217E-17 | 1.212E-17 | 1.200E-17 | 1.154E-17 | 1.035E-17 | 9.038E-18 | 5.130E-18 | 2.280E-18 | 1.014E-18 | 4.496E-19 | 2.457E-19 | 1.998E-19 | 8.883E-20 | 3.949E-20 |
| fe | 7.458E-18 | 7.235E-18 | 6.758E-18 | 5.190E-18 | 2.516E-18 | 1.080E-18 | 1.675E-19 | 1.170E-19 | 9.085E-20 | 7.053E-20 | 5.844E-20 | 5.480E-20 | 4.257E-20 | 3.307E-20 |
| co | 2.195E-15 | 2.193E-15 | 2.190E-15 | 2.176E-15 | 2.137E-15 | 2.090E-15 | 1.906E-15 | 1.671E-15 | 1.466E-15 | 1.285E-15 | 1.165E-15 | 1.126E-15 | 9.878E-16 | 8.661E-16 |
| ni | 1.388E-19 | 1.388E-19 | 1.388E-19 | 1.387E-19 | 1.386E-19 | 1.384E-19 | 1.378E-19 | 1.369E-19 | 1.360E-19 | 1.351E-19 | 1.344E-19 | 1.342E-19 | 1.333E-19 | 1.324E-19 |
| zn | 3.901E-20 | 3.879E-20 | 3.830E-20 | 3.644E-20 | 3.170E-20 | 2.666E-20 | 1.292E-20 | 4.578E-21 | 1.623E-21 | 5.735E-22 | 2.648E-22 | 2.033E-22 | 7.205E-23 | 2.554E-23 |
| sn | 4.244E-24 | 4.243E-24 | 4.241E-24 | 4.231E-24 | 4.206E-24 | 4.177E-24 | 4.081E-24 | 3.983E-24 | 3.906E-24 | 3.839E-24 | 3.792E-24 | 3.776E-24 | 3.716E-24 | 3.657E-24 |
| sb | 3.365E-22 | 3.289E-22 | 3.126E-22 | 2.566E-22 | 1.482E-22 | 7.605E-23 | 8.207E-24 | 3.573E-25 | 2.737E-24 | 2.127E-24 | 1.764E-24 | 1.655E-24 | 1.287E-24 | 1.001E-24 |
| te | 1.105E-19 | 1.088E-19 | 1.051E-19 | 9.205E-20 | 6.422E-20 | 4.193E-20 | 8.310E-21 | 9.620E-22 | 1.149E-22 | 1.380E-23 | 2.926E-24 | 1.745E-24 | 2.816E-25 | 9.029E-26 |
| i | 5.932E-23 | 5.795E-23 | 5.499E-23 | 4.482E-23 | 2.530E-23 | 1.242E-23 | 6.334E-25 | 8.952E-27 | 1.268E-28 | 2.089E-30 | 3.957E-31 | 3.468E-31 | 3.222E-31 | 3.218E-31 |
| xe | 1.444E-22 | 1.389E-22 | 1.274E-22 | 9.101E-23 | 3.571E-23 | 1.117E-23 | 8.695E-26 | 8.331E-29 | 7.982E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs | 2.126E-19 | 2.121E-19 | 2.111E-19 | 2.076E-19 | 1.983E-19 | 1.875E-19 | 1.483E-19 | 1.061E-19 | 7.584E-20 | 5.418E-20 | 4.220E-20 | 3.874E-20 | 2.770E-20 | 1.981E-20 |
| ba | 2.053E-20 | 2.035E-20 | 2.003E-20 | 1.931E-20 | 1.882E-20 | 1.859E-20 | 1.776E-20 | 1.662E-20 | 1.556E-20 | 1.457E-20 | 1.387E-20 | 1.364E-20 | 1.277E-20 | 1.196E-20 |
| la | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 | 1.832E-21 |
| ce | 6.111E-23 | 6.049E-23 | 5.912E-23 | 5.411E-23 | 4.224E-23 | 3.106E-23 | 8.597E-24 | 1.368E-25 | 2.176E-25 | 3.446E-26 | 8.758E-27 | 5.483E-27 | 8.724E-28 | 1.388E-28 |
| tm | 4.110E-25 | 4.102E-25 | 4.083E-25 | 4.012E-25 | 3.820E-25 | 3.594E-25 | 2.789E-25 | 1.943E-25 | 1.354E-25 | 9.433E-26 | 7.209E-26 | 6.576E-26 | 4.584E-26 | 3.196E-26 |
| lu | 1.391E-18 | 1.380E-18 | 1.357E-18 | 1.269E-18 | 1.056E-18 | 8.448E-19 | 3.631E-19 | 1.487E-19 | 8.540E-20 | 5.880E-20 | 4.691E-20 | 4.365E-20 | 3.343E-20 | 2.602E-20 |
| hf | 5.033E-16 | 4.931E-16 | 4.709E-16 | 3.938E-16 | 2.397E-16 | 1.301E-16 | 1.086E-17 | 4.513E-19 | 4.524E-20 | 8.022E-21 | 2.434E-21 | 1.627E-21 | 3.386E-22 | 7.335E-23 |
| ta | 7.697E-16 | 7.604E-16 | 7.401E-16 | 6.658E-16 | 4.952E-16 | 3.426E-16 | 7.341E-17 | 8.093E-18 | 8.923E-19 | 9.782E-20 | 1.894E-20 | 1.081E-20 | 1.218E-21 | 1.575E-22 |
| w | 1.326E-17 | 1.301E-17 | 1.248E-17 | 1.062E-17 | 6.757E-18 | 3.848E-18 | 3.662E-19 | 1.279E-20 | 4.660E-22 | 1.915E-23 | 2.141E-24 | 1.064E-24 | 8.684E-26 | 9.219E-27 |
| re | 1.665E-18 | 1.632E-18 | 1.561E-18 | 1.314E-18 | 8.116E-19 | 4.466E-19 | 3.907E-20 | 2.028E-21 | 3.439E-22 | 1.427E-22 | 1.078E-22 | 1.025E-22 | 9.366E-23 | 9.168E-23 |
| os | 1.026E-19 | 1.011E-19 | 9.774E-20 | 8.586E-20 | 5.973E-20 | 3.802E-20 | 5.757E-21 | 3.892E-22 | 2.921E-23 | 4.730E-24 | 2.993E-24 | 2.799E-24 | 2.399E-24 | 2.131E-24 |
| ir | 4.041E-16 | 3.966E-16 | 3.801E-16 | 3.225E-16 | 2.036E-16 | 1.148E-16 | 1.048E-17 | 3.405E-19 | 1.112E-20 | 4.126E-22 | 7.968E-23 | 6.205E-23 | 4.536E-23 | 4.009E-23 |
| pt | 5.237E-19 | 5.237E-19 | 5.236E-19 | 5.232E-19 | 5.223E-19 | 5.211E-19 | 5.160E-19 | 5.089E-19 | 5.019E-19 | 4.950E-19 | 4.899E-19 | 4.882E-19 | 4.815E-19 | 4.749E-19 |
| au | 1.345E-20 | 1.335E-20 | 1.313E-20 | 1.230E-20 | 1.025E-20 | 8.168E-21 | 3.160E-21 | 8.120E-22 | 2.091E-22 | 5.410E-23 | 2.015E-23 | 1.448E-23 | 4.311E-24 | 1.698E-24 |
| hg | 2.372E-18 | 2.302E-18 | 2.153E-18 | 1.660E-18 | 8.006E-19 | 3.231E-19 | 7.275E-21 | 3.190E-23 | 1.468E-25 | 7.569E-27 | 6.968E-27 | 6.957E-27 | 6.944E-27 | 6.933E-27 |
| tl | 3.742E-19 | 3.739E-19 | 3.730E-19 | 3.698E-19 | 3.608E-19 | 3.499E-19 | 3.079E-19 | 2.564E-19 | 2.135E-19 | 1.777E-19 | 1.550E-19 | 1.479E-19 | 1.232E-19 | 1.026E-19 |
| totals | 2.280E-07 | 2.280E-07 | 2.278E-07 | 2.272E-07 | 2.256E-07 | 2.235E-07 | 2.151E-07 | 2.037E-07 | 1.929E-07 | 1.827E-07 | 1.754E-07 | 1.730E-07 | 1.639E-07 | 1.552E-07 |

1

5 more years for cooling used fuel material actinides page 12

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he 4 | 3.079E-02 | 3.084E-02 | 3.096E-02 | 3.139E-02 | 3.246E-02 | 3.359E-02 | 3.670E-02 | 3.930E-02 | 4.137E-02 | 4.337E-02 | 4.487E-02 | 4.539E-02 | 4.745E-02 | 4.954E-02 |
| li 6 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 | 6.538E-17 |
| li 7 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 | 3.828E-16 |
| tl207 | 3.963E-18 | 3.963E-18 | 3.968E-18 | 4.043E-18 | 4.398E-18 | 4.880E-18 | 7.272E-18 | 1.022E-17 | 1.325E-17 | 1.624E-17 | 1.852E-17 | 1.892E-17 | 2.239E-17 | 2.581E-17 |
| tl208 | 3.420E-14 | 3.434E-14 | 3.443E-14 | 3.591E-14 | 4.150E-14 | 4.789E-14 | 7.702E-14 | 1.219E-13 | 1.661E-13 | 2.068E-13 | 2.339E-13 | 2.428E-13 | 2.728E-13 | 2.981E-13 |
| pb204 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 | 5.565E-15 |
| pb205 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 | 1.508E-17 |
| pb206 | 2.335E-14 | 2.345E-14 | 2.367E-14 | 2.452E-14 | 2.699E-14 | 3.020E-14 | 4.420E-14 | 6.472E-14 | 8.537E-14 | 1.063E-13 | 1.223E-13 | 1.278E-13 | 1.502E-13 | 1.741E-13 |
| pb207 | 7.140E-13 | 7.156E-13 | 7.194E-13 | 7.341E-13 | 7.774E-13 | 8.368E-13 | 1.160E-12 | 1.816E-12 | 2.699E-12 | 3.816E-12 | 4.798E-12 | 5.162E-12 | 6.741E-12 | 8.561E-12 |
| pb208 | 8.423E-09 | 8.487E-09 | 8.633E-09 | 9.211E-09 | 1.093E-08 | 1.339E-08 | 2.773E-08 | 6.061E-08 | 1.084E-07 | 1.704E-07 | 2.249E-07 | 2.450E-07 | 3.306E-07 | 4.254E-07 |
| pb209 | 1.458E-16 | 1.459E-16 | 1.458E-16 | 1.457E-16 | 1.457E-16 | 1.459E-16 | 1.471E-16 | 1.487E-16 | 1.505E-16 | 1.524E-16 | 1.540E-16 | 1.543E-16 | 1.568E-16 | 1.593E-16 |
| pb210 | 6.848E-13 | 6.847E-13 | 6.846E-13 | 6.840E-13 | 6.825E-13 | 6.808E-13 | 6.739E-13 | 6.618E-13 | 6.499E-13 | 7.219E-13 | 7.313E-13 | 7.778E-13 | 8.419E-13 | 8.419E-13 |
| pb211 | 3.066E-17 | 3.065E-17 | 3.069E-17 | 3.127E-17 | 3.402E-17 | 3.775E-17 | 5.625E-17 | 7.907E-17 | 1.022E-16 | 1.256E-16 | 1.433E-16 | 1.464E-16 | 1.732E-16 | 1.974E-16 |
| pb212 | 2.028E-11 | 2.027E-11 | 2.041E-11 | 2.129E-11 | 2.461E-11 | 2.840E-11 | 4.567E-11 | 7.229E-11 | 9.848E-11 | 1.226E-10 | 1.387E-10 | 1.440E-10 | 1.618E-10 | 1.768E-10 |
| bi208 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 | 9.667E-18 |
| bi209 | 9.626E-13 | 9.641E-13 | 9.675E-13 | 9.806E-13 | 1.017E-12 | 1.063E-12 | 1.254E-12 | 1.530E-12 | 1.809E-12 | 2.092E-12 | 2.305E-12 | 2.379E-12 | 2.669E-12 | 2.964E-12 |
| bi210m | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 | 1.282E-17 |
| bi210 | 4.235E-16 | 4.235E-16 | 4.233E-16 | 4.230E-16 | 4.220E-16 | 4.212E-16 | 4.177E-16 | 4.168E-16 | 4.214E-16 | 4.329E-16 | 4.465E-16 | 4.523E-16 | 4.811E-16 | 5.207E-16 |
| bi211 | 1.817E-18 | 1.817E-18 | 1.820E-18 | 1.854E-18 | 2.017E-18 | 2.238E-18 | 3.335E-18 | 4.687E-18 | 6.058E-18 | 7.448E-18 | 8.497E-18 | 8.677E-18 | 1.027E-17 | 1.170E-17 |
| bi212 | 1.923E-12 | 1.931E-12 | 1.937E-12 | 2.020E-12 | 2.334E-12 | 2.694E-12 | 4.332E-12 | 6.857E-12 | 9.341E-12 | 1.163E-11 | 1.316E-11 | 1.366E-11 | 1.534E-11 | 1.676E-11 |
| bi213 | 3.472E-17 | 3.472E-17 | 3.471E-17 | 3.468E-17 | 3.469E-17 | 3.474E-17 | 3.501E-17 | 3.540E-17 | 3.582E-17 | 3.628E-17 | 3.665E-17 | 3.673E-17 | 3.733E-17 | 3.791E-17 |
| po210 | 9.856E-15 | 9.875E-15 | 9.915E-15 | 1.006E-14 | 1.041E-14 | 1.069E-14 | 1.121E-14 | 1.133E-14 | 1.141E-14 | 1.163E-14 | 1.191E-14 | 1.203E-14 | 1.269E-14 | 1.361E-14 |
| po216 | 7.821E-17 | 7.823E-17 | 7.867E-17 | 8.213E-17 | 9.490E-17 | 1.095E-16 | 1.761E-16 | 2.788E-16 | 3.798E-16 | 4.729E-16 | 5.350E-16 | 5.553E-16 | 6.240E-16 | 6.817E-16 |
| rn220 | 3.054E-14 | 3.055E-14 | 3.072E-14 | 3.208E-14 | 3.706E-14 | 4.278E-14 | 6.879E-14 | 1.089E-13 | 1.483E-13 | 1.847E-13 | 2.090E-13 | 2.169E-13 | 2.437E-13 | 2.662E-13 |
| rn222 | 1.489E-16 | 1.489E-16 | 1.495E-16 | 1.530E-16 | 1.657E-16 | 1.806E-16 | 2.518E-16 | 3.802E-16 | 5.427E-16 | 7.431E-16 | 9.182E-16 | 9.835E-16 | 1.268E-15 | 1.599E-15 |
| fr221 | 3.872E-18 | 3.872E-18 | 3.871E-18 | 3.867E-18 | 3.868E-18 | 3.874E-18 | 3.905E-18 | 3.948E-18 | 3.995E-18 | 4.046E-18 | 4.088E-18 | 4.097E-18 | 4.163E-18 | 4.228E-18 |
| ra223 | 1.477E-14 | 1.477E-14 | 1.479E-14 | 1.507E-14 | 1.639E-14 | 1.819E-14 | 2.710E-14 | 3.810E-14 | 4.924E-14 | 6.054E-14 | 6.904E-14 | 7.053E-14 | 8.346E-14 | 9.510E-14 |
| ra224 | 1.769E-10 | 1.769E-10 | 1.779E-10 | 1.858E-10 | 2.146E-10 | 2.477E-10 | 3.984E-10 | 6.306E-10 | 8.590E-10 | 1.069E-09 | 1.210E-09 | 1.256E-09 | 1.411E-09 | 1.542E-09 |
| ra225 | 1.724E-14 | 1.724E-14 | 1.723E-14 | 1.723E-14 | 1.725E-14 | 1.728E-14 | 1.741E-14 | 1.760E-14 | 1.781E-14 | 1.804E-14 | 1.822E-14 | 1.827E-14 | 1.856E-14 | 1.885E-14 |
| ra226 | 2.316E-11 | 2.323E-11 | 2.339E-11 | 2.401E-11 | 2.578E-11 | 2.810E-11 | 3.917E-11 | 5.915E-11 | 8.444E-11 | 1.156E-10 | 1.429E-10 | 1.530E-10 | 1.972E-10 | 2.487E-10 |
| ra228 | 3.863E-16 | 3.867E-16 | 3.878E-16 | 3.917E-16 | 4.028E-16 | 4.165E-16 | 4.725E-16 | 5.495E-16 | 6.231E-16 | 6.941E-16 | 7.451E-16 | 7.622E-16 | 8.281E-16 | 8.919E-16 |
| ac225 | 1.158E-14 | 1.158E-14 | 1.158E-14 | 1.157E-14 | 1.157E-14 | 1.159E-14 | 1.168E-14 | 1.181E-14 | 1.195E-14 | 1.211E-14 | 1.223E-14 | 1.226E-14 | 1.245E-14 | 1.265E-14 |
| ac227 | 1.098E-11 | 1.102E-11 | 1.112E-11 | 1.148E-11 | 1.251E-11 | 1.379E-11 | 1.916E-11 | 2.694E-11 | 3.481E-11 | 4.280E-11 | 4.879E-11 | 5.085E-11 | 5.899E-11 | 6.722E-11 |
| th227 | 2.414E-14 | 2.424E-14 | 2.445E-14 | 2.530E-14 | 2.767E-14 | 3.063E-14 | 4.447E-14 | 6.251E-14 | 8.079E-14 | 9.933E-14 | 1.133E-13 | 1.169E-13 | 1.369E-13 | 1.560E-13 |
| th228 | 3.426E-08 | 3.445E-08 | 3.488E-08 | 3.658E-08 | 4.150E-08 | 4.790E-08 | 7.717E-08 | 1.222E-07 | 1.664E-07 | 2.071E-07 | 2.342E-07 | 2.428E-07 | 2.732E-07 | 2.984E-07 |
| th229 | 3.155E-09 | 3.155E-09 | 3.155E-09 | 3.156E-09 | 3.160E-09 | 3.166E-09 | 3.188E-09 | 3.222E-09 | 3.261E-09 | 3.303E-09 | 3.337E-09 | 3.349E-09 | 3.398E-09 | 3.451E-09 |
| th230 | 1.401E-06 | 1.404E-06 | 1.410E-06 | 1.433E-06 | 1.498E-06 | 1.580E-06 | 1.939E-06 | 2.500E-06 | 3.117E-06 | 3.791E-06 | 4.327E-06 | 4.518E-06 | 5.299E-06 | 6.135E-06 |
| th231 | 6.920E-11 | 6.920E-11 | 6.920E-11 | 6.920E-11 | 6.921E-11 | 6.921E-11 | 6.923E-11 | 6.927E-11 | 6.930E-11 | 6.933E-11 | 6.935E-11 | 6.936E-11 | 6.939E-11 | 6.942E-11 |
| th232 | 2.676E-06 | 2.676E-06 | 2.678E-06 | 2.683E-06 | 2.699E-06 | 2.719E-06 | 2.801E-06 | 2.919E-06 | 3.038E-06 | 3.157E-06 | 3.246E-06 | 3.277E-06 | 3.397E-06 | 3.517E-06 |
| th234 | 2.016E-07 | 2.016E-07 | 2.016E-07 | 2.016E-07 | 2.016E-07 | 2.016E-07 | 2.017E-07 | 2.016E-07 | 2.016E-07 | 2.016E-07 | 2.017E-07 | 2.016E-07 | 2.016E-07 | 2.016E-07 |
| pa230 | 4.073E-17 | 3.761E-17 | 3.144E-17 | 1.566E-17 | 2.223E-18 | 1.957E-19 | 7.584E-24 | 7.710E-24 | 3.674E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 3.835E-07 | 3.836E-07 | 3.838E-07 | 3.846E-07 | 3.869E-07 | 3.897E-07 | 4.013E-07 | 4.178E-07 | 4.344E-07 | 4.510E-07 | 4.633E-07 | 4.676E-07 | 4.842E-07 | 5.008E-07 |
| pa232 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 | 2.111E-16 |
| pa233 | 8.146E-08 | 8.146E-08 | 8.146E-08 | 8.148E-08 | 8.152E-08 | 8.158E-08 | 8.188E-08 | 8.255E-08 | 8.333E-08 | 8.428E-08 | 8.497E-08 | 8.526E-08 | 8.665E-08 | 8.804E-08 |
| pa234m | 6.732E-12 | 6.733E-12 | 6.733E-12 | 6.733E-12 | 6.732E-12 | 6.732E-12 | 6.737E-12 | 6.733E-12 | 6.733E-12 | 6.733E-12 | 6.735E-12 | 6.733E-12 | 6.733E-12 | 6.733E-12 |
| pa234 | 3.736E-12 | 3.734E-12 | 3.736E-12 | 3.736E-12 | 3.736E-12 | 3.736E-12 | 3.739E-12 | 3.736E-12 | 3.736E-12 | 3.736E-12 | 3.738E-12 | 3.736E-12 | 3.736E-12 | 3.736E-12 |
| u230 | 9.056E-17 | 8.496E-17 | 7.357E-17 | 4.196E-17 | 8.596E-18 | 1.171E-18 | 2.543E-22 | 1.327E-27 | 6.922E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 4.788E-06 | 4.802E-06 | 4.835E-06 | 4.962E-06 | 5.308E-06 | 5.723E-06 | 7.276E-06 | 9.059E-06 | 1.042E-05 | 1.147E-05 | 1.207E-05 | 1.225E-05 | 1.283E-05 | 1.325E-05 |
| u233 | 6.935E-06 | 6.939E-06 | 6.949E-06 | 6.985E-06 | 7.088E-06 | 7.216E-06 | 7.751E-06 | 8.604E-06 | 9.464E-06 | 1.034E-05 | 1.093E-05 | 1.113E-05 | 1.202E-05 | 1.293E-05 |
| u234 | 1.718E-01 | 1.719E-01 | 1.721E-01 | 1.730E-01 | 1.755E-01 | 1.787E-01 | 1.923E-01 | 2.123E-01 | 2.324E-01 | 2.523E-01 | 2.670E-01 | 2.721E-01 | 2.917E-01 | 3.111E-01 |
| u235 | 1.702E+01 | 1.702E+01 | 1.702E+01 | 1.702E+01 | 1.702E+01 | 1.702E+01 | 1.703E+01 | 1.704E+01 | 1.704E+01 | 1.705E+01 | 1.706E+01 | 1.706E+01 | 1.707E+01 | 1.707E+01 |
| u236 | 4.041E+00 | 4.041E+00 | 4.042E+00 | 4.042E+00 | 4.044E+00 | 4.047E+00 | 4.058E+00 | 4.073E+00 | 4.089E+00 | 4.104E+00 | 4.116E+00 | 4.120E+00 | 4.135E+00 | 4.150E+00 |

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5 more years for cooling used fuel material actinides page 13

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u237 | 2.337E-06 | 2.336E-06 | 2.335E-06 | 2.330E-06 | 2.314E-06 | 2.296E-06 | 2.219E-06 | 2.114E-06 | 2.014E-06 | 1.919E-06 | 1.851E-06 | 1.828E-06 | 1.741E-06 | 1.659E-06 |
| u238 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 | 1.388E+04 |
| u240 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 | 1.929E-14 |
| np235 | 2.744E-08 | 2.734E-08 | 2.713E-08 | 2.631E-08 | 2.415E-08 | 2.170E-08 | 1.389E-08 | 7.335E-09 | 3.873E-09 | 2.042E-09 | 1.269E-09 | 1.078E-09 | 5.692E-10 | 3.006E-10 |
| np236 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 | 4.546E-06 |
| np237 | 2.406E+00 | 2.406E+00 | 2.406E+00 | 2.407E+00 | 2.410E+00 | 2.414E+00 | 2.431E+00 | 2.452E+00 | 2.472E+00 | 2.489E+00 | 2.502E+00 | 2.506E+00 | 2.521E+00 | 2.600E+00 |
| np238 | 1.146E-08 | 1.146E-08 | 1.146E-08 | 1.145E-08 | 1.145E-08 | 1.144E-08 | 1.140E-08 | 1.134E-08 | 1.129E-08 | 1.123E-08 | 1.119E-08 | 1.118E-08 | 1.112E-08 | 1.107E-08 |
| np239 | 3.527E-06 | 3.527E-06 | 3.527E-06 | 3.526E-06 | 3.526E-06 | 3.526E-06 | 3.526E-06 | 3.526E-06 | 3.525E-06 | 3.525E-06 | 3.525E-06 | 3.525E-06 | 3.525E-06 | 3.524E-06 |
| np240m | 1.646E-16 | 1.647E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 | 1.646E-16 |
| np240 | 1.693E-18 | 1.695E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 | 1.693E-18 |
| pu236 | 1.141E-05 | 1.140E-05 | 1.136E-05 | 1.123E-05 | 1.087E-05 | 1.044E-05 | 8.815E-06 | 6.918E-06 | 5.429E-06 | 4.258E-06 | 3.554E-06 | 3.341E-06 | 2.622E-06 | 2.058E-06 |
| pu237 | 2.058E-07 | 1.996E-07 | 1.864E-07 | 1.429E-07 | 6.790E-08 | 2.689E-08 | 5.593E-10 | 2.189E-12 | 8.564E-15 | 3.301E-17 | 5.304E-19 | 1.292E-19 | 5.055E-22 | 1.978E-24 |
| pu238 | 2.339E+00 | 2.342E+00 | 2.347E+00 | 2.365E+00 | 2.414E+00 | 2.474E+00 | 2.519E+00 | 2.582E+00 | 2.537E+00 | 2.553E+00 | 2.538E+00 | 2.533E+00 | 2.514E+00 | 2.494E+00 |
| pu239 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 | 2.763E+02 |
| pu240 | 1.486E+02 | 1.486E+02 | 1.486E+02 | 1.486E+02 | 1.486E+02 | 1.486E+02 | 1.487E+02 | 1.487E+02 | 1.487E+02 | 1.487E+02 | 1.488E+02 | 1.488E+02 | 1.488E+02 | 1.488E+02 |
| pu241 | 7.490E+01 | 7.488E+01 | 7.484E+01 | 7.467E+01 | 7.418E+01 | 7.358E+01 | 7.113E+01 | 6.777E+01 | 6.456E+01 | 6.150E+01 | 5.932E+01 | 5.859E+01 | 5.582E+01 | 5.317E+01 |
| pu242 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 | 1.753E+01 |
| pu243 | 2.801E-15 

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cm244 | 1.347E+00 | 1.347E+00 | 1.346E+00 | 1.343E+00 | 1.337E+00 | 1.328E+00 | 1.293E+00 | 1.244E+00 | 1.198E+00 | 1.153E+00 | 1.120E+00 | 1.109E+00 | 1.068E+00 | 1.028E+00 |
| cm245 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.124E-01 | 1.123E-01 |
| cm246 | 5.998E-03 | 5.998E-03 | 5.998E-03 | 5.998E-03 | 5.998E-03 | 5.998E-03 | 5.997E-03 | 5.996E-03 | 5.995E-03 | 5.995E-03 | 5.994E-03 | 5.994E-03 | 5.993E-03 | 5.992E-03 |
| cm247 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 | 7.855E-05 |
| cm248 | 4.262E-06 | 4.262E-06 | 4.263E-06 | 4.263E-06 | 4.263E-06 | 4.263E-06 | 4.263E-06 | 4.263E-06 | 4.263E-06 | 4.264E-06 | 4.264E-06 | 4.264E-06 | 4.264E-06 | 4.264E-06 |
| cm250 | 4.062E-13 | 4.062E-13 | 4.062E-13 | 4.062E-13 | 4.062E-13 | 4.062E-13 | 4.062E-13 | 4.061E-13 | 4.061E-13 | 4.061E-13 | 4.061E-13 | 4.060E-13 | 4.060E-13 | 4.060E-13 |
| bk247 | 1.977E-15 | 1.977E-15 | 1.977E-15 | 1.977E-15 | 1.977E-15 | 1.976E-15 | 1.976E-15 | 1.975E-15 | 1.974E-15 | 1.973E-15 | 1.972E-15 | 1.972E-15 | 1.971E-15 | 1.970E-15 |
| bk248 | 8.395E-14 | 8.391E-14 | 8.384E-14 | 8.353E-14 | 8.267E-14 | 8.161E-14 | 7.734E-14 | 7.160E-14 | 6.630E-14 | 6.137E-14 | 5.795E-14 | 5.682E-14 | 5.261E-14 | 4.871E-14 |
| bk249 | 3.690E-08 | 3.674E-08 | 3.638E-08 | 3.503E-08 | 3.150E-08 | 2.760E-08 | 1.589E-08 | 7.206E-09 | 3.268E-09 | 1.479E-09 | 8.206E-10 | 6.709E-10 | 3.043E-10 | 1.380E-10 |
| bk250 | 6.449E-18 | 6.417E-18 | 6.344E-18 | 6.071E-18 | 5.368E-18 | 4.605E-18 | 2.426E-18 | 9.699E-19 | 3.883E-19 | 1.556E-19 | 7.923E-20 | 6.301E-20 | 2.603E-20 | 1.126E-20 |
| cf248 | 5.491E-14 | 5.468E-14 | 5.417E-14 | 5.224E-14 | 4.718E-14 | 4.156E-14 | 2.446E-14 | 1.146E-14 | 5.265E-15 | 2.507E-15 | 1.425E-15 | 1.174E-15 | 5.499E-16 | 2.575E-16 |
| cf249 | 3.531E-08 | 3.547E-08 | 3.582E-08 | 3.717E-08 | 4.069E-08 | 4.457E-08 | 5.622E-08 | 6.478E-08 | 6.858E-08 | 7.023E-08 | 7.079E-08 | 7.090E-08 | 7.113E-08 | 7.116E-08 |
| cf250 | 1.580E-08 | 1.580E-08 | 1.579E-08 | 1.575E-08 | 1.564E-08 | 1.550E-08 | 1.494E-08 | 1.417E-08 | 1.344E-08 | 1.274E-08 | 1.225E-08 | 1.208E-08 | 1.146E-08 | 1.087E-08 |
| cf251 | 7.296E-09 | 7.296E-09 | 7.296E-09 | 7.296E-09 | 7.295E-09 | 7.294E-09 | 7.290E-09 | 7.284E-09 | 7.279E-09 | 7.273E-09 | 7.269E-09 | 7.267E-09 | 7.262E-09 | 7.256E-09 |
| cf252 | 1.849E-09 | 1.846E-09 | 1.840E-09 | 1.817E-09 | 1.755E-09 | 1.679E-09 | 1.399E-09 | 1.076E-09 | 8.283E-10 | 6.370E-10 | 5.241E-10 | 4.902E-10 | 3.773E-10 | 2.904E-10 |
| cf253 | 2.381E-16 | 2.203E-16 | 1.849E-16 | 9.357E-17 | 1.390E-17 | 1.294E-18 | 6.335E-23 | 4.289E-29 | 2.904E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 5.287E-15 | 5.167E-15 | 4.908E-15 | 4.016E-15 | 2.291E-15 | 1.139E-15 | 6.133E-17 | 9.365E-19 | 1.430E-20 | 2.159E-22 | 9.568E-24 | 3.297E-24 | 5.034E-26 | 7.688E-28 |
| es252 | 3.755E-18 | 3.744E-18 | 3.719E-18 | 3.625E-18 | 3.373E-18 | 3.084E-18 | 2.120E-18 | 1.240E-18 | 7.251E-19 | 4.235E-19 | 2.840E-19 | 2.477E-19 | 1.449E-19 | 8.472E-20 |
| es253 | 4.869E-15 | 4.567E-15 | 3.954E-15 | 2.253E-15 | 4.586E-16 | 6.172E-17 | 1.225E-20 | 5.430E-26 | 2.329E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 1.349E-14 | 1.342E-14 | 1.327E-14 | 1.270E-14 | 1.123E-14 | 9.630E-15 | 5.072E-15 | 2.026E-15 | 8.093E-16 | 3.225E-16 | 1.627E-16 | 1.288E-16 | 5.145E-17 | 2.055E-17 |
| es255 | 2.788E-17 | 2.693E-17 | 2.490E-17 | 1.836E-17 | 7.820E-18 | 2.703E-18 | 3.185E-20 | 5.526E-23 | 9.587E-26 | 1.634E-28 | 1.432E-30 | 2.836E-31 | 4.920E-34 | 0.000E+00 |
| total | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 |

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5 more years for cooling used fuel material actinides page 14

0

element concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| he | 3.079E-02 | 3.084E-02 | 3.096E-02 | 3.139E-02 | 3.246E-02 | 3.359E-02 | 3.670E-02 | 3.930E-02 | 4.137E-02 | 4.337E-02 | 4.487E-02 | 4.539E-02 | 4.745E-02 | 4.954E-02 |
| li | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 | 4.482E-16 |
| tl | 3.420E-14 | 3.434E-14 | 3.443E-14 | 3.592E-14 | 4.150E-14 | 4.790E-14 | 7.702E-14 | 1.219E-13 | 1.661E-13 | 2.068E-13 | 2.340E-13 | 2.428E-13 | 2.728E-13 | 2.981E-13 |
| pb | 8.445E-09 | 8.509E-09 | 8.655E-09 | 9.234E-09 | 1.096E-08 | 1.342E-08 | 2.777E-08 | 6.068E-08 | 1.085E-07 | 1.706E-07 | 2.251E-07 | 2.452E-07 | 3.308E-07 | 4.256E-07 |
| bi | 2.886E-12 | 2.896E-12 | 2.905E-12 | 3.001E-12 | 3.352E-12 | 3.757E-12 | 5.586E-12 | 8.387E-12 | 1.115E-11 | 1.372E-11 | 1.546E-11 | 1.603E-11 | 1.801E-11 | 1.973E-11 |
| po | 9.935E-15 | 9.954E-15 | 9.995E-15 | 1.015E-14 | 1.051E-14 | 1.080E-14 | 1.138E-14 | 1.161E-14 | 1.180E-14 | 1.211E-14 | 1.245E-14 | 1.259E-14 | 1.331E-14 | 1.429E-14 |
| rn | 3.069E-14 | 3.070E-14 | 3.087E-14 | 3.223E-14 | 3.723E-14 | 4.296E-14 | 6.904E-14 | 1.093E-13 | 1.489E-13 | 1.854E-13 | 2.099E-13 | 2.178E-13 | 2.450E-13 | 2.678E-13 |
| fr | 4.158E-18 | 4.159E-18 | 4.160E-18 | 4.167E-18 | 4.194E-18 | 4.233E-18 | 4.404E-18 | 4.649E-18 | 4.901E-18 | 5.161E-18 | 5.359E-18 | 5.421E-18 | 5.699E-18 | 5.979E-18 |
| ra | 2.001E-10 | 2.002E-10 | 2.013E-10 | 2.098E-10 | 2.404E-10 | 2.758E-10 | 4.376E-10 | 6.898E-10 | 9.436E-10 | 1.185E-09 | 1.353E-09 | 1.409E-09 | 1.608E-09 | 1.791E-09 |
| ac | 1.099E-11 | 1.103E-11 | 1.113E-11 | 1.149E-11 | 1.252E-11 | 1.380E-11 | 1.917E-11 | 2.695E-11 | 3.482E-11 | 4.281E-11 | 4.880E-11 | 5.086E-11 | 5.901E-11 | 6.723E-11 |
| th | 4.316E-06 | 4.319E-06 | 4.327E-06 | 4.357E-06 | 4.443E-06 | 4.551E-06 | 5.022E-06 | 5.746E-06 | 6.526E-06 | 7.360E-06 | 8.013E-06 | 8.242E-06 | 9.175E-06 | 1.016E-05 |
| pa | 4.650E-07 | 4.651E-07 | 4.653E-07 | 4.661E-07 | 4.684E-07 | 4.713E-07 | 4.832E-07 | 5.006E-07 | 5.177E-07 | 5.353E-07 | 5.483E-07 | 5.529E-07 | 5.708E-07 | 5.888E-07 |
| u | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 | 1.390E+04 |
| np | 2.406E+00 | 2.406E+00 | 2.406E+00 | 2.407E+00 | 2.408E+00 | 2.410E+00 | 2.419E+00 | 2.437E+00 | 2.460E+00 | 2.489E+00 | 2.512E+00 | 2.521E+00 | 2.558E+00 | 2.600E+00 |
| pu | 5.197E+02 | 5.197E+02 | 5.196E+02 | 5.195E+02 | 5.191E+02 | 5.185E+02 | 5.162E+02 | 5.129E+02 | 5.097E+02 | 5.066E+02 | 5.044E+02 | 5.037E+02 | 5.009E+02 | 4.983E+02 |
| am | 1.008E+01 | 1.010E+01 | 1.015E+01 | 1.032E+01 | 1.080E+01 | 1.140E+01 | 1.384E+01 | 1.719E+01 | 2.037E+01 | 2.340E+01 | 2.556E+01 | 2.628E+01 | 2.901E+01 | 3.161E+01 |
| cm | 1.786E+00 | 1.783E+00 | 1.777E+00 | 1.753E+00 | 1.695E+00 | 1.637E+00 | 1.489E+00 | 1.395E+00 | 1.338E+00 | 1.291E+00 | 1.257E+00 | 1.246E+00 | 1.204E+00 | 1.164E+00 |
| bk | 3.690E-08 | 3.674E-08 | 3.638E-08 | 3.503E-08 | 3.150E-08 | 2.760E-08 | 1.589E-08 | 7.206E-09 | 3.268E-09 | 1.479E-09 | 8.207E-10 | 6.710E-10 | 3.043E-10 | 1.381E-10 |
| cf | 6.026E-08 | 6.041E-08 | 6.075E-08 | 6.203E-08 | 6.537E-08 | 6.905E-08 | 7.984E-08 | 8.730E-08 | 9.013E-08 | 9.089E-08 | 9.083E-08 | 9.075E-08 | 9.023E-08 | 8.957E-08 |
| es | 1.839E-14 | 1.802E-14 | 1.725E-14 | 1.497E-14 | 1.170E-14 | 9.697E-15 | 5.074E-15 | 2.027E-15 | 8.100E-16 | 3.229E-16 | 1.630E-16 | 1.291E-16 | 5.160E-17 | 2.064E-17 |
| totals | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 | 1.444E+04 |

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5 more years for cooling used fuel material actinides page 15

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg206 | 9.981E-19 | 9.981E-19 | 9.979E-19 | 9.971E-19 | 9.949E-19 | 9.924E-19 | 9.845E-19 | 9.823E-19 | 9.932E-19 | 1.020E-18 | 1.052E-18 | 1.066E-18 | 1.134E-18 | 1.227E-18 |
| tl206 | 7.039E-17 | 7.041E-17 | 7.038E-17 | 7.030E-17 | 7.014E-17 | 7.000E-17 | 6.943E-17 | 6.927E-17 | 7.004E-17 | 7.194E-17 | 7.421E-17 | 7.517E-17 | 7.995E-17 | 8.654E-17 |
| tl207 | 7.550E-10 | 7.549E-10 | 7.559E-10 | 7.702E-10 | 8.379E-10 | 9.297E-10 | 1.385E-09 | 1.947E-09 | 2.517E-09 | 3.094E-09 | 3.529E-09 | 3.605E-09 | 4.266E-09 | 4.861E-09 |
| tl208 | 1.013E-05 | 1.017E-05 | 1.020E-05 | 1.064E-05 | 1.229E-05 | 1.419E-05 | 2.281E-05 | 3.611E-05 | 4.919E-05 | 6.124E-05 | 6.930E-05 | 7.192E-05 | 8.081E-05 | 8.829E-05 |
| tl209 | 1.479E-11 | 1.480E-11 | 1.479E-11 | 1.478E-11 | 1.478E-11 | 1.480E-11 | 1.492E-11 | 1.508E-11 | 1.526E-11 | 1.546E-11 | 1.562E-11 | 1.565E-11 | 1.591E-11 | 1.616E-11 |
| tl210 | 4.812E-15 | 4.816E-15 | 4.832E-15 | 4.946E-15 | 5.355E-15 | 5.837E-15 | 8.137E-15 | 1.229E-14 | 1.754E-14 | 2.402E-14 | 2.968E-14 | 3.179E-14 | 4.097E-14 | 5.166E-14 |
| pb209 | 6.725E-10 | 6.726E-10 | 6.723E-10 | 6.718E-10 | 6.719E-10 | 6.729E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| pb210 | 5.253E-11 | 5.253E-11 | 5.252E-11 | 5.248E-11 | 5.236E-11 | 5.223E-11 | 5.181E-11 | 5.170E-11 | 5.228E-11 | 5.369E-11 | 5.538E-11 | 5.610E-11 | 5.967E-11 | 6.459E-11 |
| pb211 | 7.571E-10 | 7.570E-10 | 7.580E-10 | 7.723E-10 | 8.402E-10 | 9.323E-10 | 1.389E-09 | 1.953E-09 | 2.524E-09 | 3.103E-09 | 3.538E-09 | 3.615E-09 | 4.278E-09 | 4.874E-09 |
| pb212 | 2.818E-05 | 2.817E-05 | 2.837E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| pb214 | 2.291E-11 | 2.293E-11 | 2.301E-11 | 2.355E-11 | 2.550E-11 | 2.779E-11 | 3.874E-11 | 5.849E-11 | 8.350E-11 | 1.143E-10 | 1.413E-10 | 1.513E-10 | 1.950E-10 | 2.460E-10 |
| bi210 | 5.257E-11 | 5.256E-11 | 5.254E-11 | 5.250E-11 | 5.238E-11 | 5.227E-11 | 5.185E-11 | 5.173E-11 | 5.231E-11 | 5.372E-11 | 5.542E-11 | 5.614E-11 | 5.971E-11 | 6.462E-11 |
| bi211 | 7.571E-10 | 7.570E-10 | 7.580E-10 | 7.723E-10 | 8.402E-10 | 9.323E-10 | 1.389E-09 | 1.953E-09 | 2.524E-09 | 3.103E-09 | 3.538E-09 | 3.615E-09 | 4.278E-09 | 4.874E-09 |
| bi212 | 2.818E-05 | 2.830E-05 | 2.838E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| bi213 | 6.725E-10 | 6.725E-10 | 6.723E-10 | 6.717E-10 | 6.719E-10 | 6.729E-10 | 6.782E-10 | 6.856E-10 | 6.938E-10 | 7.028E-10 | 7.100E-10 | 7.116E-10 | 7.230E-10 | 7.343E-10 |
| bi214 | 2.291E-11 | 2.293E-11 | 2.301E-11 | 2.355E-11 | 2.550E-11 | 2.779E-11 | 3.875E-11 | 5.851E-11 | 8.352E-11 | 1.144E-10 | 1.413E-10 | 1.514E-10 | 1.951E-10 | 2.460E-10 |
| po209 | 2.761E-18 | 2.761E-18 | 2.761E-18 | 2.760E-18 | 2.758E-18 | 2.755E-18 | 2.742E-18 | 2.723E-18 | 2.705E-18 | 2.686E-18 | 2.673E-18 | 2.668E-18 | 2.650E-18 | 2.632E-18 |
| po210 | 4.431E-11 | 4.439E-11 | 4.457E-11 | 4.524E-11 | 4.681E-11 | 4.807E-11 | 5.037E-11 | 5.095E-11 | 5.131E-11 | 5.228E-11 | 5.353E-11 | 5.407E-11 | 5.703E-11 | 6.117E-11 |
| po211 | 2.090E-12 | 2.089E-12 | 2.092E-12 | 2.132E-12 | 2.319E-12 | 2.573E-12 | 3.834E-12 | 5.389E-12 | 6.965E-12 | 8.564E-12 | 9.766E-12 | 9.977E-12 | 1.181E-11 | 1.345E-11 |
| po212 | 1.805E-05 | 1.813E-05 | 1.818E-05 | 1.896E-05 | 2.191E-05 | 2.528E-05 | 4.066E-05 | 6.437E-05 | 8.768E-05 | 1.092E-04 | 1.235E-04 | 1.282E-04 | 1.440E-04 | 1.574E-04 |
| po213 | 6.577E-10 | 6.578E-10 | 6.575E-10 | 6.570E-10 | 6.572E-10 | 6.581E-10 | 6.634E-10 | 6.706E-10 | 6.786E-10 | 6.874E-10 | 6.944E-10 | 6.959E-10 | 7.072E-10 | 7.182E-10 |
| po214 | 2.538E-11 | 2.525E-11 | 2.502E-11 | 2.470E-11 | 2.573E-11 | 2.782E-11 | 3.874E-11 | 5.849E-11 | 8.350E-11 | 1.143E-10 | 1.413E-10 | 1.513E-10 | 1.950E-10 | 2.460E-10 |
| po215 | 7.571E-10 | 7.570E-10 | 7.580E-10 | 7.723E-10 | 8.402E-10 | 9.323E-10 | 1.389E-09 | 1.953E-09 | 2.524E-09 | 3.103E-09 | 3.538E-09 | 3.615E-09 | 4.278E-09 | 4.874E-09 |
| po216 | 2.818E-05 | 2.819E-05 | 2.835E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| po218 | 2.291E-11 | 2.293E-11 | 2.301E-11 | 2.355E-11 | 2.550E-11 | 2.779E-11 | 3.875E-11 | 5.851E-11 | 8.352E-11 | 1.144E-10 | 1.413E-10 | 1.514E-10 | 1.951E-10 | 2.460E-10 |
| at217 | 6.725E-10 | 6.726E-10 | 6.723E-10 | 6.718E-10 | 6.719E-10 | 6.729E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| at218 | 4.582E-15 | 4.586E-15 | 4.602E-15 | 4.711E-15 | 5.100E-15 | 5.559E-15 | 7.749E-15 | 1.170E-14 | 1.670E-14 | 2.287E-14 | 2.826E-14 | 3.027E-14 | 3.902E-14 | 4.920E-14 |
| rn217 | 4.708E-14 | 4.708E-14 | 4.706E-14 | 4.702E-14 | 4.704E-14 | 4.711E-14 | 4.748E-14 | 4.800E-14 | 4.857E-14 | 4.920E-14 | 4.970E-14 | 4.981E-14 | 5.061E-14 | 5.141E-14 |
| rn218 | 2.474E-12 | 2.322E-12 | 2.011E-12 | 1.147E-12 | 2.350E-13 | 3.202E-14 | 1.470E-17 | 1.170E-17 | 1.670E-17 | 2.287E-17 | 2.826E-17 | 3.027E-17 | 3.902E-17 | 4.920E-17 |
| rn219 | 7.571E-10 | 7.570E-10 | 7.580E-10 | 7.723E-10 | 8.402E-10 | 9.323E-10 | 1.389E-09 | 1.953E-09 | 2.524E-09 | 3.103E-09 | 3.538E-09 | 3.615E-09 | 4.278E-09 | 4.874E-09 |
| rn220 | 2.818E-05 | 2.819E-05 | 2.835E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| rn222 | 2.291E-11 | 2.292E-11 | 2.300E-11 | 2.355E-11 | 2.550E-11 | 2.779E-11 | 3.875E-11 | 5.851E-11 | 8.352E-11 | 1.144E-10 | 1.413E-10 | 1.514E-10 | 1.951E-10 | 2.460E-10 |
| fr221 | 6.725E-10 | 6.726E-10 | 6.723E-10 | 6.718E-10 | 6.719E-10 | 6.729E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| fr223 | 1.097E-11 | 1.101E-11 | 1.110E-11 | 1.147E-11 | 1.249E-11 | 1.377E-11 | 1.914E-11 | 2.690E-11 | 3.477E-11 | 4.274E-11 | 4.873E-11 | 5.078E-11 | 5.892E-11 | 6.713E-11 |
| ra222 | 2.474E-12 | 2.322E-12 | 2.011E-12 | 1.147E-12 | 2.350E-13 | 3.202E-14 | 6.951E-18 | 3.673E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 7.571E-10 | 7.570E-10 | 7.580E-10 | 7.723E-10 | 8.402E-10 | 9.323E-10 | 1.389E-09 | 1.953E-09 | 2.524E-09 | 3.103E-09 | 3.538E-09 | 3.615E-09 | 4.278E-09 | 4.874E-09 |
| ra224 | 2.818E-05 | 2.819E-05 | 2.835E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| ra225 | 6.717E-10 | 6.716E-10 | 6.716E-10 | 6.715E-10 | 6.721E-10 | 6.732E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| ra226 | 2.291E-11 | 2.298E-11 | 2.314E-11 | 2.374E-11 | 2.550E-11 | 2.779E-11 | 3.875E-11 | 5.851E-11 | 8.352E-11 | 1.144E-10 | 1.413E-10 | 1.514E-10 | 1.951E-10 | 2.460E-10 |
| ra228 | 1.054E-13 | 1.055E-13 | 1.058E-13 | 1.069E-13 | 1.099E-13 | 1.136E-13 | 1.289E-13 | 1.499E-13 | 1.700E-13 | 1.893E-13 | 2.033E-13 | 2.079E-13 | 2.259E-13 | 2.433E-13 |
| ac225 | 6.725E-10 | 6.724E-10 | 6.722E-10 | 6.717E-10 | 6.719E-10 | 6.729E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| ac226 | 4.576E-17 | 4.226E-17 | 3.532E-17 | 1.759E-17 | 2.498E-18 | 2.199E-19 | 8.521E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 7.946E-10 | 7.976E-10 | 8.044E-10 | 8.309E-10 | 9.050E-10 | 9.976E-10 | 1.387E-09 | 1.949E-09 | 2.519E-09 | 3.097E-09 | 3.531E-09 | 3.680E-09 | 4.269E-09 | 4.865E-09 |
| ac228 | 1.054E-13 | 1.055E-13 | 1.058E-13 | 1.069E-13 | 1.099E-13 | 1.136E-13 | 1.289E-13 | 1.499E-13 | 1.700E-13 | 1.894E-13 | 2.033E-13 | 2.080E-13 | 2.259E-13 | 2.434E-13 |
| th226 | 2.474E-12 | 2.322E-12 | 2.011E-12 | 1.147E-12 | 2.350E-13 | 3.202E-14 | 6.951E-18 | 3.673E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 7.437E-10 | 7.467E-10 | 7.533E-10 | 7.793E-10 | 8.523E-10 | 9.435E-10 | 1.370E-09 | 1.926E-09 | 2.489E-09 | 3.060E-09 | 3.489E-09 | 3.588E-09 | 4.219E-09 | 4.807E-09 |
| th228 | 2.811E-05 | 2.827E-05 | 2.862E-05 | 3.001E-05 | 3.405E-05 | 3.930E-05 | 6.331E-05 | 1.002E-04 | 1.365E-04 | 1.699E-04 | 1.921E-04 | 1.992E-04 | 2.241E-04 | 2.448E-04 |
| th229 | 6.712E-10 | 6.713E-10 | 6.713E-10 | 6.716E-10 | 6.725E-10 | 6.736E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.100E-10 | 7.126E-10 | 7.231E-10 | 7.344E-10 |
| th230 | 2.891E-08 | 2.896E-08 | 2.908E-08 | 2.955E-08 | 3.089E-08 | 3.259E-08 | 4.000E-08 | 5.157E-08 | 6.429E-08 | 7.820E-08 | 8.927E-08 | 9.320E-08 | 1.093E-07 | 1.266E-07 |
| th231 | 3.680E-05 | 3.680E-05 | 3.680E-05 | 3.680E-05 | 3.681E-05 | 3.681E-05 | 3.682E-05 | 3.684E-05 | 3.686E-05 | 3.687E-05 | 3.688E-05 | 3.689E-05 | 3.691E-05 | 3.692E-05 |
| th232 | 2.936E-13 | 2.937E-13 | 2.938E-13 | 2.944E-13 | 2.962E-13 | 2.983E-13 | 3.073E-13 | 3.203E-13 | 3.333E-13 | 3.464E-13 | 3.562E-13 | 3.596E-13 | 3.727E-13 | 3.859E-13 |
| th234 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.672E-03 | 4.670E-03 | 4.670E-03 | 4.670E-03 | 4.671E-03 | 4.670E-03 | 4.670E-03 | 4.670E-03 |

1

5 more years for cooling used fuel material actinides page 16

0

nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 1.329E-12 | 1.228E-12 | 1.026E-12 | 5.110E-13 | 7.256E-14 | 6.388E-15 | 2.476E-19 | 1.199E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 1.812E-08 | 1.813E-08 | 1.814E-08 | 1.818E-08 | 1.829E-08 | 1.842E-08 | 1.895E-08 | 1.975E-08 | 2.058E-08 | 2.131E-08 | 2.180E-08 | 2.210E-08 | 2.288E-08 | 2.367E-08 |
| pa232 | 9.006E-11 | 9.006E-11 | 9.006E-11 | 9.006E-11 | 9.006E-11 | 9.006E-11 | 9.006E-11 | 9.005E-11 | 9.005E-11 | 9.005E-11 | 9.005E-11 | 9.005E-11 | 9.005E-11 | 9.005E-11 |
| pa233 | 1.693E-03 | 1.693E-03 | 1.693E-03 | 1.693E-03 | 1.694E-03 | 1.696E-03 | 1.702E-03 | 1.716E-03 | 1.732E-03 | 1.752E-03 | 1.766E-03 | 1.772E-03 | 1.801E-03 | 1.830E-03 |
| pa234m | 4.669E-03 | 4.670E-03 | 4.670E-03 | 4.670E-03 | 4.669E-03 | 4.669E-03 | 4.672E-03 | 4.670E-03 | 4.670E-03 | 4.670E-03 | 4.671E-03 | 4.670E-03 | 4.670E-03 | 4.670E-03 |
| pa234 | 7.471E-06 | 7.467E-06 | 7.471E-06 | 7.471E-06 | 7.471E-06 | 7.471E-06 | 7.476E-06 | 7.471E-06 | 7.471E-06 | 7.471E-06 | 7.474E-06 | 7.471E-06 | 7.471E-06 | 7.471E-06 |
| u230 | 2.473E-12 | 2.320E-12 | 2.009E-12 | 1.146E-12 | 2.347E-13 | 3.199E-14 | 6.944E-18 | 3.623E-23 | 1.890E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 1.071E-04 | 1.074E-04 | 1.082E-04 | 1.110E-04 | 1.188E-04 | 1.281E-04 | 1.628E-04 | 2.027E-04 | 2.332E-04 | 2.565E-04 | 2.700E-04 | 2.740E-04 | 2.870E-04 | 2.965E-04 |
| u233 | 6.687E-08 | 6.691E-08 | 6.700E-08 | 6.735E-08 | 6.834E-08 | 6.957E-08 | 7.474E-08 | 8.296E-08 | 9.126E-08 | 9.966E-08 | 1.054E-07 | 1.073E-07 | 1.159E-07 | 1.246E-07 |
| u234 | 1.070E-03 | 1.070E-03 | 1.072E-03 | 1.079E-03 | 1.093E-03 | 1.112E-03 | 1.198E-03 | 1.322E-03 | 1.447E-03 | 1.571E-03 | 1.663E-03 | 1.694E-03 | 1.816E-03 | 1.937E-03 |
| u235 | 3.680E-05 | 3.680E-05 | 3.680E-05 | 3.680E-05 | 3.681E-05 | 3.681E-05 | 3.682E-05 | 3.684E-05 | 3.686E-05 | 3.687E-05 | 3.688E-05 | 3.689E-05 | 3.691E-05 | 3.692E-05 |
| u236 | 2.615E-04 | 2.615E-04 | 2.615E-04 | 2.616E-04 | 2.617E-04 | 2.619E-04 | 2.626E-04 | 2.636E-04 | 2.646E-04 | 2.656E-04 | 2.663E-04 | 2.666E-04 | 2.676E-04 | 2.686E-04 |
| u237 | 1.908E-01 | 1.908E-01 | 1.907E-01 | 1.902E-01 | 1.890E-01 | 1.875E-01 | 1.812E-01 | 1.726E-01 | 1.645E-01 | 1.567E-01 | 1.511E-01 | 1.493E-01 | 1.422E-01 | 1.355E-01 |
| u238 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 | 4.669E-03 |
| u240 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 |
| np235 | 3.850E-05 | 3.836E-05 | 3.806E-05 | 3.691E-05 | 3.388E-05 | 3.045E-05 | 1.949E-05 | 1.029E-05 | 5.434E-06 | 2.865E-06 | 1.780E-06 | 1.513E-06 | 7.987E-07 | 4.217E-07 |
| np236 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 | 4.503E-08 |
| np237 | 1.694E-03 | 1.694E-03 | 1.694E-03 | 1.694E-03 | 1.695E-03 | 1.696E-03 | 1.703E-03 | 1.716E-03 | 1.732E-03 | 1.752E-03 | 1.768E-03 | 1.775E-03 | 1.801E-03 | 1.830E-03 |
| np238 | 2.971E-03 | 2.971E-03 | 2.970E-03 | 2.970E-03 | 2.968E-03 | 2.965E-03 | 2.955E-03 | 2.941E-03 | 2.926E-03 | 2.912E-03 | 2.901E-03 | 2.898E-03 | 2.883E-03 | 2.869E-03 |
| np239 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.180E-01 | 8.180E-01 | 8.179E-01 | 8.178E-01 | 8.178E-01 | 8.177E-01 | 8.177E-01 | 8.176E-01 |
| np240m | 1.787E-08 | 1.788E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787E-08 | 1.787

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| am242m | 6.472E-01 | 6.471E-01 | 6.471E-01 | 6.469E-01 | 6.465E-01 | 6.460E-01 | 6.438E-01 | 6.406E-01 | 6.375E-01 | 6.344E-01 | 6.320E-01 | 6.312E-01 | 6.282E-01 | 6.251E-01 |
| am242 | 6.442E-01 | 6.442E-01 | 6.441E-01 | 6.440E-01 | 6.436E-01 | 6.430E-01 | 6.408E-01 | 6.377E-01 | 6.346E-01 | 6.314E-01 | 6.291E-01 | 6.284E-01 | 6.253E-01 | 6.222E-01 |
| am243 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.181E-01 | 8.180E-01 | 8.179E-01 | 8.179E-01 | 8.178E-01 | 8.178E-01 | 8.177E-01 | 8.177E-01 | 8.176E-01 |
| am244 | 1.346E-11 | 1.346E-11 | 1.345E-11 | 1.340E-11 | 1.326E-11 | 1.309E-11 | 1.240E-11 | 1.148E-11 | 1.063E-11 | 9.842E-12 | 9.293E-12 | 9.112E-12 | 8.437E-12 | 7.811E-12 |
| am245 | 8.774E-10 | 8.736E-10 | 8.651E-10 | 8.329E-10 | 7.491E-10 | 6.563E-10 | 3.778E-10 | 1.713E-10 | 7.772E-11 | 3.517E-11 | 1.951E-11 | 1.595E-11 | 7.236E-12 | 3.282E-12 |
| am246m | 1.260E-14 | 1.262E-14 | 1.262E-14 | 1.261E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 | 1.260E-14 |
| cm240 | 8.052E-09 | 7.649E-09 | 6.814E-09 | 4.348E-09 | 1.236E-09 | 2.582E-10 | 3.705E-13 | 3.157E-17 | 2.690E-21 | 2.234E-25 | 2.073E-28 | 1.904E-29 | 0.000E+00 | 0.000E+00 |
| cm241 | 8.623E-06 | 8.266E-06 | 7.516E-06 | 5.193E-06 | 1.844E-06 | 5.080E-07 | 2.320E-09 | 1.037E-12 | 4.631E-16 | 2.026E-19 | 6.460E-22 | 9.051E-23 | 4.044E-26 | 1.807E-29 |
| cm242 | 9.938E+02 | 9.853E+02 | 9.667E+02 | 8.974E+02 | 7.286E+02 | 5.622E+02 | 1.904E+02 | 4.071E+01 | 9.031E+00 | 2.316E+00 | 1.085E+00 | 8.999E-01 | 5.982E-01 | 5.324E-01 |
| cm243 | 1.039E+00 | 1.038E+00 | 1.038E+00 | 1.037E+00 | 1.034E+00 | 1.030E+00 | 1.013E+00 | 9.888E-01 | 9.655E-01 | 9.427E-01 | 9.262E-01 | 9.206E-01 | 8.989E-01 | 8.778E-01 |
| cm244 | 1.090E+02 | 1.090E+02 | 1.089E+02 | 1.087E+02 | 1.082E+02 | 1.075E+02 | 1.047E+02 | 1.007E+02 | 9.695E+01 | 9.330E+01 | 9.068E+01 | 8.980E+01 | 8.643E+01 | 8.319E+01 |
| cm245 | 1.931E-02 | 1.931E-02 | 1.931E-02 | 1.931E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.930E-02 | 1.929E-02 |
| cm246 | 1.832E-03 | 1.832E-03 | 1.832E-03 | 1.832E-03 | 1.832E-03 | 1.832E-03 | 1.832E-03 | 1.831E-03 | 1.831E-03 | 1.831E-03 | 1.831E-03 | 1.831E-03 | 1.830E-03 | 1.830E-03 |
| cm247 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 | 7.291E-09 |
| cm248 | 1.766E-08 | 1.766E-08 | 1.766E-08 | 1.766E-08 | 1.766E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 | 1.767E-08 |
| cm249 | 2.145E-14 | 1.985E-14 | 1.666E-14 | 8.431E-15 | 1.252E-15 | 1.166E-16 | 5.708E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 7.001E-14 | 7.001E-14 | 7.001E-14 | 7.001E-14 | 7.001E-14 | 7.001E-14 | 7.001E-14 | 7.000E-14 | 7.000E-14 | 6.999E-14 | 6.999E-14 | 6.998E-14 | 6.998E-14 | 6.997E-14 |
| bk247 | 2.074E-15 | 2.074E-15 | 2.074E-15 | 2.074E-15 | 2.074E-15 | 2.074E-15 | 2.073E-15 | 2.072E-15 | 2.071E-15 | 2.070E-15 | 2.069E-15 | 2.069E-15 | 2.068E-15 | 2.067E-15 |
| bk248 | 1.346E-11 | 1.346E-11 | 1.344E-11 | 1.339E-11 | 1.326E-11 | 1.309E-11 | 1.240E-11 | 1.148E-11 | 1.063E-11 | 9.841E-12 | 9.292E-12 | 9.111E-12 | 8.436E-12 | 7.810E-12 |

1

5 more years for cooling used fuel material actinides page 17

0 nuclide radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 6.049E-05 | 6.023E-05 | 5.965E-05 | 5.743E-05 | 5.164E-05 | 4.525E-05 | 2.605E-05 | 1.181E-05 | 5.358E-06 | 2.425E-06 | 1.345E-06 | 1.100E-06 | 4.989E-07 | 2.263E-07 |
| bk250 | 2.518E-11 | 2.505E-11 | 2.477E-11 | 2.370E-11 | 2.096E-11 | 1.798E-11 | 9.472E-12 | 3.787E-12 | 1.516E-12 | 6.074E-13 | 3.093E-13 | 2.460E-13 | 1.016E-13 | 4.396E-14 |
| bk251 | 2.874E-14 | 2.776E-14 | 2.566E-14 | 1.892E-14 | 8.060E-15 | 2.786E-15 | 3.283E-17 | 5.695E-20 | 9.881E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 8.673E-11 | 8.637E-11 | 8.556E-11 | 8.251E-11 | 7.452E-11 | 6.565E-11 | 3.864E-11 | 1.810E-11 | 8.474E-12 | 3.960E-12 | 2.250E-12 | 1.855E-12 | 8.686E-13 | 4.068E-13 |
| cf249 | 1.445E-07 | 1.451E-07 | 1.466E-07 | 1.521E-07 | 1.665E-07 | 1.824E-07 | 2.301E-07 | 2.651E-07 | 2.807E-07 | 2.874E-07 | 2.897E-07 | 2.902E-07 | 2.911E-07 | 2.912E-07 |
| cf250 | 1.729E-06 | 1.728E-06 | 1.727E-06 | 1.723E-06 | 1.710E-06 | 1.695E-06 | 1.634E-06 | 1.549E-06 | 1.470E-06 | 1.394E-06 | 1.340E-06 | 1.322E-06 | 1.253E-06 | 1.189E-06 |
| cf251 | 1.158E-08 | 1.158E-08 | 1.158E-08 | 1.158E-08 | 1.158E-08 | 1.157E-08 | 1.157E-08 | 1.156E-08 | 1.155E-08 | 1.154E-08 | 1.153E-08 | 1.153E-08 | 1.152E-08 | 1.151E-08 |
| cf252 | 9.921E-07 | 9.907E-07 | 9.875E-07 | 9.752E-07 | 9.415E-07 | 9.012E-07 | 7.605E-07 | 5.776E-07 | 4.445E-07 | 3.418E-07 | 2.812E-07 | 2.631E-07 | 2.027E-07 | 1.558E-07 |
| cf253 | 6.904E-12 | 6.387E-12 | 5.361E-12 | 2.713E-12 | 4.029E-13 | 3.751E-14 | 1.837E-18 | 1.243E-24 | 8.419E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 4.495E-11 | 4.393E-11 | 4.172E-11 | 3.414E-11 | 1.947E-11 | 9.681E-12 | 5.213E-13 | 7.961E-15 | 1.216E-16 | 1.835E-18 | 8.134E-20 | 2.803E-20 | 4.280E-22 | 6.535E-24 |
| es252 | 4.127E-15 | 4.115E-15 | 4.087E-15 | 3.984E-15 | 3.707E-15 | 3.389E-15 | 2.330E-15 | 1.363E-15 | 7.970E-16 | 4.654E-16 | 3.121E-16 | 2.722E-16 | 1.592E-16 | 9.311E-17 |
| es253 | 1.228E-10 | 1.152E-10 | 9.974E-11 | 5.682E-11 | 1.157E-11 | 1.557E-12 | 3.091E-16 | 1.370E-21 | 5.874E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 2.516E-11 | 2.503E-11 | 2.475E-11 | 2.369E-11 | 2.094E-11 | 1.796E-11 | 9.461E-12 | 3.779E-12 | 1.510E-12 | 6.015E-13 | 3.036E-13 | 2.403E-13 | 9.598E-14 | 3.834E-14 |
| es255 | 3.589E-13 | 3.466E-13 | 3.205E-13 | 2.363E-13 | 1.007E-13 | 3.479E-14 | 4.100E-16 | 7.112E-19 | 1.234E-21 | 2.104E-24 | 1.844E-26 | 3.650E-27 | 6.332E-30 | 0.000E+00 |
| total | 8.997E+03 | 8.987E+03 | 8.964E+03 | 8.877E+03 | 8.660E+03 | 8.434E+03 | 7.815E+03 | 7.323E+03 | 6.966E+03 | 6.647E+03 | 6.424E+03 | 6.350E+03 | 6.067E+03 | 5.798E+03 |

1

5 more years for cooling used fuel material actinides page 18

0 element radioactivity, curies

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| hg | 9.981E-19 | 9.981E-19 | 9.979E-19 | 9.971E-19 | 9.949E-19 | 9.924E-19 | 9.845E-19 | 9.823E-19 | 9.932E-19 | 1.020E-18 | 1.052E-18 | 1.066E-18 | 1.134E-18 | 1.227E-18 |
| tl | 1.013E-05 | 1.017E-05 | 1.020E-05 | 1.064E-05 | 1.229E-05 | 1.419E-05 | 2.281E-05 | 3.611E-05 | 4.920E-05 | 6.125E-05 | 6.930E-05 | 7.192E-05 | 8.082E-05 | 8.830E-05 |
| pb | 2.819E-05 | 2.817E-05 | 2.838E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| bi | 2.819E-05 | 2.830E-05 | 2.838E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| po | 4.624E-05 | 4.632E-05 | 4.653E-05 | 4.856E-05 | 5.611E-05 | 6.476E-05 | 1.041E-04 | 1.648E-04 | 2.246E-04 | 2.796E-04 | 3.163E-04 | 3.283E-04 | 3.689E-04 | 4.030E-04 |
| at | 6.725E-10 | 6.726E-10 | 6.723E-10 | 6.718E-10 | 6.720E-10 | 6.729E-10 | 6.783E-10 | 6.857E-10 | 6.939E-10 | 7.029E-10 | 7.101E-10 | 7.116E-10 | 7.231E-10 | 7.344E-10 |
| rn | 2.818E-05 | 2.819E-05 | 2.835E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| fr | 6.835E-10 | 6.836E-10 | 6.834E-10 | 6.832E-10 | 6.844E-10 | 6.867E-10 | 6.974E-10 | 7.126E-10 | 7.286E-10 | 7.456E-10 | 7.588E-10 | 7.624E-10 | 7.820E-10 | 8.015E-10 |
| ra | 2.819E-05 | 2.819E-05 | 2.835E-05 | 2.960E-05 | 3.420E-05 | 3.947E-05 | 6.348E-05 | 1.005E-04 | 1.369E-04 | 1.704E-04 | 1.928E-04 | 2.001E-04 | 2.249E-04 | 2.457E-04 |
| ac | 1.467E-09 | 1.470E-09 | 1.477E-09 | 1.503E-09 | 1.577E-09 | 1.671E-09 | 2.065E-09 | 2.635E-09 | 3.213E-09 | 3.800E-09 | 4.241E-09 | 4.392E-09 | 4.993E-09 | 5.599E-09 |
| th | 4.734E-03 | 4.735E-03 | 4.735E-03 | 4.736E-03 | 4.740E-03 | 4.746E-03 | 4.773E-03 | 4.807E-03 | 4.843E-03 | 4.876E-03 | 4.900E-03 | 4.906E-03 | 4.931E-03 | 4.951E-03 |
| pa | 6.370E-03 | 6.370E-03 | 6.370E-03 | 6.370E-03 | 6.371E-03 | 6.372E-03 | 6.382E-03 | 6.393E-03 | 6.409E-03 | 6.429E-03 | 6.445E-03 | 6.449E-03 | 6.478E-03 | 6.507E-03 |
| u | 1.970E-01 | 1.969E-01 | 1.968E-01 | 1.964E-01 | 1.952E-01 | 1.937E-01 | 1.876E-01 | 1.791E-01 | 1.711E-01 | 1.635E-01 | 1.580E-01 | 1.562E-01 | 1.493E-01 | 1.427E-01 |
| np | 8.228E-01 | 8.228E-01 | 8.228E-01 | 8.228E-01 | 8.228E-01 | 8.228E-01 | 8.227E-01 | 8.226E-01 | 8.226E-01 | 8.225E-01 | 8.224E-01 | 8.224E-01 | 8.223E-01 | 8.223E-01 |
| pu | 7.870E+03 | 7.868E+03 | 7.864E+03 | 7.846E+03 | 7.796E+03 | 7.735E+03 | 7.482E+03 | 7.133E+03 | 6.800E+03 | 6.481E+03 | 6.255E+03 | 6.179E+03 | 5.891E+03 | 5.616E+03 |
| am | 2.244E+01 | 2.250E+01 | 2.266E+01 | 2.325E+01 | 2.491E+01 | 2.695E+01 | 3.532E+01 | 4.680E+01 | 5.771E+01 | 6.812E+01 | 7.551E+01 | 7.798E+01 | 8.735E+01 | 9.626E+01 |
| cm | 1.104E+03 | 1.095E+03 | 1.077E+03 | 1.007E+03 | 8.378E+02 | 6.707E+02 | 2.961E+02 | 1.424E+02 | 1.070E+02 | 9.658E+01 | 9.271E+01 | 9.164E+01 | 8.795E+01 | 8.462E+01 |
| bk | 6.049E-05 | 6.023E-05 | 5.965E-05 | 5.743E-05 | 5.164E-05 | 4.525E-05 | 2.605E-05 | 1.181E-05 | 5.358E-06 | 2.425E-06 | 1.345E-06 | 1.100E-06 | 4.989E-07 | 2.263E-07 |
| cf | 2.877E-06 | 2.876E-06 | 2.873E-06 | 2.862E-06 | 2.830E-06 | 2.791E-06 | 2.626E-06 | 2.404E-06 | 2.206E-06 | 2.034E-06 | 1.922E-06 | 1.886E-06 | 1.759E-06 | 1.647E-06 |
| es | 1.483E-10 | 1.406E-10 | 1.248E-10 | 8.075E-11 | 3.261E-11 | 1.956E-11 | 9.465E-12 | 3.781E-12 | 1.510E-12 | 6.020E-13 | 3.039E-13 | 2.406E-13 | 9.614E-14 | 3.843E-14 |
| totals | 8.997E+03 | 8.987E+03 | 8.964E+03 | 8.877E+03 | 8.660E+03 | 8.434E+03 | 7.815E+03 | 7.323E+03 | 6.966E+03 | 6.647E+03 | 6.424E+03 | 6.350E+03 | 6.067E+03 | 5.798E+03 |

1

5 more years for cooling used fuel material actinides page 19

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl206 | 2.252E-19 | 2.253E-19 | 2.252E-19 | 2.249E-19 | 2.244E-19 | 2.239E-19 | 2.221E-19 | 2.216E-19 | 2.241E-19 | 2.302E-19 | 2.374E-19 | 2.405E-19 | 2.558E-19 | 2.768E-19 |
| tl207 | 2.211E-12 | 2.211E-12 | 2.214E-12 | 2.255E-12 | 2.454E-12 | 2.722E-12 | 4.057E-12 | 5.702E-12 | 7.370E-12 | 9.061E-12 | 1.033E-11 | 1.056E-11 | 1.249E-11 | 1.423E-11 |
| tl208 | 2.388E-07 | 2.398E-07 | 2.404E-07 | 2.507E-07 | 2.897E-07 | 3.344E-07 | 5.378E-07 | 8.512E-07 | 1.160E-06 | 1.444E-06 | 1.633E-06 | 1.695E-06 | 1.905E-06 | 2.081E-06 |
| tl209 | 2.477E-13 | 2.477E-13 | 2.476E-13 | 2.474E-13 | 2.475E-13 | 2.479E-13 | 2.498E-13 | 2.526E-13 | 2.556E-13 | 2.589E-13 | 2.615E-13 | 2.621E-13 | 2.663E-13 | 2.705E-13 |
| tl210 | 1.082E-16 | 1.083E-16 | 1.087E-16 | 1.113E-16 | 1.205E-16 | 1.313E-16 | 1.830E-16 | 2.764E-16 | 3.945E-16 | 5.402E-16 | 6.675E-16 | 7.150E-16 | 9.215E-16 | 1.162E-15 |
| pb209 | 7.867E-13 | 7.868E-13 | 7.865E-13 | 7.859E-13 | 7.861E-13 | 7.872E-13 | 7.935E-13 | 8.021E-13 | 8.110E-13 | 8.222E-13 | 8.306E-13 | 8.324E-13 | 8.459E-13 | 8.591E-13 |
| pb210 | 1.383E-14 | 1.382E-14 | 1.382E-14 | 1.381E-14 | 1.378E-14 | 1.375E-14 | 1.364E-14 | 1.361E-14 | 1.376E-14 | 1.413E-14 | 1.458E-14 | 1.476E-14 | 1.570E-14 | 1.700E-14 |
| pb211 | 2.303E-12 | 2.303E-12 | 2.306E-12 | 2.349E-12 | 2.556E-12 | 2.836E-12 | 4.225E-12 | 5.940E-12 | 7.677E-12 | 9.439E-12 | 1.076E-11 | 1.100E-11 | 1.301E-11 | 1.483E-11 |
| pb212 | 5.253E-08 | 5.251E-08 | 5.289E-08 | 5.517E-08 | 6.375E-08 | 7.357E-08 | 1.183E-07 | 1.873E-07 | 2.551E-07 | 3.176E-07 | 3.594E-07 | 3.730E-07 | 4.191E-07 | 4.579E-07 |
| pb214 | 7.140E-14 | 7.147E-14 | 7.171E-14 | 7.340E-14 | 7.947E-14 | 8.662E-14 | 1.207E-13 | 1.823E-13 | 2.603E-13 | 3.564E-13 | 4.404E-13 | 4.717E-13 | 6.080E-13 | 7.667E-13 |
| bi207 | 4.439E-21 | 4.438E-21 | 4.437E-21 | 4.433E-21 | 4.420E-21 | 4.403E-21 | 4.336E-21 | 4.242E-21 | 4.150E-21 | 4.060E-21 | 3.994E-21 | 3.971E-21 | 3.885E-21 | 3.801E-21 |
| bi210 | 1.213E-13 | 1.213E-13 | 1.212E-13 | 1.211E-13 | 1.209E-13 | 1.206E-13 | 1.196E-13 | 1.194E-13 | 1.207E-13 | 1.240E-13 | 1.279E-13 | 1.295E-13 | 1.378E-13 | 1.491E-13 |
| bi211 | 3.020E-11 | 3.020E-11 | 3.024E-11 | 3.081E-11 | 3.352E-11 | 3.719E-11 | 5.542E-11 | 7.790E-11 | 1.007E-10 | 1.238E-10 | 1.412E-10 | 1.442E-10 | 1.706E-10 | 1.945E-10 |
| bi212 | 4.720E-07 | 4.740E-07 | 4.752E-07 | 4.956E-07 | 5.727E-07 | 6.610E-07 | 1.063E-06 | 1.683E-06 | 2.292E-06 | 2.854E-06 | 3.229E-06 | 3.351E-06 | 3.765E-06 | 4.114E-06 |
| bi213 | 2.761E-12 | 2.761E-12 | 2.760E-12 | 2.758E-12 | 2.758E-12 | 2.762E-12 | 2.784E-12 | 2.815E-12 | 2.848E-12 | 2.885E-12 | 2.915E-12 | 2.921E-12 | 2.968E-12 | 3.015E-12 |
| bi214 | 2.903E-13 | 2.905E-13 | 2.915E-13 | 2.984E-13 | 3.231E-13 | 3.521E-13 | 4.909E-13 | 7.413E-13 | 1.058E-12 | 1.449E-12 | 1.790E-12 | 1.918E-12 | 2.472E-12 | 3.117E-12 |
| po209 | 8.113E-20 | 8.113E-20 | 8.113E-20 | 8.110E-20 | 8.102E-20 | 8.093E-20 | 8.055E-20 | 8.000E-20 | 7.946E-20 | 7.892E-20 | 7.853E-20 | 7.839E-20 | 7.786E-20 | 7.733E-20 |
| po210 | 1.420E-12 | 1.422E-12 | 1.428E-12 | 1.450E-12 | 1.500E-12 | 1.540E-12 | 1.614E-12 | 1.633E-12 | 1.644E-12 | 1.675E-12 | 1.715E-12 | 1.732E-12 | 1.827E-12 | 1.960E-12 |
| po211 | 9.403E-14 | 9.402E-14 | 9.415E-14 | 9.593E-14 | 1.044E-13 | 1.158E-13 | 1.725E-13 | 2.425E-13 | 3.134E-13 | 3.854E-13 | 4.395E-13 | 4.490E-13 | 5.313E-13 | 6.054E-13 |
| po212 | 9.579E-07 | 9.619E-07 | 9.645E-07 | 1.006E-06 | 1.162E-06 | 1.342E-06 | 2.157E-06 | 3.415E-06 | 4.652E-06 | 5.792E-06 | 6.553E-06 | 6.801E-06 | 7.642E-06 | 8.350E-06 |
| po213 | 3.327E-11 | 3.327E-11 | 3.326E-11 | 3.323E-11 | 3.324E-11 | 3.329E-11 | 3.356E-11 | 3.392E-11 | 3.433E-11 | 3.477E-11 | 3.513E-11 | 3.521E-11 | 3.577E-11 | 3.633E-11 |
| po214 | 1.178E-12 | 1.172E-12 | 1.161E-12 | 1.146E-12 | 1.194E-12 | 1.291E-12 | 1.798E-12 | 2.715E-12 | 3.876E-12 | 5.307E-12 | 6.558E-12 | 7.024E-12 | 9.053E-12 | 1.142E-11 |
| po215 | 3.377E-11 | 3.377E-11 | 3.381E-11 | 3.445E-11 | 3.748E-11 | 4.159E-11 | 6.196E-11 | 8.710E-11 | 1.126E-10 | 1.384E-10 | 1.578E-10 | 1.613E-10 | 1.908E-10 | 2.174E-10 |
| po216 | 1.153E-06 | 1.154E-06 | 1.160E-06 | 1.211E-06 | 1.400E-06 | 1.615E-06 | 2.598E-06 | 4.112E-06 | 5.602E-06 | 6.974E-06 | 7.891E-06 | 8.189E-06 | 9.202E-06 | 1.005E-05 |
| po218 | 8.300E-13 | 8.307E-13 | 8.335E-13 | 8.533E-13 | 9.238E-13 | 1.007E-12 | 1.404E-12 | 2.119E-12 | 3.025E-12 | 4.143E-12 | 5.119E-12 | 5.483E-12 | 7.067E-12 | 8.912E-12 |
| at217 | 2.868E-11 | 2.868E-11 | 2.867E-11 | 2.865E-11 | 2.865E-11 | 2.870E-11 | 2.892E-11 | 2.924E-11 | 2.959E-11 | 2.997E-11 | 3.028E-11 | 3.035E-11 | 3.083E-11 | 3.132E-11 |
| at218 | 1.865E-16 | 1.867E-16 | 1.873E-16 | 1.917E-16 | 2.076E-16 | 2.262E-16 | 3.154E-16 | 4.762E-16 | 6.798E-16 | 9.309E-16 | 1.150E-15 | 1.232E-15 | 1.588E-15 | 2.003E-15 |
| rn217 | 2.200E-15 | 2.200E-15 | 2.199E-15 | 2.198E-15 | 2.201E-15 | 2.219E-15 | 2.299E-15 | 2.243E-15 | 2.270E-15 | 2.299E-15 | 2.328E-15 | 2.365E-15 | 2.402E-15 | 2.402E-15 |
| rn218 | 1.065E-13 | 9.993E-14 | 8.654E-14 | 4.936E-14 | 1.011E-14 | 1.378E-15 | 6.326E-19 | 5.035E-19 | 7.188E-19 | 9.843E-19 | 1.216E-18 | 1.303E-18 | 1.679E-18 | 2.117E-18 |
| rn219 | 3.116E-11 | 3.115E-11 | 3.119E-11 | 3.178E-11 | 3.458E-11 | 3.837E-11 | 5.717E-11 | 8.036E-11 | 1.039E-10 | 1.277E-10 | 1.456E-10 | 1.488E-10 | 1.760E-10 | 2.006E-10 |
| rn220 | 1.070E-06 | 1.070E-06 | 1.076E-06 | 1.123E-06 | 1.298E-06 | 1.498E-06 | 2.409E-06 | 3.813E-06 | 5.195E-06 | 6.467E-06 | 7.317E-06 | 7.594E-06 | 8.533E-06 | 9.323E-06 |
| rn222 | 7.590E-13 | 7.593E-13 | 7.620E-13 | 7.802E-13 | 8.448E-13 | 9.207E-13 | 1.283E-12 | 1.938E-12 | 2.767E-12 | 3.788E-12 | 4.681E-12 | 5.014E-12 | 6.462E-12 | 8.149E-12 |
| fr221 | 2.594E-11 | 2.595E-11 | 2.594E-11 | 2.592E-11 | 2.592E-11 | 2.596E-11 | 2.617E-11 | 2.645E-11 | 2.677E-11 | 2.712E-11 | 2.739E-11 | 2.745E-11 | 2.789E-11 | 2.833E-11 |
| fr223 | 2.730E-14 | 2.741E-14 | 2.764E-14 | 2.855E-14 | 3.110E-14 | 3.428E-14 | 4.764E-14 | 6.698E-14 | 8.656E-14 | 1.064E-13 | 1.213E-13 | 1.264E-13 | 1.467E-13 | 1.671E-13 |
| ra222 | 9.790E-14 | 9.188E-14 | 7.957E-14 | 4.538E-14 | 9.296E-15 | 1.267E-16 | 2.730E-19 | 1.453E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ra223 | 2.678E-11 | 2.678E-11 | 2.682E-11 | 2.732E-11 | 2.973E-11 | 3.298E-11 | 4.914E-11 | 6.908E-11 | 8.928E-11 | 1.098E-10 | 1.252E-10 | 1.279E-10 | 1.513E-10 | 1.724E-10 |
| ra224 | 9.668E-07 | 9.669E-07 | 9.724E-07 | 1.015E-06 | 1.173E-06 | 1.354E-06 | 2.177E-06 | 3.447E-06 | 4.695E-06 | 5.846E-06 | 6.614E-06 | 6.864E-06 | 7.713E-06 | 8.427E-06 |
| ra225 | 4.714E-13 | 4.714E-13 | 4.713E-13 | 4.713E-13 | 4.717E-13 | 4.725E-13 | 4.760E-13 | 4.812E-13 | 4.870E-13 | 4.933E-13 | 4.983E-13 | 4.997E-13 | 5.075E-13 | 5.154E-13 |
| ra226 | 6.614E-13 | 6.634E-13 | 6.679E-13 | 6.854E-13 | 7.361E-13 | 8.023E-13 | 1.118E-12 | 1.689E-12 | 2.411E-12 | 3.301E-12 | 4.079E-12 | 4.370E-12 | 5.632E-12 | 7.102E-12 |
| ra228 | 6.691E-18 | 6.699E-18 | 6.716E-18 | 6.785E-18 | 6.977E-18 | 7.214E-18 | 8.184E-18 | 9.518E-18 | 1.079E-17 | 1.202E-17 | 1.291E-17 | 1.320E-17 | 1.434E-17 | 1.545E-17 |
| ac225 | 2.365E-11 | 2.364E-11 | 2.364E-11 | 2.362E-11 | 2.363E-11 | 2.366E-11 | 2.385E-11 | 2.411E-11 | 2.440E-11 | 2.472E-11 | 2.497E-11 | 2.502E-11 | 2.543E-11 | 2.582E-11 |
| ac226 | 1.144E-09 | 1.056E-09 | 8.827E-10 | 4.396E-10 | 6.242E-21 | 5.495E-22 | 2.198E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ac227 | 4.041E-13 | 4.056E-13 | 4.091E-13 | 4.225E-13 | 4.602E-13 | 5.073E-13 | 7.051E-13 | 9.914E-13 | 1.281E-12 | 1.575E-12 | 1.796E-12 | 1.871E-12 | 2.171E-12 | 2.474E-12 |
| ac228 | 8.141E-16 | 8.148E-16 | 8.172E-16 | 8.256E-16 | 8.489E-16 | 8.778E-16 | 9.958E-16 | 1.158E-15 | 1.313E-15 | 1.463E-15 | 1.570E-15 | 1.606E-15 | 1.745E-15 | 1.880E-15 |
| th226 | 9.456E-14 | 8.874E-14 | 7.685E-14 | 4.383E-14 | 8.979E-15 | 1.224E-15 | 2.656E-19 | 1.404E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| th227 | 2.744E-11 | 2.755E-11 | 2.780E-11 | 2.876E-11 | 3.145E-11 | 3.482E-11 | 5.055E-11 | 7.106E-11 | 9.184E-11 | 1.129E-10 | 1.288E-10 | 1.324E-10 | 1.557E-10 | 1.774E-10 |
| th228 | 9.200E-07 | 9.252E-07 | 9.368E-07 | 9.824E-07 | 1.114E-06 | 1.286E-06 | 2.072E-06 | 3.281E-06 | 4.468E-06 | 5.561E-06 | 6.289E-06 | 6.520E-06 | 7.336E-06 | 8.014E-06 |
| th229 | 2.091E-11 | 2.091E-11 | 2.091E-11 | 2.092E-11 | 2.094E-11 | 2.098E-11 | 2.113E-11 | 2.136E-11 | 2.161E-11 | 2.189E-11 | 2.211E-11 | 2.219E-11 | 2.252E-11 | 2.287E-11 |
| th230 | 8.155E-10 | 8.170E-10 | 8.204E-10 | 8.338E-10 | 8.716E-10 | 9.193E-10 | 1.128E-09 | 1.455E-09 | 1.814E-09 | 2.206E-09 | 2.518E-09 | 2.629E-09 | 3.084E-09 | 3.571E-09 |
| th231 | 3.606E-08 | 3.606E-08 | 3.606E-08 | 3.606E-08 | 3.606E-08 | 3.607E-08 | 3.608E-08 | 3.610E-08 | 3.611E-08 | 3.613E-08 | 3.614E-08 | 3.615E-08 | 3.616E-08 | 3.618E-08 |
| th232 | 7.098E-15 | 7.100E-15 | 7.104E-15 | 7.119E-15 | 7.161E-15 | 7.213E-15 | 7.431E-15 | 7.745E-15 | 8.060E-15 | 8.376E-15 | 8.613E-15 | 8.694E-15 | 9.012E-15 | 9.331E-15 |
| th234 | 1.841E-06 | 1.841E-06 | 1.841E-06 | 1.841E-06 | 1.841E-06 | 1.841E-06 | 1.842E-06 | 1.841E-06 | 1.841E-06 | 1.841E-06 | 1.842E-06 | 1.841E-06 | 1.841E-06 | 1.841E-06 |

1

5 more years for cooling used fuel material actinides page 20

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pa230 | 5.783E-15 | 5.340E-15 | 4.464E-15 | 2.223E-15 | 3.156E-16 | 2.779E-17 | 1.077E-21 | 5.217E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pa231 | 5.458E-10 | 5.459E-10 | 5.462E-10 | 5.474E-10 | 5.507E-10 | 5.547E-10 | 5.711E-10 | 5.947E-10 | 6.182E-10 | 6.418E-10 | 6.594E-10 | 6.655E-10 | 6.891E-10 | 7.127E-10 |
| pa232 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.856E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 | 5.855E-13 |
| pa233 | 4.161E-06 | 4.161E-06 | 4.161E-06 | 4.161E-06 | 4.164E-06 | 4.166E-06 | 4.182E-06 | 4.216E-06 | 4.256E-06 | 4.305E-06 | 4.340E-06 | 4.355E-06 | 4.425E-06 | 4.497E-06 |
| pa234m | 2.293E-05 | 2.293E-05 | 2.293E-05 | 2.293E-05 | 2.293E-05 | 2.293E-05 | 2.294E-05 | 2.293E-05 | 2.293E-05 | 2.293E-05 | 2.294E-05 | 2.293E-05 | 2.293E-05 | 2.293E-05 |
| pa234 | 8.456E-08 | 8.452E-08 | 8.457E-08 | 8.457E-08 | 8.456E-08 | 8.456E-08 | 8.462E-08 | 8.457E-08 | 8.457E-08 | 8.457E-08 | 8.460E-08 | 8.457E-08 | 8.457E-08 | 8.457E-08 |
| u232 | 8.784E-14 | 8.241E-14 | 7.130E-14 | 4.070E-14 | 8.139E-15 | 1.116E-16 | 2.467E-19 | 1.287E-24 | 6.115E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| u232 | 3.436E-06 | 3.446E-06

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| np236 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 | 1.046E-10 |
| np237 | 4.964E-05 | 4.964E-05 | 4.964E-05 | 4.965E-05 | 4.968E-05 | 4.972E-05 | 4.991E-05 | 5.028E-05 | 5.076E-05 | 5.134E-05 | 5.183E-05 | 5.201E-05 | 5.278E-05 | 5.363E-05 |
| np238 | 1.471E-05 | 1.471E-05 | 1.471E-05 | 1.470E-05 | 1.469E-05 | 1.468E-05 | 1.463E-05 | 1.456E-05 | 1.449E-05 | 1.442E-05 | 1.437E-05 | 1.435E-05 | 1.428E-05 | 1.421E-05 |
| np239 | 1.965E-03 | 1.965E-03 | 1.965E-03 | 1.965E-03 | 1.965E-03 | 1.965E-03 | 1.965E-03 | 1.964E-03 | 1.964E-03 | 1.964E-03 | 1.964E-03 | 1.964E-03 | 1.964E-03 | 1.964E-03 |
| np240m | 1.033E-10 | 1.034E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 | 1.033E-10 |
| np240 | 2.098E-13 | 2.099E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 | 2.098E-13 |
| pu236 | 2.106E-04 | 2.104E-04 | 2.097E-04 | 2.073E-04 | 2.007E-04 | 1.927E-04 | 1.627E-04 | 1.277E-04 | 1.002E-04 | 7.858E-05 | 6.560E-05 | 6.167E-05 | 4.839E-05 | 3.798E-05 |
| pu237 | 1.000E-06 | 9.705E-07 | 9.064E-07 | 6.949E-07 | 3.301E-07 | 1.307E-07 | 2.719E-09 | 1.064E-11 | 4.164E-14 | 1.605E-16 | 2.579E-18 | 6.280E-19 | 2.458E-21 | 9.617E-24 |
| pu238 | 1.328E+00 | 1.330E+00 | 1.333E+00 | 1.344E+00 | 1.371E+00 | 1.397E+00 | 1.452E+00 | 1.466E+00 | 1.460E+00 | 1.449E+00 | 1.441E+00 | 1.438E+00 | 1.427E+00 | 1.416E+00 |
| pu239 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.330E-01 | 5.329E-01 | 5.329E-01 |
| pu240 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.051E+00 | 1.052E+00 | 1.052E+00 | 1.052E+00 | 1.052E+00 | 1.052E+00 |
| pu241 | 2.469E-01 | 2.469E-01 | 2.467E-01 | 2.462E-01 | 2.446E-01 | 2.426E-01 | 2.345E-01 | 2.234E-01 | 2.128E-01 | 2.027E-01 | 1.956E-01 | 1.932E-01 | 1.840E-01 | 1.753E-01 |
| pu242 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 | 2.049E-03 |
| pu243 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 | 8.312E-12 |
| pu244 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 | 5.174E-10 |
| pu246 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.817E-17 | 1.816E-17 | 1.816E-17 | 1.816E-17 | 1.816E-17 | 1.816E-17 | 1.816E-17 |
| am241 | 6.781E-01 | 6.804E-01 | 6.855E-01 | 7.053E-01 | 7.606E-01 | 8.289E-01 | 1.108E+00 | 1.491E+00 | 1.856E+00 | 2.203E+00 | 2.450E+00 | 2.532E+00 | 2.845E+00 | 3.143E+00 |
| am242m | 2.680E-04 | 2.680E-04 | 2.679E-04 | 2.678E-04 | 2.675E-04 | 2.666E-04 | 2.453E-04 | 2.640E-04 | 2.640E-04 | 2.627E-04 | 2.618E-04 | 2.614E-04 | 2.601E-04 | 2.589E-04 |
| am242 | 7.493E-04 | 7.493E-04 | 7.492E-04 | 7.490E-04 | 7.485E-04 | 7.479E-04 | 7.454E-04 | 7.417E-04 | 7.381E-04 | 7.345E-04 | 7.318E-04 | 7.309E-04 | 7.273E-04 | 7.237E-04 |
| am243 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.635E-02 | 2.634E-02 | 2.634E-02 | 2.634E-02 | 2.634E-02 | 2.634E-02 |
| am244 | 8.971E-14 | 8.967E-14 | 8.964E-14 | 8.926E-14 | 8.834E-14 | 8.721E-14 | 8.264E-14 | 7.652E-14 | 7.084E-14 | 6.558E-14 | 6.192E-14 | 6.072E-14 | 5.622E-14 | 5.205E-14 |
| am245 | 1.647E-12 | 1.640E-12 | 1.624E-12 | 1.563E-12 | 1.406E-12 | 1.232E-12 | 7.090E-13 | 3.216E-13 | 1.459E-13 | 6.601E-14 | 3.662E-14 | 2.994E-14 | 1.358E-14 | 6.159E-15 |
| am246m | 1.101E-16 | 1.103E-16 | 1.103E-16 | 1.102E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 | 1.101E-16 |
| cm240 | 3.054E-10 | 2.901E-10 | 2.585E-10 | 1.649E-10 | 4.688E-11 | 9.792E-12 | 1.405E-14 | 1.197E-18 | 1.020E-22 | 8.474E-27 | 7.861E-30 | 7.221E-31 | 0.000E+00 | 0.000E+00 |
| cm241 | 3.469E-08 | 3.326E-08 | 3.089E-08 | 2.088E-08 | 7.418E-09 | 2.044E-09 | 9.334E-12 | 4.170E-15 | 1.863E-18 | 8.151E-22 | 2.599E-24 | 3.642E-25 | 1.627E-28 | 7.269E-32 |
| cm242 | 3.661E+01 | 3.630E+01 | 3.561E+01 | 3.306E+01 | 2.684E+01 | 2.071E+01 | 7.013E+00 | 1.500E+00 | 3.327E-01 | 8.532E-02 | 3.996E-02 | 3.315E-02 | 2.204E-02 | 1.961E-02 |
| cm243 | 3.803E-02 | 3.803E-02 | 3.802E-02 | 3.797E-02 | 3.785E-02 | 3.770E-02 | 3.708E-02 | 3.621E-02 | 3.536E-02 | 3.452E-02 | 3.392E-02 | 3.371E-02 | 3.292E-02 | 3.214E-02 |
| cm244 | 3.813E+00 | 3.812E+00 | 3.811E+00 | 3.804E+00 | 3.784E+00 | 3.760E+00 | 3.661E+00 | 3.523E+00 | 3.391E+00 | 3.264E+00 | 3.172E+00 | 3.141E+00 | 3.023E+00 | 2.910E+00 |
| cm245 | 6.468E-04 | 6.468E-04 | 6.468E-04 | 6.468E-04 | 6.468E-04 | 6.468E-04 | 6.467E-04 | 6.467E-04 | 6.466E-04 | 6.466E-04 | 6.465E-04 | 6.465E-04 | 6.465E-04 | 6.464E-04 |
| cm246 | 5.995E-05 | 5.995E-05 | 5.995E-05 | 5.995E-05 | 5.995E-05 | 5.994E-05 | 5.994E-05 | 5.993E-05 | 5.992E-05 | 5.991E-05 | 5.990E-05 | 5.990E-05 | 5.989E-05 | 5.989E-05 |
| cm247 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 | 2.313E-10 |
| cm248 | 4.949E-10 | 4.949E-10 | 4.949E-10 | 4.949E-10 | 4.949E-10 | 4.949E-10 | 4.950E-10 | 4.950E-10 | 4.950E-10 | 4.951E-10 | 4.951E-10 | 4.951E-10 | 4.951E-10 | 4.951E-10 |
| cm249 | 3.798E-17 | 3.514E-17 | 2.949E-17 | 1.492E-17 | 2.217E-18 | 2.064E-19 | 1.010E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cm250 | 5.871E-14 | 5.871E-14 | 5.871E-14 | 5.871E-14 | 5.871E-14 | 5.871E-14 | 5.870E-14 | 5.870E-14 | 5.869E-14 | 5.869E-14 | 5.869E-14 | 5.868E-14 | 5.868E-14 | 5.867E-14 |
| bk247 | 7.210E-17 | 7.210E-17 | 7.210E-17 | 7.210E-17 | 7.210E-17 | 7.209E-17 | 7.207E-17 | 7.203E-17 | 7.199E-17 | 7.196E-17 | 7.193E-17 | 7.192E-17 | 7.189E-17 | 7.185E-17 |
| bk248 | 4.607E-13 | 4.605E-13 | 4.601E-13 | 4.584E-13 | 4.537E-13 | 4.479E-13 | 4.244E-13 | 3.930E-13 | 3.638E-13 | 3.368E-13 | 3.180E-13 | 3.118E-13 | 2.887E-13 | 2.673E-13 |

1

5 more years for cooling used fuel material actinides page 21

0 nuclide thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bk249 | 1.164E-08 | 1.159E-08 | 1.148E-08 | 1.105E-08 | 9.940E-09 | 8.710E-09 | 5.013E-09 | 2.274E-09 | 1.031E-09 | 4.667E-10 | 2.589E-10 | 2.117E-10 | 9.602E-11 | 4.355E-11 |
| bk250 | 1.777E-13 | 1.768E-13 | 1.748E-13 | 1.673E-13 | 1.479E-13 | 1.269E-13 | 6.684E-14 | 2.672E-14 | 1.070E-14 | 4.286E-15 | 2.183E-15 | 1.736E-15 | 7.172E-16 | 3.102E-16 |
| bk251 | 7.312E-17 | 7.061E-17 | 6.529E-17 | 4.814E-17 | 2.051E-17 | 7.087E-18 | 8.351E-20 | 1.449E-22 | 2.514E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf248 | 3.271E-12 | 3.257E-12 | 3.227E-12 | 3.112E-12 | 2.811E-12 | 2.476E-12 | 1.457E-12 | 6.825E-13 | 3.196E-13 | 1.494E-13 | 8.487E-14 | 6.995E-14 | 3.276E-14 | 1.534E-14 |
| cf249 | 5.370E-09 | 5.394E-09 | 5.448E-09 | 5.653E-09 | 6.188E-09 | 6.779E-09 | 8.550E-09 | 9.852E-09 | 1.043E-08 | 1.068E-08 | 1.077E-08 | 1.078E-08 | 1.082E-08 | 1.082E-08 |
| cf250 | 6.273E-08 | 6.271E-08 | 6.267E-08 | 6.251E-08 | 6.207E-08 | 6.152E-08 | 5.929E-08 | 5.623E-08 | 5.333E-08 | 5.057E-08 | 4.862E-08 | 4.796E-08 | 4.549E-08 | 4.314E-08 |
| cf251 | 4.227E-10 | 4.227E-10 | 4.227E-10 | 4.227E-10 | 4.227E-10 | 4.226E-10 | 4.224E-10 | 4.221E-10 | 4.217E-10 | 4.214E-10 | 4.212E-10 | 4.211E-10 | 4.208E-10 | 4.204E-10 |
| cf252 | 7.184E-08 | 7.174E-08 | 7.151E-08 | 7.061E-08 | 6.817E-08 | 6.526E-08 | 5.434E-08 | 4.182E-08 | 3.219E-08 | 2.475E-08 | 2.036E-08 | 1.905E-08 | 1.466E-08 | 1.128E-08 |
| cf253 | 4.661E-15 | 4.312E-15 | 3.619E-15 | 1.831E-15 | 2.720E-16 | 2.532E-17 | 1.240E-21 | 8.395E-28 | 5.684E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cf254 | 5.312E-11 | 5.192E-11 | 4.931E-11 | 4.035E-11 | 2.302E-11 | 1.144E-11 | 6.162E-13 | 9.410E-15 | 1.437E-16 | 2.169E-18 | 9.614E-20 | 3.313E-20 | 5.058E-22 | 7.725E-24 |
| es252 | 1.337E-16 | 1.333E-16 | 1.324E-16 | 1.291E-16 | 1.201E-16 | 1.098E-16 | 7.549E-17 | 4.415E-17 | 2.582E-17 | 1.508E-17 | 1.011E-17 | 8.820E-18 | 5.158E-18 | 3.017E-18 |
| es253 | 4.907E-12 | 4.603E-12 | 3.985E-12 | 2.271E-12 | 4.623E-13 | 6.220E-14 | 1.235E-17 | 5.473E-23 | 2.347E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| es254 | 9.803E-13 | 9.754E-13 | 9.644E-13 | 9.229E-13 | 8.159E-13 | 6.999E-13 | 1.686E-13 | 1.473E-13 | 5.882E-14 | 2.344E-14 | 1.183E-14 | 9.362E-15 | 3.740E-15 | 1.494E-15 |
| es255 | 1.491E-15 | 1.440E-15 | 1.331E-15 | 9.815E-16 | 4.181E-16 | 1.445E-16 | 1.703E-18 | 2.954E-21 | 5.125E-24 | 8.738E-27 | 7.658E-29 | 1.516E-29 | 2.630E-32 | 0.000E+00 |
| total | 4.433E+01 | 4.403E+01 | 4.334E+01 | 4.081E+01 | 3.466E+01 | 2.860E+01 | 1.512E+01 | 9.857E+00 | 8.905E+00 | 8.856E+00 | 8.950E+00 | 8.989E+00 | 9.152E+00 | 9.314E+00 |

1

5 more years for cooling used fuel material actinides page 22

0 element thermal power, watts

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tl | 2.388E-07 | 2.398E-07 | 2.404E-07 | 2.507E-07 | 2.897E-07 | 3.344E-07 | 5.378E-07 | 8.512E-07 | 1.160E-06 | 1.444E-06 | 1.634E-06 | 1.695E-06 | 1.905E-06 | 2.081E-06 |
| pb | 5.253E-08 | 5.251E-08 | 5.289E-08 | 5.517E-08 | 6.375E-08 | 7.357E-08 | 1.183E-07 | 1.873E-07 | 2.551E-07 | 3.176E-07 | 3.594E-07 | 3.730E-07 | 4.191E-07 | 4.579E-07 |
| bi | 4.720E-07 | 4.740E-07 | 4.752E-07 | 4.957E-07 | 5.728E-07 | 6.610E-07 | 1.063E-06 | 1.683E-06 | 2.292E-06 | 2.854E-06 | 3.229E-06 | 3.351E-06 | 3.766E-06 | 4.114E-06 |
| po | 2.111E-06 | 2.116E-06 | 2.125E-06 | 2.217E-06 | 2.562E-06 | 2.957E-06 | 4.755E-06 | 7.527E-06 | 1.025E-05 | 1.277E-05 | 1.444E-05 | 1.499E-05 | 1.684E-05 | 1.840E-05 |
| at | 2.868E-11 | 2.868E-11 | 2.867E-11 | 2.865E-11 | 2.865E-11 | 2.870E-11 | 2.893E-11 | 2.924E-11 | 2.959E-11 | 2.997E-11 | 3.028E-11 | 3.035E-11 | 3.084E-11 | 3.132E-11 |
| rn | 1.070E-06 | 1.070E-06 | 1.076E-06 | 1.123E-06 | 1.298E-06 | 1.498E-06 | 2.409E-06 | 3.813E-06 | 5.195E-06 | 6.467E-06 | 7.318E-06 | 7.594E-06 | 8.534E-06 | 9.323E-06 |
| fr | 2.597E-11 | 2.597E-11 | 2.597E-11 | 2.594E-11 | 2.595E-11 | 2.600E-11 | 2.622E-11 | 2.652E-11 | 2.685E-11 | 2.722E-11 | 2.751E-11 | 2.758E-11 | 2.804E-11 | 2.850E-11 |
| ra | 9.668E-07 | 9.669E-07 | 9.725E-07 | 1.015E-06 | 1.173E-06 | 1.354E-06 | 2.178E-06 | 3.447E-06 | 4.696E-06 | 5.846E-06 | 6.614E-06 | 6.864E-06 | 7.713E-06 | 8.427E-06 |
| ac | 2.405E-11 | 2.405E-11 | 2.405E-11 | 2.404E-11 | 2.409E-11 | 2.417E-11 | 2.456E-11 | 2.510E-11 | 2.568E-11 | 2.629E-11 | 2.677E-11 | 2.690E-11 | 2.760E-11 | 2.830E-11 |
| th | 2.798E-06 | 2.803E-06 | 2.815E-06 | 2.861E-06 | 2.993E-06 | 3.165E-06 | 3.952E-06 | 5.160E-06 | 6.348E-06 | 7.441E-06 | 8.170E-06 | 8.400E-06 | 9.217E-06 | 9.895E-06 |
| pa | 2.717E-05 | 2.718E-05 | 2.718E-05 | 2.718E-05 | 2.718E-05 | 2.718E-05 | 2.721E-05 | 2.723E-05 | 2.727E-05 | 2.732E-05 | 2.736E-05 | 2.737E-05 | 2.744E-05 | 2.751E-05 |
| u | 5.092E-04 | 5.092E-04 | 5.090E-04 | 5.085E-04 | 5.069E-04 | 5.050E-04 | 4.972E-04 | 4.864E-04 | 4.760E-04 | 4.661E-04 | 4.591E-04 | 4.567E-04 | 4.477E-04 | 4.393E-04 |
| np | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.029E-03 | 2.030E-03 | 2.030E-03 | 2.030E-03 | 2.030E-03 | 2.031E-03 | 2.031E-03 |
| pu | 3.161E+00 | 3.163E+00 | 3.166E+00 | 3.176E+00 | 3.202E+00 | 3.226E+00 | 3.273E+00 | 3.276E+00 | 3.259E+00 | 3.239E+00 | 3.224E+00 | 3.219E+00 | 3.198E+00 | 3.179E+00 |
| am | 7.055E-01 | 7.078E-01 | 7.129E-01 | 7.327E-01 | 7.880E-01 | 8.563E-01 | 1.136E+00 | 1.519E+00 | 1.888E+00 | 2.230E+00 | 2.477E+00 | 2.559E+00 | 2.872E+00 | 3.170E+00 |
| cm | 4.046E+01 | 4.015E+01 | 3.946E+01 | 3.690E+01 | 3.067E+01 | 2.451E+01 | 1.071E+01 | 5.060E+00 | 3.760E+00 | 3.384E+00 | 3.246E+00 | 3.209E+00 | 3.079E+00 | 2.962E+00 |
| bk | 1.164E-08 | 1.159E-08 | 1.148E-08 | 1.105E-08 | 9.940E-09 | 8.710E-09 | 5.014E-09 | 2.274E-09 | 1.032E-09 | 4.671E-10 | 2.593E-10 | 2.120E-10 | 9.631E-11 | 4.382E-11 |
| cf | 1.404E-07 | 1.403E-07 | 1.401E-07 | 1.392E-07 | 1.369E-07 | 1.340E-07 | 1.226E-07 | 1.083E-07 | 9.637E-08 | 8.643E-08 | 8.017E-08 | 7.822E-08 | 7.139E-08 | 6.567E-08 |
| es | 5.889E-12 | 5.580E-12 | 4.951E-12 | 3.194E-12 | 1.279E-12 | 7.624E-13 | 3.687E-13 | 1.473E-13 | 5.885E-14 | 2.345E-14 | 1.184E-14 | 9.371E-15 | 3.745E-15 | 1.497E-15 |
| totals | 4.433E+01 | 4.403E+01 | 4.334E+01 | 4.081E+01 | 3.466E+01 | 2.860E+01 | 1.512E+01 | 9.857E+00 | 8.905E+00 | 8.856E+00 | 8.950E+00 | 8.989E+00 | 9.152E+00 | 9.314E+00 |

1

5 more years for cooling used fuel material fission products page 23

0 nuclide concentrations, grams

basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.059E-03 | 1.059E-03 | 1.058E-03 | 1.056E-03 | 1.048E-03 | 1.038E-03 | 9.978E-04 | 9.433E-04 | 8.917E-04 | 8.428E-04 | 8.082E-04 | 7.967E-04 | 7.532E-04 | 7.120E-04 |
| he 3 | 6.285E-05 | 6.318E-05 | 6.391E-05 | 6.676E-05 | 7.470E-05 | 8.450E-05 | 1.245E-04 | 1.790E-04 | 2.306E-04 | 2.795E-04 | 3.141E-04 | 3.256E-04 | 3.691E-04 | 4.103E-04 |
| he 4 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 | 2.260E-02 |
| cu 65 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 | 5.618E-09 |
| zn 66 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 | 1.905E-06 |
| zn 67 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 | 5.326E-06 |
| zn 68 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 | 1.066E-05 |
| ga 69 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 | 2.175E-05 |
| zn 70 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 | 5.325E-05 |
| ge 70 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 | 2.174E-07 |
| ga 71 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 | 9.901E-05 |
| ge 71 | 2.307E-17 | 2.044E-17 | 1.556E-17 | 5.383E-18 | 2.757E-19 | 6.822E-21 | 1.112E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 72 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 | 2.543E-04 |
| ge 73 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 | 5.259E-04 |
| ge 73m | 2.071E-19 | 2.035E-19 | 1.958E-19 | 1.683E-19 | 1.103E-19 | 6.512E-20 | 7.208E-21 | 3.086E-22 | 1.322E-23 | 5.611E-25 | 5.363E-26 | 2.403E-26 | 1.029E-27 | 4.406E-29 |
| as 73 | 2.879E-12 | 2.830E-12 | 2.722E-12 | 2.340E-12 | 1.533E-12 | 9.055E-13 | 1.002E-13 | 4.291E-15 | 1.838E-16 | 7.802E-18 | 7.456E-19 | 3.341E-19 | 1.431E-20 | 6.126E-22 |
| ge 74 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 | 1.251E-03 |
| as 74 | 6.389E-14 | 5.910E-14 | 4.958E-14 | 2.505E-14 | 3.705E-15 | 3.431E-16 | 1.643E-20 | 1.077E-26 | 7.064E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 74 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 | 5.470E-09 |
| as 75 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 | 2.514E-03 |
| se 75 | 1.220E-10 | 1.206E-10 | 1.175E-10 | 1.062E-10 | 7.995E-11 | 5.617E-11 | 1.284E-11 | 1.554E-12 | 1.880E-13 | 2.262E-14 | 4.687E-15 | 2.737E-15 | 3.311E-16 | 4.006E-17 |
| ge 76 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 | 5.628E-03 |
| se 76 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 | 9.937E-05 |
| se 77 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 | 1.333E-02 |
| se 78 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 | 3.730E-02 |
| kr 78 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 | 2.807E-15 |
| se 79 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 | 8.160E-02 |
| br 79 | 4.459E-05 | 4.459E-05 | 4.460E-05 | 4.461E-05 | 4.463E-05 | 4.466E-05 | 4.480E-05 | 4.499E-05 | 4.518E-05 | 4.537E-05 | 4.552E-05 | 4.556E-05 | 4.576E-05 | 4.595E-05 |
| se 80 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 | 1.841E-01 |
| kr 80 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 | 6.505E-06 |
| br 81 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 | 3.427E-01 |
| kr 81 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.697E-07 | 5.696E-07 | 5.696E-07 | 5.696E-07 | 5.696E-07 |
| se 82 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 | 4.793E-01 |
| kr 82 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 | 1.172E-02 |
| kr 83 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 | 5.697E-01 |
| kr 83m | 8.733E-13 | 8.594E-13 | 8.288E-13 | 7.200E-13 | 4.856E-13 | 2.973E-13 | 3.825E-14 | 2.032E-15 | 1.080E-16 | 5.691E-18 | 6.387E-19 | 3.023E-19 | 1.606E-20 | 8.534E-22 |
| rb 83 | 1.328E-09 | 1.307E-09 | 1.261E-09 | 1.095E-09 | 7.385E-10 | 4.522E-10 | 5.818E-11 | 3.091E-12 | 1.642E-13 | 8.655E-15 | 9.714E-16 | 4.598E-16 | 2.443E-17 | 1.298E-18 |
| kr 84 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 | 1.226E+00 |
| rb 84 | 1.489E-09 | 1.427E-09 | 1.298E-09 | 8.970E-10 | 3.187E-10 | 8.787E-11 | 4.026E-13 | 1.807E-16 | 8.113E-20 | 3.566E-23 | 1.141E-25 | 1.601E-26 | 7.185E-30 | 3.225E-33 |
| sr 84 | 9.676E-08 | 9.676E-08 | 9.677E-08 | 9.678E-08 | 9.680E-08 | 9.681E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 | 9.682E-08 |
| kr 85 | 2.606E-01 | 2.605E-01 | 2.603E-01 | 2.595E-01 | 2.572E-01 | 2.541E-01 | 2.433E-01 | 2.281E-01 | 2.139E-01 | 2.005E-01 | 1.911E-01 | 1.880E-01 | 1.763E-01 | 1.653E-01 |
| rb 85 | 1.047E+00 | 1.047E+00 | 1.047E+00 | 1.048E+00 | 1.050E+00 | 1.053E+00 | 1.064E+00 | 1.079E+00 | 1.094E+00 | 1.107E+00 | 1.116E+00 | 1.120E+00 | 1.131E+00 | 1.142E+00 |
| sr 85 | 2.389E-10 | 2.339E-10 | 2.229E-10 | 1.849E-10 | 1.095E-10 | 5.704E-11 | 3.735E-12 | 7.546E-14 | 1.524E-15 | 3.047E-17 | 1.664E-18 | 6.156E-19 | 1.244E-20 | 2.513E-22 |
| kr 86 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 | 1.857E+00 |
| rb 86 | 4.109E-08 | 3.814E-08 | 3.226E-08 | 1.682E-08 | 2.718E-09 | 2.809E-10

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 89 | 4.265E+00 | 4.265E+00 | 4.266E+00 | 4.268E+00 | 4.272E+00 | 4.274E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 | 4.276E+00 |
| y 89m | 3.941E-12 | 3.834E-12 | 3.604E-12 | 2.835E-12 | 1.448E-12 | 6.270E-13 | 1.897E-14 | 1.269E-16 | 8.494E-19 | 5.606E-21 | 1.344E-22 | 3.751E-23 | 2.510E-25 | 1.680E-27 |
| sr 90 | 5.000E+00 | 5.000E+00 | 4.998E+00 | 4.993E+00 | 4.976E+00 | 4.957E+00 | 4.874E+00 | 4.758E+00 | 4.645E+00 | 4.534E+00 | 4.454E+00 | 4.426E+00 | 4.321E+00 | 4.218E+00 |
| y 90 | 1.268E-03 | 1.268E-03 | 1.268E-03 | 1.266E-03 | 1.262E-03 | 1.257E-03 | 1.236E-03 | 1.207E-03 | 1.178E-03 | 1.150E-03 | 1.130E-03 | 1.123E-03 | 1.096E-03 | 1.070E-03 |
| zr 90 | 2.599E-01 | 2.606E-01 | 2.621E-01 | 2.679E-01 | 2.840E-01 | 3.039E-01 | 3.866E-01 | 5.025E-01 | 6.156E-01 | 7.264E-01 | 8.070E-01 | 8.342E-01 | 9.394E-01 | 1.042E+00 |
| y 91 | 3.047E-02 | 2.975E-02 | 2.821E-02 | 2.293E-02 | 1.283E-02 | 6.229E-03 | 3.037E-04 | 4.023E-06 | 5.329E-08 | 6.975E-10 | 2.780E-11 | 9.239E-12 | 1.224E-13 | 1.621E-15 |
| zr 91 | 6.214E+00 | 6.215E+00 | 6.216E+00 | 6.222E+00 | 6.232E+00 | 6.238E+00 | 6.244E+00 | 6.245E+00 | 6.245E+00 | 6.245E+00 | 6.245E+00 | 6.245E+00 | 6.245E+00 | 6.245E+00 |
| nb 91 | 1.533E-10 | 1.533E-10 | 1.533E-10 | 1.533E-10 | 1.533E-10 | 1.533E-10 | 1.532E-10 | 1.530E-10 | 1.529E-10 | 1.527E-10 | 1.526E-10 | 1.526E-10 | 1.524E-10 | 1.522E-10 |
| nb 91m | 1.186E-16 | 1.159E-16 | 1.101E-16 | 9.024E-17 | 5.165E-17 | 2.578E-17 | 1.413E-18 | 2.211E-20 | 3.461E-22 | 5.356E-24 | 2.418E-25 | 8.384E-26 | 1.312E-27 | 2.054E-29 |
| zr 92 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 | 7.554E+00 |
| nb 92 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 | 1.339E-08 |
| nb 92m | 1.102E-19 | 9.615E-20 | 7.071E-20 | 2.140E-20 | 7.537E-22 | 1.170E-23 | 3.200E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo 92 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 |
| zr 93 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 | 9.367E+00 |
| nb 93 | 1.489E-06 | 1.492E-06 | 1.498E-06 | 1.520E-06 | 1.586E-06 | 1.671E-06 | 2.076E-06 | 2.786E-06 | 3.645E-06 | 4.649E-06 | 5.485E-06 | 5.787E-06 | 7.055E-06 | 8.448E-06 |
| nb 93m | 8.366E-06 | 8.387E-06 | 8.433E-06 | 8.614E-06 | 9.118E-06 | 9.741E-06 | 1.230E-05 | 1.583E-05 | 1.921E-05 | 2.246E-05 | 2.478E-05 | 2.556E-05 | 2.853E-05 | 3.138E-05 |
| mo 93 | 5.171E-09 | 5.171E-09 | 5.171E-09 | 5.171E-09 | 5.170E-09 | 5.170E-09 | 5.170E-09 | 5.169E-09 | 5.168E-09 | 5.167E-09 | 5.166E-09 | 5.166E-09 | 5.165E-09 | 5.164E-09 |
| zr 94 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 | 1.072E+01 |
| nb 94 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.515E-05 | 4.514E-05 | 4.514E-05 | 4.514E-05 |
| mo 94 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.722E-04 | 1.723E-04 | 1.723E-04 | 1.723E-04 | 1.723E-04 | 1.723E-04 |
| zr 95 | 8.146E-02 | 7.972E-02 | 7.593E-02 | 6.283E-02 | 3.696E-02 | 1.910E-02 | 1.208E-03 | 2.324E-05 | 4.469E-07 | 8.503E-09 | 4.475E-10 | 1.635E-10 | 3.145E-12 | 6.049E-14 |
| nb 95 | 9.189E-02 | 9.003E-02 | 8.598E-02 | 7.180E-02 | 4.305E-02 | 2.256E-02 | 1.452E-03 | 2.889E-05 | 5.562E-07 | 1.058E-08 | 5.405E-10 | 1.972E-10 | 3.910E-12 | 7.528E-14 |
| nb 95m | 5.258E-05 | 5.145E-05 | 4.900E-05 | 4.055E-05 | 2.386E-05 | 1.233E-05 | 7.798E-07 | 1.500E-08 | 2.884E-10 | 5.488E-12 | 2.888E-13 | 1.055E-13 | 2.030E-15 | 3.904E-17 |
| mo 95 | 1.129E+01 | 1.129E+01 | 1.130E+01 | 1.133E+01 | 1.138E+01 | 1.142E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 | 1.146E+01 |
| tc 95 | 8.920E-20 | 8.720E-20 | 8.285E-20 | 6.791E-20 | 3.891E-20 | 1.946E-20 | 1.225E-21 | 2.696E-23 | 5.682E-25 | 1.205E-26 | 6.617E-29 | 1.046E-30 | 0.000E+00 | 0.000E+00 |
| tc 95m | 1.660E-16 | 1.623E-16 | 1.542E-16 | 1.264E-16 | 7.241E-17 | 3.621E-17 | 1.997E-18 | 3.156E-20 | 4.987E-22 | 7.792E-24 | 3.543E-25 | 1.231E-25 | 1.946E-27 | 3.075E-29 |
| zr 96 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 | 1.251E+01 |
| mo 96 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 | 5.197E-01 |
| ru 96 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 | 2.606E-15 |
| mo 97 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 | 1.364E+01 |
| tc 97 | 1.302E-07 | 1.303E-07 | 1.303E-07 | 1.305E-07 | 1.309E-07 | 1.312E-07 | 1.316E-07 | 1.317E-07 | 1.317E-07 | 1.317E-07 | 1.317E-07 | 1.317E-07 | 1.317E-07 | 1.317E-07 |
| tc 97m | 1.526E-09 | 1.503E-09 | 1.452E-09 | 1.271E-09 | 8.749E-10 | 5.498E-10 | 7.882E-11 | 4.889E-13 | 3.032E-15 | 1.886E-17 | 2.351E-18 | 1.158E-15 | 7.180E-17 | 4.453E-18 |
| mo 98 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 | 1.490E+01 |
| tc 98 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 | 1.325E-04 |
| ru 98 | 2.042E-08 | 2.042E-08 | 2.042E-08 | 2.042E-08 | 2.042E-08 | 2.042E-08 | 2.044E-08 | 2.046E-08 | 2.048E-08 | 2.051E-08 | 2.052E-08 | 2.053E-08 | 2.055E-08 | 2.057E-08 |
| tc 99 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 |
| ru 99 | 5.909E-04 | 5.912E-04 | 5.918E-04 | 5.940E-04 | 6.003E-04 | 6.082E-04 | 6.409E-04 | 6.878E-04 | 7.348E-04 | 7.818E-04 | 8.168E-04 | 8.287E-04 | 8.756E-04 | 9.225E-04 |
| mo100 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 | 1.758E+01 |
| ru100 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 | 1.898E+00 |
| ru101 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 | 1.531E+01 |
| rh101 | 7.556E-09 | 7.548E-09 | 7.528E-09 | 7.453E-09 | 7.246E-09 | 6.996E-09 | 6.042E-09 | 4.898E-09 | 3.970E-09 | 3.217E-09 | 2.751E-09 | 2.608E-09 | 2.114E-09 | 1.714E-09 |
| ru102 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 | 1.731E+01 |
| rh102 | 1.240E-05 | 1.232E-05 | 1.213E-05 | 1.144E-05 | 9.716E-06 | 7.925E-06 | 3.383E-06 | 1.003E-06 | 3.001E-07 | 9.165E-08 | 3.937E-08 | 2.986E-08 | 1.115E-08 | 5.230E-09 |
| rh102m | 2.673E-05 | 2.670E-05 | 2.664E-05 | 2.641E-05 | 2.576E-05 | 2.497E-05 | 2.194E-05 | 1.824E-05 | 1.515E-05 | 1.259E-05 | 1.096E-05 | 1.046E-05 | 8.692E-06 | 7.223E-06 |
| pd102 | 1.152E-05 | 1.153E-05 | 1.158E-05 | 1.173E-05 | 1.211E-05 | 1.250E-05 | 1.350E-05 | 1.403E-05 | 1.418E-05 | 1.423E-05 | 1.424E-05 | 1.425E-05 | 1.425E-05 | 1.425E-05 |
| ru103 | 1.524E-02 | 1.471E-02 | 1.359E-02 | 9.976E-03 | 4.199E-03 | 1.430E-03 | 1.582E-05 | 2.510E-08 | 3.982E-11 | 6.206E-14 | 5.087E-16 | 9.844E-17 | 1.561E-19 | 2.477E-22 |
| rh103 | 1.372E+01 | 1.372E+01 | 1.372E+01 | 1.372E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 |
| rh103m | 1.497E-05 | 1.445E-05 | 1.335E-05 | 9.799E-06 | 4.124E-06 | 1.404E-06 | 1.554E-08 | 2.466E-11 | 3.911E-14 | 6.095E-17 | 4.997E-19 | 9.669E-20 | 1.534E-22 | 2.433E-25 |
| pd103 | 8.470E-11 | 7.807E-11 | 6.497E-11 | 3.182E-11 | 4.311E-12 | 3.579E-13 | 1.086E-17 | 3.708E-24 | 1.266E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ru104 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 | 1.651E+01 |
| pd104 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 | 4.746E+00 |
| pd105 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 | 1.376E+01 |

1
5 more years for cooling used fuel material fission products page 25
0
nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag105 | 1.574E-16 | 1.522E-16 | 1.411E-16 | 1.052E-16 | 4.622E-17 | 1.660E-17 | 2.296E-19 | 5.010E-22 | 1.093E-24 | 2.346E-27 | 2.439E-29 | 5.120E-30 | 1.117E-32 | 2.438E-35 |
| ru106 | 3.460E+00 | 3.447E+00 | 3.419E+00 | 3.309E+00 | 3.020E+00 | 2.695E+00 | 1.676E+00 | 8.484E-01 | 4.296E-01 | 2.171E-01 | 1.308E-01 | 1.099E-01 | 5.567E-02 | 2.819E-02 |
| rh106 | 3.239E-06 | 3.227E-06 | 3.200E-06 | 3.098E-06 | 2.827E-06 | 2.523E-06 | 1.568E-06 | 7.942E-07 | 4.022E-07 | 2.033E-07 | 1.224E-07 | 1.029E-07 | 5.212E-08 | 2.639E-08 |
| pd106 | 9.948E+00 | 9.961E+00 | 9.990E+00 | 1.010E+01 | 1.039E+01 | 1.071E+01 | 1.173E+01 | 1.256E+01 | 1.298E+01 | 1.319E+01 | 1.328E+01 | 1.330E+01 | 1.335E+01 | 1.338E+01 |
| cd106 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 | 3.997E-15 |
| pd107 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 | 8.775E+00 |
| ag107 | 1.889E-06 | 1.895E-06 | 1.906E-06 | 1.951E-06 | 2.076E-06 | 2.233E-06 | 2.886E-06 | 3.821E-06 | 4.756E-06 | 5.694E-06 | 6.391E-06 | 6.629E-06 | 7.564E-06 | 8.499E-06 |
| pd108 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 | 6.007E+00 |
| ag108 | 8.358E-15 | 8.358E-15 | 8.358E-15 | 8.357E-15 | 8.356E-15 | 8.353E-15 | 8.344E-15 | 8.331E-15 | 8.318E-15 | 8.305E-15 | 8.295E-15 | 8.291E-15 | 8.278E-15 | 8.265E-15 |
| ag108m | 9.291E-06 | 9.291E-06 | 9.290E-06 | 9.290E-06 | 9.288E-06 | 9.285E-06 | 9.275E-06 | 9.260E-06 | 9.246E-06 | 9.231E-06 | 9.220E-06 | 9.217E-06 | 9.202E-06 | 9.187E-06 |
| cd108 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.819E-05 | 1.820E-05 | 1.820E-05 | 1.820E-05 |
| ag109 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 | 3.091E+00 |
| ag109m | 2.305E-12 | 2.298E-12 | 2.283E-12 | 2.224E-12 | 2.066E-12 | 1.885E-12 | 1.285E-12 | 7.426E-13 | 4.292E-13 | 2.476E-13 | 1.646E-13 | 1.431E-13 | 8.270E-14 | 4.779E-14 |
| cd109 | 2.321E-06 | 2.314E-06 | 2.298E-06 | 2.238E-06 | 2.080E-06 | 1.897E-06 | 1.294E-06 | 7.476E-07 | 4.320E-07 | 2.493E-07 | 1.657E-07 | 1.441E-07 | 8.325E-08 | 4.811E-08 |
| pd110 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 | 1.947E+00 |
| ag110 | 2.967E-10 | 2.951E-10 | 2.914E-10 | 2.776E-10 | 2.423E-10 | 2.046E-10 | 1.008E-10 | 3.660E-11 | 1.329E-11 | 4.814E-12 | 2.263E-12 | 1.748E-12 | 6.348E-13 | 2.305E-13 |
| ag110m | 1.914E-02 | 1.903E-02 | 1.879E-02 | 1.790E-02 | 1.563E-02 | 1.319E-02 | 6.502E-03 | 2.361E-03 | 8.574E-04 | 3.105E-04 | 1.459E-04 | 1.127E-04 | 4.094E-05 | 1.487E-05 |
| cd110 | 1.726E+00 | 1.726E+00 | 1.726E+00 | 1.727E+00 | 1.729E+00 | 1.732E+00 | 1.738E+00 | 1.742E+00 | 1.744E+00 | 1.745E+00 | 1.745E+00 | 1.745E+00 | 1.745E+00 | 1.745E+00 |
| ag111 | 2.206E-12 | 1.831E-12 | 1.205E-12 | 2.365E-13 | 2.477E-15 | 8.493E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd111 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 | 9.217E-01 |
| cd112 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 | 4.337E-01 |
| sn112 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 | 4.629E-11 |
| cd113 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 | 6.325E-03 |
| cd113m | 8.644E-05 | 8.642E-05 | 8.636E-05 | 8.616E-05 | 8.560E-05 | 8.490E-05 | 8.203E-05 | 7.810E-05 | 7.435E-05 | 7.078E-05 | 6.824E-05 | 6.739E-05 | 6.416E-05 | 6.108E-05 |
| in113 | 1.454E-05 | 1.456E-05 | 1.461E-05 | 1.481E-05 | 1.538E-05 | 1.608E-05 | 1.894E-05 | 2.287E-05 | 2.660E-05 | 3.017E-05 | 3.271E-05 | 3.356E-05 | 3.679E-05 | 3.986E-05 |
| in113m | 6.133E-16 | 6.059E-16 | 5.897E-16 | 5.307E-16 | 3.951E-16 | 2.736E-16 | 5.891E-17 | 6.538E-18 | 7.257E-19 | 8.007E-20 | 1.556E-20 | 8.887E-21 | 9.864E-22 | 1.095E-22 |
| sn113 | 1.021E-12 | 1.009E-12 | 9.819E-13 | 8.837E-13 | 6.579E-13 | 4.556E-13 | 9.808E-14 | 1.089E-14 | 1.208E-15 | 1.333E-16 | 1.591E-17 | 1.480E-17 | 1.642E-18 | 1.823E-19 |
| cd114 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 | 4.671E-01 |
| in114 | 1.024E-13 | 9.959E-14 | 9.351E-14 | 7.319E-14 | 3.686E-14 | 1.569E-14 | 4.418E-16 | 2.666E-18 | 1.609E-20 | 9.577E-23 | 2.125E-24 | 5.780E-25 | 3.489E-27 | 2.106E-29 |
| in114m | 6.298E-09 | 6.124E-09 | 5.750E-09 | 4.501E-09 | 2.266E-09 | 9.648E-10 | 2.716E-11 | 1.639E-13 | 9.895E-16 | 5.889E-18 | 1.307E-19 | 3.554E-20 | 2.145E-22 | 1.295E-24 |
| sn114 | 2.407E-06 | 2.407E-06 | 2.407E-06 | 2.408E-06 | 2.411E-06 | 2.412E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 | 2.413E-06 |
| cd115m | 1.441E-05 | 1.397E-05 | 1.303E-05 | 9.923E-06 | 4.631E-06 | 1.793E-06 | 3.395E-08 | 1.162E-10 | 3.974E-13 | 1.339E-15 | 1.946E-17 | 4.580E-18 | 1.567E-20 | 5.360E-23 |
| in115 | 5.267E-02 | 5.267E-02 | 5.267E-02 | 5.268E-02 | 5.268E-02 | 5.268E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 |
| in115m | 6.424E-12 | 6.231E-12 | 5.806E-12 | 4.423E-12 | 2.064E-12 | 7.990E-13 | 1.513E-14 | 1.177E-17 | 1.771E-19 | 5.966E-22 | 8.672E-24 | 2.041E-24 | 6.983E-27 | 2.389E-29 |
| sn115 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 | 6.887E-03 |
| cd116 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 | 1.591E-01 |
| sn116 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 | 5.224E-02 |
| sn117 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 | 1.418E-01 |
| sn117m | 1.212E-10 | 1.094E-10 | 8.700E-11 | 3.566E-11 | 2.935E-12 | 1.310E-13 | 2.972E-19 | 2.476E-27 | 2.064E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn118 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 | 1.219E-01 |
| sn119 | 1.165E-01 | 1.165E-01 | 1.166E-01 | 1.167E-01 | 1.168E-01 | 1.169E-01 | 1.171E-01 | 1.174E-01 | 1.175E-01 | 1.175E-01 | 1.175E-01 | 1.175E-01 | 1.175E-01 | 1.175E-01 |
| sn119m | 9.930E-04 | 9.884E-04 | 9.779E-04 | 9.382E-04 | 8.355E-04 | 7.233E-04 | 3.956E-04 | 1.668E-04 | 7.035E-05 | 2.960E-05 | 1.555E-05 | 1.248E-05 | 5.263E-06 | 2.219E-06 |
| sn120 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 | 1.171E-01 |
| te120 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 | 2.648E-11 |
| sn121 | 5.829E-07 | 5.828E-07 | 5.827E-07 | 5.823E-07 | 5.810E-07 | 5.795E-07 | 5.731E-07 | 5.642E-07 | 5.553E-07 | 5.466E-07 | 5.402E-07 | 5.381E-07 | 5.296E-07 | 5.213E-07 |
| sn121m | 1.069E-02 | 1.069E-02 | 1.069E-02 | 1.068E-02 | 1.066E-02 | 1.063E-02 | 1.051E-02 | 1.035E-02 | 1.019E-02 | 1.003E-02 | 9.910E-03 | 9.870E-03 | 9.716E-03 | 9.564E-03 |
| sb121 | 1.172E-01 | 1.172E-01 | 1.172E-01 | 1.172E-01 | 1.172E-01 | 1.173E-01 | 1.174E-01 | 1.175E-01 | 1.177E-01 | 1.179E-01 | 1.180E-01 | 1.180E-01 | 1.182E-01 | 1.183E-01 |
| te121 | 3.755E-10 | 3.723E-10 | 3.653E-10 | 3.392E-10 | 2.758E-10 | 2.131E-10 | 1.266E-11 | 1.556E-13 | 3.333E-12 | 7.110E-13 | 2.256E-13 | 1.523E-13 | 3.262E-14 | 6.988E-15 |
| te121m | 3.204E-09 | 3.177E-09 | 3.118E-09 | 2.896E-09 | 2.355E-09 | 1.820E-09 | 6.203E-10 | 1.329E-10 | 2.846E-11 | 6.071E-12 | 1.926E-12 | 1.300E-12 | 2.786E-13 | 5.967E-14 |
| sn122 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 | 1.580E-01 |
| te122 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 | 8.762E-03 |
| sn123 | 1.433E-03 | 1.418E-03 | 1.384E-03 | 1.260E-03 | 9.689E-04 | 6.985E-04 | 1.778E-04 | 2.509E-05 | 3.541E-06 | 4.970E-07 | 1.155E-07 | 7.013E-08 | 9.896E-09 | 1.396E-09 |

1
5 more years for cooling used fuel material fission products page 26
0
nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sb123 | 1.535E-01 | 1.535E-01 | 1.536E-01 | 1.536E-01 | 1.539E-01 | 1.542E-01 | 1.547E-01 | 1.549E-01 | 1.549E-01 | 1.549E-01 | 1.549E-01 | 1.549E-01 | 1.549E-01 | 1.549E-01 |
| te123 | 9.924E-05 | 9.930E-05 | 9.944E-05 | 9.994E-05 | 1.011E-04 | 1.021E-04 | 1.040E-04 | 1.045E-04 | 1.046E-04 | 1.046E-04 | 1.046E-04 | 1.046E-04 | 1.046E-04 | 1.046E-04 |
| te123m | 5.352E-06 | 5.290E-06 | 5.153E-06 | 4.655E-06 | 3.501E-06 | 2.455E-06 | 5.573E-07 | 6.673E-08 | 7.990E-09 | 9.511E-10 | 1.956E-10 | 1.139E-10 | 1.364E-11 | 1.633E-12 |
| sn124 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 | 2.577E-01 |
| sb124 | 6.419E-05 | 6.273E-05 | 5.956E-05 | 4.869E-05 | 2.770E-05 | 1.372E-05 | 7.282E-07 | 1.089E-08 | 1.629E-10 | 2.408E-12 | 1.051E-13 | 3.602E-14 | 5.386E-16 | 8.056E-18 |
| te124 | 6.187E-03 | 6.188E-03 | 6.191E-03 | 6.202E-03 | 6.223E-03 | 6.237E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 | 6.251E-03 |
| xe124 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 | 2.745E-15 |
| sn125 | 6.815E-11 | 5.902E-11 | 4.271E-11 | 1.213E-11 | 3.580E-13 | 4.457E-15 | 4.853E-23 | 1.941E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 2.124E-01 | 2.121E-01 | 2.114E-01 | 2.089E-01 | 2.020E-01 | 1.937E-01 | 1.625E-01 | 1.264E-01 | 9.835E-02 | 7.646E-02 | 6.341E-02 | 5.948E-02 | 4.627E-02 | 3.600E-02 |
| te125 | 1.354E-01 | 1.357E-01 | 1.364E-01 | 1.389E-01 | 1.460E-01 | 1.544E-01 | 1.860E-01 | 2.225E-01 | 2.510E-01 | 2.732E-01 | 2.864E-01 | 2.904E-01 | 3.038E-01 | 3.142E-01 |
| te125m | 2.942E-03 | 2.938E-03 | 2.930E-03 | 2.898E-03 | 2.809E-03 | 2.697E-03 | 2.267E-03 | 1.764E-03 | 1.372E-03 | 1.067E-03 | 8.845E-04 | 8.297E-04 | 6.455E-04 | 5.021E-04 |
| i125 | 2.005E-11 | 1.959E-11 | 1.859E-11 | 1.515E-11 | 8.555E-12 | 4.198E-12 | 2.142E-13 | 3.027E-15 | 4.278E-17 | 5.975E-19 | 2.500E-20 | 8.445E-21 | 1.193E-22 | 1.687E-24 |
| sn126 | 6.109E-01 | 6.109E-01 | 6.109E-01 | 6.109E-01 | 6.109E-01 | 6.109E-01 | 6.109E-01 | 6.109E-01

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| te130 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 | 7.805E+00 |
| xe130 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 | 1.199E-01 |
| i131 | 1.503E-10 | 1.264E-10 | 8.573E-10 | 1.891E-11 | 2.746E-13 | 1.414E-15 | 8.848E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 | 9.457E+00 |
| xe131m | 6.114E-09 | 5.438E-09 | 4.179E-09 | 1.501E-09 | 8.523E-11 | 2.397E-12 | 7.876E-19 | 4.132E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.388E-16 | 1.203E-16 | 8.724E-17 | 2.499E-17 | 7.562E-19 | 9.791E-21 | 1.838E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 2.017E-19 | 1.788E-19 | 1.363E-19 | 4.748E-20 | 2.476E-21 | 6.267E-23 | 1.324E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe132 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 | 2.175E+01 |
| cs132 | 2.766E-17 | 2.233E-17 | 1.380E-17 | 2.123E-18 | 1.124E-20 | 1.647E-23 | 2.348E-35 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba132 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 | 3.666E-06 |
| xe133 | 3.651E-15 | 2.802E-15 | 1.546E-15 | 1.529E-16 | 2.350E-19 | 7.389E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs133 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 | 2.112E+01 |
| ba133 | 1.944E-06 | 1.944E-06 | 1.942E-06 | 1.936E-06 | 1.919E-06 | 1.898E-06 | 1.813E-06 | 1.697E-06 | 1.589E-06 | 1.487E-06 | 1.416E-06 | 1.392E-06 | 1.304E-06 | 1.221E-06 |
| xe134 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 | 2.715E+01 |
| cs134 | 1.904E+00 | 1.901E+00 | 1.893E+00 | 1.863E+00 | 1.781E+00 | 1.684E+00 | 1.332E+00 | 9.523E-01 | 6.810E-01 | 4.865E-01 | 3.789E-01 | 3.479E-01 | 2.487E-01 | 1.779E-01 |
| ba134 | 1.266E+00 | 1.270E+00 | 1.278E+00 | 1.308E+00 | 1.390E+00 | 1.487E+00 | 1.839E+00 | 2.218E+00 | 2.490E+00 | 2.684E+00 | 2.792E+00 | 2.823E+00 | 2.922E+00 | 2.993E+00 |
| cs135 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 | 1.266E+01 |
| ba135 | 4.856E-03 | 4.856E-03 | 4.857E-03 | 4.857E-03 | 4.858E-03 | 4.860E-03 | 4.864E-03 | 4.868E-03 | 4.872E-03 | 4.875E-03 | 4.876E-03 | 4.880E-03 | 4.880E-03 | 4.883E-03 |
| xe136 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 | 3.903E+01 |
| cs136 | 5.744E-08 | 5.170E-08 | 4.079E-08 | 1.623E-08 | 1.228E-09 | 4.943E-11 | 7.260E-17 | 3.248E-25 | 1.453E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 | 6.560E-01 |
| ba136m | 1.725E-15 | 1.553E-15 | 1.225E-15 | 4.874E-16 | 3.690E-17 | 1.485E-18 | 2.181E-24 | 9.756E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.252E+01 | 2.252E+01 | 2.251E+01 | 2.249E+01 | 2.242E+01 | 2.233E+01 | 2.198E+01 | 2.148E+01 | 2.099E+01 | 2.051E+01 | 2.016E+01 | 2.004E+01 | 1.958E+01 | 1.914E+01 |



nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba137 | 1.116E+00 | 1.119E+00 | 1.125E+00 | 1.150E+00 | 1.219E+00 | 1.305E+00 | 1.662E+00 | 2.162E+00 | 2.651E+00 | 3.130E+00 | 3.479E+00 | 3.597E+00 | 4.053E+00 | 4.499E+00 |
| ba137m | 3.440E-06 | 3.440E-06 | 3.439E-06 | 3.435E-06 | 3.425E-06 | 3.411E-06 | 3.357E-06 | 3.281E-06 | 3.206E-06 | 3.133E-06 | 3.079E-06 | 3.061E-06 | 2.992E-06 | 2.924E-06 |
| la137 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.454E-06 | 7.453E-06 | 7.453E-06 | 7.453E-06 | 7.453E-06 | 7.453E-06 |
| ba138 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 | 2.237E+01 |
| la138 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 | 3.640E-04 |
| ce138 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 | 1.320E-07 |
| la139 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 |
| ce139 | 2.146E-05 | 2.124E-05 | 2.077E-05 | 1.902E-05 | 1.486E-05 | 1.093E-05 | 3.026E-06 | 4.814E-07 | 7.660E-08 | 1.213E-08 | 3.082E-09 | 1.930E-09 | 3.070E-10 | 4.885E-11 |
| ba140 | 8.096E-07 | 7.262E-07 | 5.686E-07 | 2.197E-07 | 1.531E-08 | 5.562E-10 | 5.321E-16 | 1.289E-24 | 3.122E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.227E-07 | 1.101E-07 | 8.618E-08 | 3.335E-08 | 2.321E-09 | 8.430E-11 | 8.064E-17 | 1.953E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce140 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 | 2.117E+01 |
| ce141 | 5.439E-03 | 5.212E-03 | 4.735E-03 | 3.260E-03 | 1.147E-03 | 3.123E-04 | 1.359E-06 | 5.666E-10 | 2.362E-13 | 9.639E-17 | 2.919E-19 | 4.018E-20 | 1.675E-23 | 6.983E-27 |
| pr141 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 |
| ce142 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 | 1.845E+01 |
| nd142 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 | 2.318E-01 |
| pr143 | 1.703E-06 | 1.538E-06 | 1.222E-06 | 4.998E-07 | 4.091E-08 | 1.814E-09 | 3.997E-15 | 3.197E-23 | 2.557E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd143 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 | 1.435E+01 |
| pm143 | 2.054E-14 | 2.043E-14 | 2.019E-14 | 1.929E-14 | 1.697E-14 | 1.446E-14 | 7.424E-15 | 2.858E-15 | 1.100E-15 | 4.223E-16 | 2.073E-16 | 1.625E-16 | 6.257E-17 | 2.408E-17 |
| ce144 | 3.046E-00 | 3.032E-00 | 2.999E-00 | 2.874E-00 | 2.551E-00 | 2.199E-00 | 1.182E-00 | 4.865E-01 | 2.002E-01 | 8.218E-02 | 2.240E-02 | 1.391E-02 | 1.391E-02 | 5.725E-03 |
| pr144 | 1.283E-04 | 1.277E-04 | 1.263E-04 | 1.210E-04 | 1.074E-04 | 9.262E-05 | 4.980E-05 | 2.049E-05 | 8.433E-06 | 3.461E-06 | 1.786E-06 | 1.424E-06 | 5.861E-07 | 2.412E-07 |
| pr144m | 5.105E-07 | 5.080E-07 | 5.025E-07 | 4.815E-07 | 4.274E-07 | 3.685E-07 | 1.981E-07 | 8.153E-08 | 3.355E-08 | 1.377E-08 | 7.105E-09 | 5.666E-09 | 2.331E-09 | 9.593E-10 |
| nd144 | 1.421E+01 | 1.422E+01 | 1.426E+01 | 1.438E+01 | 1.471E+01 | 1.506E+01 | 1.607E+01 | 1.677E+01 | 1.706E+01 | 1.717E+01 | 1.721E+01 | 1.722E+01 | 1.724E+01 | 1.725E+01 |
| pm144 | 6.224E-12 | 6.200E-12 | 6.147E-12 | 5.945E-12 | 5.414E-12 | 4.819E-12 | 2.961E-12 | 1.475E-12 | 7.347E-13 | 3.652E-13 | 2.173E-13 | 1.819E-13 | 9.061E-14 | 4.513E-14 |
| sm144 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 | 6.594E-13 |
| nd145 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 | 1.061E+01 |
| pm145 | 4.672E-07 | 4.671E-07 | 4.669E-07 | 4.662E-07 | 4.642E-07 | 4.616E-07 | 4.505E-07 | 4.343E-07 | 4.183E-07 | 4.023E-07 | 3.908E-07 | 3.870E-07 | 3.722E-07 | 3.579E-07 |
| sm145 | 4.563E-09 | 4.544E-09 | 4.502E-09 | 4.345E-09 | 3.932E-09 | 3.472E-09 | 2.064E-09 | 9.809E-10 | 4.661E-10 | 2.210E-10 | 1.269E-10 | 1.050E-10 | 4.990E-11 | 2.371E-11 |
| nd146 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 | 1.113E+01 |
| pm146 | 6.970E-06 | 6.966E-06 | 6.955E-06 | 6.913E-06 | 6.798E-06 | 6.657E-06 | 6.099E-06 | 5.381E-06 | 4.748E-06 | 4.187E-06 | 3.814E-06 | 3.694E-06 | 3.259E-06 | 2.876E-06 |
| sm146 | 4.317E-05 | 4.317E-05 | 4.318E-05 | 4.319E-05 | 4.323E-05 | 4.328E-05 | 4.347E-05 | 4.371E-05 | 4.393E-05 | 4.412E-05 | 4.424E-05 | 4.428E-05 | 4.443E-05 | 4.456E-05 |
| nd147 | 3.411E-08 | 3.006E-08 | 2.263E-08 | 7.497E-09 | 3.400E-10 | 7.229E-12 | 7.377E-19 | 7.259E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.808E+00 | 2.804E+00 | 2.794E+00 | 2.759E+00 | 2.663E+00 | 2.548E+00 | 2.119E+00 | 1.627E+00 | 1.250E+00 | 9.589E-01 | 7.877E-01 | 7.364E-01 | 5.655E-01 | 4.343E-01 |
| sm147 | 1.738E+00 | 1.742E+00 | 1.751E+00 | 1.786E+00 | 1.882E+00 | 1.997E+00 | 2.426E+00 | 2.918E+00 | 3.296E+00 | 3.586E+00 | 3.758E+00 | 3.809E+00 | 3.980E+00 | 4.111E+00 |
| eu147 | 7.354E-20 | 6.943E-20 | 6.100E-20 | 3.688E-20 | 9.009E-21 | 1.559E-21 | 1.018E-24 | 2.808E-29 | 7.747E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| nd148 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 | 6.677E+00 |
| pm148 | 4.884E-06 | 4.723E-06 | 4.379E-06 | 3.265E-06 | 1.434E-06 | 5.156E-07 | 7.124E-09 | 1.555E-11 | 3.393E-14 | 7.280E-17 | 7.570E-19 | 1.589E-19 | 3.467E-22 | 7.566E-25 |
| pm148m | 7.782E-04 | 7.525E-04 | 6.978E-04 | 5.202E-04 | 2.285E-04 | 8.206E-05 | 1.135E-06 | 2.477E-09 | 5.405E-12 | 1.160E-14 | 1.206E-16 | 2.531E-17 | 5.524E-20 | 1.205E-22 |
| sm148 | 2.505E+00 | 2.505E+00 | 2.505E+00 | 2.505E+00 | 2.505E+00 | 2.505E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 | 2.506E+00 |
| sm149 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 | 1.008E-01 |
| eu149 | 1.476E-12 | 1.455E-12 | 1.407E-12 | 1.235E-12 | 8.573E-13 | 5.444E-13 | 8.154E-14 | 5.385E-15 | 3.556E-16 | 2.331E-17 | 3.076E-18 | 1.539E-18 | 1.017E-19 | 6.713E-21 |
| nd150 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 | 3.943E+00 |
| sm150 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 | 5.520E+00 |
| sm151 | 4.252E-01 | 4.252E-01 | 4.251E-01 | 4.250E-01 | 4.245E-01 | 4.240E-01 | 4.217E-01 | 4.185E-01 | 4.153E-01 | 4.121E-01 | 4.097E-01 | 4.089E-01 | 4.058E-01 | 4.027E-01 |
| eu151 | 2.956E-03 | 2.974E-03 | 3.014E-03 | 3.171E-03 | 3.610E-03 | 4.155E-03 | 6.429E-03 | 9.662E-03 | 1.287E-02 | 1.606E-02 | 1.842E-02 | 1.922E-02 | 2.236E-02 | 2.547E-02 |
| gd151 | 1.479E-09 | 1.462E-09 | 1.426E-09 | 1.293E-09 | 9.833E-10 | 6.992E-10 | 1.681E-10 | 2.185E-11 | 2.840E-12 | 3.671E-13 | 8.025E-14 | 4.772E-14 | 6.203E-15 | 8.063E-16 |
| sm152 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 | 2.385E+00 |
| eu152 | 7.405E-04 | 7.403E-04 | 7.398E-04 | 7.380E-04 | 7.330E-04 | 7.267E-04 | 7.012E-04 | 6.662E-04 | 6.330E-04 | 6.013E-04 | 5.788E-04 | 5.713E-04 | 5.428E-04 | 5.158E-04 |
| gd152 | 1.328E-03 | 1.328E-03 | 1.328E-03 | 1.328E-03 | 1.330E-03 | 1.331E-03 | 1.338E-03 | 1.348E-03 | 1.357E-03 | 1.366E-03 | 1.373E-03 | 1.375E-03 | 1.383E-03 | 1.390E-03 |
| eu153 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 | 2.817E+00 |
| gd153 | 5.546E-05 | 5.514E-05 | 5.443E-05 | 5.175E-05 | 4.493E-05 | 3.769E-05 | 1.807E-05 | 6.307E-06 | 2.202E-06 | 7.664E-07 | 3.498E-07 | 2.675E-07 | 9.339E-08 | 3.260E-08 |
| sm154 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 | 1.106E+00 |
| eu154 | 7.637E-01 | 7.634E-01 | 7.626E-01 | 7.597E-01 | 7.515E-01 | 7.415E-01 | 7.009E-01 | 6.467E-01 | 5.966E-01 | 5.504E-01 | 5.183E-01 | 5.078E-01 | 4.685E-01 | 4.322E-01 |



nuclide concentrations, grams
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gd154 | 1.027E-01 | 1.030E-01 | 1.038E-01 | 1.067E-01 | 1.149E-01 | 1.249E-01 | 1.655E-01 | 2.197E-01 | 2.698E-01 | 3.160E-01 | 3.481E-01 | 3.586E-01 | 3.979E-01 | 4.341E-01 |
| eu155 | 1.873E-01 | 1.872E-01 | 1.868E-01 | 1.855E-01 | 1.819E-01 | 1.775E-01 | 1.604E-01 | 1.386E-01 | 1.198E-01 | 1.035E-01 | 9.287E-02 | 8.948E-02 | 7.735E-02 | 6.686E-02 |
| gd155 | 2.202E-02 | 2.217E-02 | 2.251E-02 | 2.381E-02 | 2.740E-02 | 3.178E-02 | 4.896E-02 | 7.071E-02 | 8.951E-02 | 1.058E-01 | 1.165E-01 | 1.198E-01 | 1.320E-01 | 1.425E-01 |
| eu156 | 1.434E-06 | 1.309E-06 | 1.066E-06 | 4.797E-07 | 5.128E-08 | 3.170E-09 | 2.802E-14 | 1.637E-21 | 9.561E-29 | 5.336E-36 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| gd156 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 | 1.847E+00 |
| dy156 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 | 4.635E-14 |
| gd157 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 | 5.402E-03 |
| tb157 | 1.327E-08 | 1.327E-08 | 1.327E-08 | 1.326E-08 | 1.325E-08 | 1.323E-08 | 1.314E-08 | 1.301E-08 | 1.288E-08 | 1.276E-08 | 1.266E-08 | 1.263E-08 | 1.251E-08 | 1.239E-08 |
| gd158 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 | 5.992E-01 |
| tb158 | 1.424E-06 | 1.424E-06 | 1.424E-06 | 1.424E-06 | 1.423E-06 | 1.422E-06 | 1.418E-06 | 1.413E-06 | 1.407E-06 | 1.402E-06 | 1.398E-06 | 1.396E-06 | 1.391E-06 | 1.386E-06 |
| dy158 | 1.693E-09 | 1.698E-09 | 1.709E-09 | 1.753E-09 | 1.875E-09 | 2.026E-09 | 2.660E-09 | 3.564E-09 | 4.465E-09 | 5.365E-09 | 6.031E-09 | 6.258E-09 | 7.149E-09 | 8.035E-09 |
| tb159 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 |
| dy159 | 3.602E-09 | 3.568E-09 | 3.492E-09 | 3.210E-09 | 2.538E-09 | 1.893E-09 | 5.567E-11 | 1.675E-11 | 1.674E-11 | 8.830E-12 | 2.898E-12 | 1.518E-12 | 8.689E-14 | 1.507E-14 |
| gd160 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 | 4.359E-02 |
| tb160 | 2.726E-04 | 2.675E-04 | 2.562E-04 | 2.166E-04 | 1.354E-04 | 7.545E-05 | 6.545E-06 | 1.978E-07 | 5.977E-09 | 1.789E-10 | 1.318E-11 | 5.406E-12 | 1.633E-13 | 4.936E-15 |
| dy160 | 1.079E-02 | 1.080E-02 | 1.081E-02 | 1.085E-02 | 1.093E-02 | 1.099E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 | 1.106E-02 |
| tb161 | 1.121E-14 | 9.173E-15 | 5.839E-15 | 1.008E-15 | 7.372E-18 | 1.617E-20 | 1.239E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| dy161 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 | 1.660E-02 |
| dy162 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 | 1.004E-02 |
| er162 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 | 5.347E-14 |
| dy163 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 | 8.104E-03 |
| ho163 | 3.319E-09 | 3.319E-09 | 3.319E-09 | 3.319E-09 | 3.319E-09 | 3.319E-09 | 3.319E-09 | 3.318E-09 | 3.318E-09 | 3.317E-09 | 3.317E-09 | 3.317E-09 | 3.316E-09 | 3.316E-09 |
| dy164 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 | 3.255E-03 |
| er164 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 | 3.348E-08 |
| ho165 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 | 2.771E-03 |
| ho166m | 7.388E-06 | 7.388E-06 | 7.388E-06 | 7.388E-06 | 7.387E-06 | 7.386E-06 | 7.383E-06 | 7.379E-06 | 7.375E-06 | 7.371E-06 | 7.368E-06 | 7.366E-06 | 7.362E-06 | 7.358E-06 |
| er166 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 | 8.723E-04 |
| er167 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 | 5.079E-05 |
| er168 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 | 1.519E-04 |
| tm168 | 1.541E-11 | 1.518E-11 | 1.468E-11 | 1.289E-11 | 8.948E-12 | 5.682E-12 | 8.511E-13 | 5.620E-14 | 3.712E-15 | 2.433E-16 | 3.211E-17 | 1.607E-17 | 1.061E-18 | 7.007E-20 |
| yb168 | 2.552E-14 | 2.555E-14 | 2.560E-14 | 2.578E-14 | 2.617E-14 | 2.650E-14 | 2.698E-14 | 2.706E-14 | 2.706E-14 | 2.707E-14 | 2.707E-14 | 2.707E-14 | 2.707E-14 | 2.707E-14 |
| er169 | 8.609E-15 | 7.428E-15 | 5.329E-15 | 1.465E-15 | 3.937E-17 | 4.365E-19 | 2.929E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm169 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 | 1.336E-05 |
| yb169 | 5.992E-14 | 5.738E-14 | 5.205E-14 | 3.564E-14 | 1.234E-14 | 3.294E-15 | 1.319E-17 | 4.881E-21 | 1.806E-24 | 6.541E-28 | 1.813E-30 | 2.421E-31 | 8.958E-35 | 0.000E+00 |
| er170 | 8.224E-06 | 8.224E-06 | 8.224E-06 | 8.224E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 | 8.225E-06 |
| tm170 | 7.565E-07 | 7.484E-07 | 7.304E-07 | 6.647E-07 | 5.104E-07 | 3.674E-07 | 9.294E-08 | 1.300E-08 | 1.817E-09 | 2.527E-10 | 5.834E-11 | 3.534E-11 | 4.941E-12 | 6.909E-13 |
| yb170 | 7.875E-06 | 7.883E-06 | 7.901E-06 | 7.967E-06 | 8.121E-06 | 8.264E-06 | 8.538E-06 | 8.618E-06 | 8.629E-06 | 8.630E-06 | 8.631E-06 | 8.631E-06 | 8.631E-06 | 8.631E-06 |
| tm171 | 2.227E-06 | 2.222E-06 | 2.212E-06 | 2.174E-06 | 2.072E-06 | 1.950E-06 | 1.516E-06 | 1.057E-06 | 7.367E-07 | 5.131E-07 | 3.921E-07 | 3.577E-07 | 2.494E-07 | 1.738E-07 |
| yb171 | 2.451E-06 | 2.456E-06 | 2.466E-06 | 2.504E-06 | 2.606E-06 | 2.728E-06 | 3.162E-06 | 3.621E-06 | 3.941E-06 | 4.165E-06 | 4.286E-06 | 4.320E-06 | 4.429E-06 | 4.504E-06 |
| yb172 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 | 5.358E-06 |
| total | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 |



element concentrations, grams
basis =~15.1

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y | 4.296E+00 | 4.296E+00 | 4.295E+00 | 4.292E+00 | 4.286E+00 | 4.282E+00 | 4.278E+00 | 4.277E+00 | 4.277E+00 | 4.277E+00 | 4.277E+00 | 4.277E+00 | 4.277E+00 | 4.277E+00 |
| zr | 4.671E+01 | 4.670E+01 | 4.670E+01 | 4.670E+01 | 4.670E+01 | 4.671E+01 | 4.678E+01 | 4.690E+01 | 4.701E+01 | 4.712E+01 | 4.720E+01 | 4.723E+01 | 4.733E+01 | 4.744E+01 |
| nb | 9.200E-02 | 9.014E-02 | 8.608E-02 | 7.190E-02 | 4.313E-02 | 2.263E-02 | 1.513E-03 | 5.268E-05 | 6.857E-05 | 7.228E-05 | 7.543E-05 | 7.651E-05 | 8.075E-05 | 8.499E-05 |
| mo | 5.793E+01 | 5.793E+01 | 5.794E+01 | 5.797E+01 | 5.802E+01 | 5.806E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 | 5.810E+01 |
| tc | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 | 1.430E+01 |
| ru | 5.450E+01 | 5.449E+01 | 5.446E+01 | 5.435E+01 | 5.405E+01 | 5.373E+01 | 5.270E+01 | 5.188E+01 | 5.146E+01 | 5.125E+01 | 5.116E+01 | 5.114E+01 | 5.108E+01 | 5.106E+01 |
| rh | 1.372E+01 | 1.372E+01 | 1.372E+01 | 1.372E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 | 1.373E+01 |
| pd | 4.519E+01 | 4.520E+01 | 4.523E+01 | 4.534E+01 | 4.563E+01 | 4.595E+01 | 4.697E+01 | 4.780E+01 | 4.822E+01 | 4.843E+01 | 4.852E+01 | 4.854E+01 | 4.859E+01 | 4.862E+01 |
| ag | 3.111E+00 | 3.110E+00 | 3.110E+00 | 3.109E+00 | 3.107E+00 | 3.105E+00 | 3.098E+00 | 3.094E+00 | 3.092E+00 | 3.092E+00 | 3.092E+00 | 3.092E+00 | 3.092E+00 | 3.091E+00 |
| cd | 3.714E+00 | 3.714E+00 | 3.714E+00 | 3.717E+00 | 3.717E+00 | 3.720E+00 | 3.726E+00 | 3.731E+00 | 3.732E+00 | 3.732E+00 | 3.733E+00 | 3.733E+00 | 3.733E+00 | 3.733E+00 |
| in | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.269E-02 | 5.270E-02 | 5.270E-02 | 5.270E-02 | 5.271E-02 | 5.271E-02 | 5.272E-02 | 5.272E-02 | 5.272E-02 | 5.272E-02 | 5.273E-02 |
| sn | 1.596E+00 | 1.596E+00 | 1.596E+00 | 1.596E+00 | 1.596E+00 | 1.595E+00 | 1.595E+00 | 1.594E+00 | 1.594E+00 | 1.594E+00 | 1.594E+00 | 1.594E+00 | 1.594E+00 | 1.594E+00 |
| sb | 4.831E-01 | 4.828E-01 | 4.822E-01 | 4.798E-01 | 4.732E-01 | 4.651E-01 | 4.346E-01 | 3.988E-01 | 3.709E-01 | 3.492E-01 | 3.363E-01 | 3.324E-01 | 3.193E-01 | 3.092E-01 |
| te | 1.032E+01 | 1.032E+01 | 1.032E+01 | 1.032E+01 | 1.033E+01 | 1.034E+01 | 1.037E+01 | 1.040E+01 | 1.043E+01 | 1.045E+01 | 1.046E+01 | 1.047E+01 | 1.048E+01 | 1.049E+01 |
| i | 5.549E+00 | 5.550E+00 | 5.550E+00 | 5.550E+00 | 5.552E+00 | 5.553E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 | 5.555E+00 |
| xe | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 | 9.760E+01 |
| cs | 5.820E+01 | 5.819E+01 | 5.818E+01 | 5.812E+01 | 5.797E+01 | 5.779E+01 | 5.708E+01 | 5.620E+01 | 5.544E+01 | 5.477E+01 | 5.431E+01 | 5.416E+01 | 5.361E+01 | 5.309E+01 |
| ba | 2.541E+01 | 2.542E+01 | 2.543E+01 | 2.549E+01 | 2.564E+01 | 2.582E+01 | 2.653E+01 | 2.741E+01 | 2.817E+01 | 2.884E+01 | 2.930E+01 | 2.945E+01 | 3.001E+01 | 3.052E+01 |
| la | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.075E+01 | 2.076E+01 | 2.076E+01 | 2.076E+01 | 2.076E+01 | 2.076E+01 | 2.076E+01 | 2.076E+01 |
| ce | 4.268E+01 | 4.266E+01 | 4.263E+01 | 4.250E+01 | 4.218E+01 | 4.182E+01 | 4.081E+01 | 4.011E+01 | 3.982E+01 | 3.971E+01 | 3.967E+01 | 3.966E+01 | 3.964E+01 | 3.963E+01 |
| pr | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 | 1.905E+01 |
| nd | 6.115E+01 | 6.117E+01 | 6.120E+01 | 6.132E+01 | 6.165E+01 | 6.200E+01 | 6.302E+01 | 6.371E+01 | 6.400E+01 | 6.412E+01 | 6.416E+01 | 6.416E+01 | 6.418E+01 | 6.419E+01 |
| pm | 2.808E+00 | 2.804E+00 | 2.795E+00 | 2.760E+00 | 2.663E+00 | 2.548E+00 | 2.119E+00 | 1.627E+00 | 1.250E+00 | 9.589E-01 | 7.877E-01 | 7.364E-01 | 5.655E-01 | 4.343E-01 |
| sm | 1.378E+01 | 1.378E+01 | 1.379E+01 | 1.383E+01 | 1.392E+01 | 1.404E+01 | 1.447E+01 | 1.495E+01 | 1.533E+01 | 1.562E+01 | 1.578E+01 | 1.584E+01 | 1.600E+01 | 1.613E+01 |
| eu | 3.771E+00 | 3.771E+00 | 3.770E+00 | 3.754E+00 | 3.741E+00 | 3.741E+00 | 3.512E+00 | 3.547E+00 | 3.487E+00 | 3.434E+00 | 3.385E+00 | 3.385E+00 | 3.342E+00 | 3.302E+00 |
| gd | 2.621E+00 | 2.622E+00 | 2.623E+00 | 2.627E+00 | 2.639E+00 | 2.653E+00 | 2.711E+00 | 2.787E+00 | 2.856E+00 | 2.918E+00 | 2.961E+00 | 2.975E+00 | 3.026E+00 | 3.073E+00 |
| tb | 9.490E-02 | 9.489E-02 | 9.488E-02 | 9.484E-02 | 9.476E-02 | 9.470E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 | 9.463E-02 |
| dy | 4.878E-02 | 4.879E-02 | 4.880E-02 | 4.884E-02 | 4.892E-02 | 4.898E-02 | 4.905E-02 | 4.906E-02 | 4.906E-02 | 4.906E-02 | 4.906E-02 | 4.906E-02 | 4.906E-02 | 4.906E-02 |
| ho | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 | 2.779E-03 |
| er | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 | 1.083E-03 |
| tm | 1.635E-05 | 1.634E-05 | 1.631E-05 | 1.620E-05 | 1.595E-05 | 1.568E-05 | 1.497E-05 | 1.443E-05 | 1.410E-05 | 1.388E-05 | 1.376E-05 | 1.372E-05 | 1.361E-05 | 1.354E-05 |
| yb | 1.568E-05 | 1.570E-05 | 1.573E-05 | 1.583E-05 | 1.609E-05 | 1.635E-05 | 1.706E-05 | 1.760E-05 | 1.793E-05 | 1.815E-05 | 1.827E-05 | 1.831E-05 | 1.842E-05 | 1.849E-05 |
| totals | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 | 6.264E+02 |

1

5 more years for cooling used fuel material fission products page 30

0

nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 1.025E+01 | 1.025E+01 | 1.024E+01 | 1.021E+01 | 1.014E+01 | 1.004E+01 | 9.556E+00 | 9.128E+00 | 8.629E+00 | 8.156E+00 | 7.821E+00 | 7.710E+00 | 7.288E+00 | 6.890E+00 |
| ga 68 | 1.519E-17 | 1.511E-17 | 1.494E-17 | 1.428E-17 | 1.260E-17 | 1.078E-17 | 5.615E-18 | 2.207E-18 | 8.675E-19 | 3.401E-19 | 1.696E-19 | 1.337E-19 | 5.255E-20 | 2.066E-20 |
| ge 68 | 1.519E-17 | 1.511E-17 | 1.494E-17 | 1.428E-17 | 1.260E-17 | 1.078E-17 | 5.614E-18 | 2.207E-18 | 8.674E-19 | 3.401E-19 | 1.696E-19 | 1.337E-19 | 5.254E-20 | 2.065E-20 |
| ge 71 | 3.714E-12 | 3.290E-12 | 2.504E-12 | 8.665E-13 | 4.438E-14 | 1.098E-15 | 2.112E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 6.415E-08 | 6.306E-08 | 6.065E-08 | 5.215E-08 | 3.416E-08 | 2.018E-08 | 2.233E-09 | 9.563E-11 | 4.095E-12 | 1.739E-13 | 1.662E-14 | 7.445E-15 | 3.188E-16 | 1.365E-17 |
| as 73 | 6.415E-08 | 6.306E-08 | 6.065E-08 | 5.215E-08 | 3.416E-08 | 2.018E-08 | 2.233E-09 | 9.563E-11 | 4.095E-12 | 1.739E-13 | 1.662E-14 | 7.445E-15 | 3.188E-16 | 1.365E-17 |
| as 74 | 6.347E-09 | 5.871E-09 | 4.926E-09 | 2.489E-09 | 3.681E-10 | 3.408E-11 | 1.632E-15 | 1.070E-21 | 7.017E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 1.773E-06 | 1.753E-06 | 1.708E-06 | 1.544E-06 | 1.162E-06 | 8.167E-07 | 1.868E-07 | 2.260E-08 | 2.734E-09 | 3.289E-10 | 6.815E-11 | 3.979E-11 | 4.814E-12 | 5.825E-13 |
| se 79 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 |
| kr 81 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 | 1.098E-08 |
| kr 83m | 1.803E-05 | 1.774E-05 | 1.711E-05 | 1.486E-05 | 1.002E-05 | 6.137E-06 | 7.896E-07 | 4.195E-08 | 2.229E-09 | 1.175E-10 | 1.318E-11 | 6.241E-12 | 3.316E-13 | 1.762E-14 |
| rb 83 | 2.425E-05 | 2.386E-05 | 2.302E-05 | 2.000E-05 | 1.348E-05 | 8.256E-06 | 1.062E-06 | 5.644E-08 | 2.999E-09 | 1.580E-10 | 1.774E-11 | 8.396E-12 | 4.461E-13 | 2.370E-14 |
| rb 84 | 7.056E-05 | 6.764E-05 | 6.151E-05 | 4.250E-05 | 1.510E-05 | 4.164E-06 | 1.908E-08 | 8.564E-12 | 3.844E-15 | 1.690E-18 | 5.407E-21 | 7.585E-22 | 3.405E-25 | 1.528E-28 |
| kr 85 | 1.019E+02 | 1.019E+02 | 1.018E+02 | 1.015E+02 | 1.006E+02 | 9.955E+01 | 9.517E+01 | 8.923E+01 | 8.367E+01 | 7.843E+01 | 7.476E+01 | 7.354E+01 | 6.895E+01 | 6.465E+01 |
| sr 85 | 5.663E-06 | 5.544E-06 | 5.283E-06 | 4.382E-06 | 2.595E-06 | 1.352E-06 | 8.852E-08 | 1.788E-09 | 3.613E-11 | 7.222E-13 | 3.943E-14 | 1.459E-14 | 2.948E-16 | 5.956E-18 |
| rb 86 | 3.350E-03 | 3.110E-03 | 2.630E-03 | 1.372E-03 | 2.206E-04 | 2.290E-05 | 1.737E-09 | 2.199E-15 | 2.784E-21 | 3.396E-27 | 1.368E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| rb 87 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 | 2.085E-07 |
| y 88 | 5.595E-03 | 5.523E-03 | 5.364E-03 | 4.787E-03 | 3.481E-03 | 2.342E-03 | 4.463E-04 | 4.161E-05 | 3.879E-06 | 3.593E-07 | 6.131E-08 | 3.350E-08 | 3.123E-09 | 2.911E-10 |
| zr 88 | 2.320E-09 | 2.282E-09 | 2.198E-09 | 1.901E-09 | 1.265E-09 | 7.619E-10 | 9.151E-11 | 4.406E-12 | 2.121E-13 | 1.013E-14 | 1.056E-15 | 4.875E-16 | 2.347E-17 | 1.130E-18 |
| sr 89 | 3.310E+02 | 3.220E+02 | 3.027E+02 | 2.381E+02 | 1.216E+02 | 5.266E+01 | 1.593E+00 | 1.066E-02 | 7.134E-05 | 4.709E-07 | 1.128E-08 | 3.151E-09 | 2.108E-11 | 1.411E-13 |
| y 89m | 3.191E-02 | 3.104E-02 | 2.918E-02 | 2.296E-02 | 1.172E-02 | 5.076E-03 | 1.536E-04 | 1.028E-06 | 6.877E-09 | 4.539E-11 | 1.088E-12 | 3.037E-13 | 2.032E-15 | 1.360E-17 |
| sr 90 | 6.902E+02 | 6.901E+02 | 6.899E+02 | 6.891E+02 | 6.869E+02 | 6.842E+02 | 6.728E+02 | 6.568E+02 | 6.411E+02 | 6.259E+02 | 6.147E+02 | 6.110E+02 | 5.965E+02 | 5.823E+02 |
| y 90 | 6.904E+02 | 6.903E+02 | 6.901E+02 | 6.893E+02 | 6.871E+02 | 6.843E+02 | 6.729E+02 | 6.569E+02 | 6.413E+02 | 6.260E+02 | 6.149E+02 | 6.111E+02 | 5.966E+02 | 5.824E+02 |
| y 91 | 7.475E+02 | 7.300E+02 | 6.921E+02 | 5.625E+02 | 3.148E+02 | 1.528E+02 | 7.451E+00 | 9.870E-02 | 1.307E-03 | 1.711E-05 | 6.822E-07 | 9.267E-07 | 3.003E-09 | 3.977E-11 |
| nb 91 | 8.863E-10 | 8.863E-10 | 8.863E-10 | 8.862E-10 | 8.861E-10 | 8.860E-10 | 8.853E-10 | 8.844E-10 | 8.835E-10 | 8.826E-10 | 8.820E-10 | 8.817E-10 | 8.808E-10 | 8.799E-10 |
| nb 91m | 2.798E-12 | 2.735E-12 | 2.598E-12 | 2.129E-12 | 1.218E-12 | 6.081E-13 | 3.332E-14 | 5.215E-16 | 8.163E-18 | 1.263E-19 | 5.703E-21 | 1.977E-21 | 3.095E-23 | 4.845E-25 |
| nb 92 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 | 1.500E-12 |
| nb 92m | 1.542E-14 | 1.345E-14 | 9.891E-15 | 2.994E-15 | 1.054E-16 | 1.636E-18 | 4.476E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 | 2.354E-02 |
| nb 93m | 1.995E-03 | 2.000E-03 | 2.011E-03 | 2.054E-03 | 2.174E-03 | 2.323E-03 | 2.932E-03 | 3.774E-03 | 4.580E-03 | 5.355E-03 | 5.909E-03 | 6.095E-03 | 6.803E-03 | 7.482E-03 |
| mo 93 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.969E-09 | 4.968E-09 | 4.967E-09 | 4.966E-09 | 4.966E-09 | 4.965E-09 | 4.965E-09 |
| nb 94 | 8.463E-06 | 8.463E-06 | 8.463E-06 | 8.463E-06 | 8.463E-06 | 8.463E-06 | 8.463E-06 | 8.462E-06 | 8.462E-06 | 8.462E-06 | 8.462E-06 | 8.462E-06 | 8.461E-06 | 8.461E-06 |
| zr 95 | 1.749E+03 | 1.712E+03 | 1.631E+03 | 1.349E+03 | 7.938E+02 | 4.101E+02 | 2.595E+01 | 4.990E-01 | 9.598E-03 | 1.826E-04 | 9.610E-06 | 3.512E-06 | 6.754E-08 | 1.299E-09 |
| nb 95 | 3.611E+03 | 3.538E+03 | 3.379E+03 | 2.822E+03 | 1.692E+03 | 8.867E+02 | 5.707E+01 | 1.135E+00 | 2.186E-02 | 4.158E-04 | 2.124E-05 | 7.748E-06 | 1.537E-07 | 2.958E-09 |
| nb 95m | 2.003E+01 | 1.960E+01 | 1.867E+01 | 1.544E+01 | 9.088E+00 | 4.695E+00 | 2.970E-01 | 5.713E-03 | 1.099E-04 | 2.090E-06 | 1.100E-07 | 4.020E-08 | 7.732E-10 | 1.487E-11 |
| tc 95 | 1.472E-13 | 1.439E-13 | 1.367E-13 | 1.121E-13 | 6.421E-14 | 3.211E-14 | 1.771E-15 | 2.798E-17 | 4.422E-19 | 6.910E-21 | 3.142E-22 | 1.092E-22 | 1.726E-24 | 0.000E+00 |
| tc 95m | 3.742E-12 | 3.658E-12 | 3.475E-12 | 2.849E-12 | 1.632E-12 | 8.162E-13 | 4.502E-14 | 7.114E-16 | 1.124E-17 | 1.756E-19 | 7.986E-21 | 2.776E-21 | 4.387E-23 | 6.932E-25 |
| zr 96 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 | 2.330E-15 |
| tc 97 | 1.141E-10 | 1.141E-10 | 1.141E-10 | 1.143E-10 | 1.146E-10 | 1.149E-10 | 1.153E-10 | 1.153E-10 | 1.154E-10 | 1.154E-10 | 1.154E-10 | 1.154E-10 | 1.154E-10 | 1.154E-10 |
| tc 97m | 2.258E-05 | 2.224E-05 | 2.149E-05 | 1.881E-05 | 1.295E-05 | 8.136E-06 | 1.166E-06 | 7.235E-08 | 4.487E-09 | 2.762E-10 | 3.479E-11 | 1.713E-11 | 1.063E-12 | 6.591E-14 |
| tc 98 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 | 1.152E-07 |
| tc 99 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 |
| rh 99 | 2.184E-16 | 2.004E-16 | 1.651E-16 | 7.771E-17 | 9.426E-18 | 6.819E-19 | 1.164E-23 | 1.743E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 | 8.614E-15 |
| rh101 | 8.109E-06 | 8.099E-06 | 8.078E-06 | 7.997E-06 | 7.775E-06 | 7.507E-06 | 6.483E-06 | 5.256E-06 | 4.261E-06 | 3.452E-06 | 2.952E-06 | 2.798E-06 | 2.269E-06 | 1.839E-06 |
| rh102 | 7.661E-02 | 7.610E-02 | 7.496E-02 | 7.070E-02 | 6.003E-02 | 4.896E-02 | 2.090E-02 | 6.198E-03 | 1.854E-03 | 5.662E-04 | 2.432E-04 | 1.845E-04 | 6.886E-05 | 2.231E-05 |
| rh102m | 2.505E-02 | 2.502E-02 | 2.496E-02 | 2.474E-02 | 2.414E-02 | 2.340E-02 | 2.056E-02 | 1.709E-02 | 1.420E-02 | 1.179E-02 | 1.027E-02 | 9.801E-03 | 8.145E-03 | 6.769E-03 |
| ru103 | 4.925E+02 | 4.754E+02 | 4.391E+02 | 3.224E+02 | 1.357E+02 | 4.620E+01 | 5.114E-01 | 8.111E-04 | 1.287E-06 | 2.005E-09 | 1.644E-11 | 3.181E-12 | 5.046E-15 | 8.004E-18 |
| rh103m | 4.872E+02 | 4.703E+02 | 4.344E+02 | 3.189E+02 | 1.342E+02 | 4.570E+01 | 5.059E-01 | 8.024E-04 | 1.273E-06 | 1.984E-09 | 1.626E-11 | 3.147E-12 | 4.992E-15 | 7.918E-18 |
| pd103 | 6.323E-06 | 5.827E-06 | 4.850E-06 | 2.375E-06 | 3.218E-07 | 2.672E-08 | 8.108E-13 | 2.768E-19 | 9.449E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 4.743E-12 | 4.586E-12 | 4.252E-12 | 3.170E-12 | 1.393E-12 | 5.001E-13 | 6.918E-15 | 1.510E-17 | 3.294E-20 | 7.069E-23 | 7.350E-25 | 1.543E-25 | 3.366E-28 | 7.346E-31 |
| ru106 | 1.147E+04 | 1.143E+04 | 1.133E+04 | 1.097E+04 | 1.001E+04 | 8.935E+03 | 5.554E+03 | 2.812E+03 | 1.424E+03 | 7.197E+02 | 4.334E+02 | 3.644E+02 | 1.845E+02 | 9.344E+01 |

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5 more years for cooling used fuel material fission products page 31

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rh106 | 1.147E+04 | 1.143E+04 | 1.133E+04 | 1.097E+04 | 1.001E+04 | 8.935E+03 | 5.554E+03 | 2.812E+03 | 1.424E+03 | 7.197E+02 | 4.334E+02 | 3.644E+02 | 1.845E+02 | 9.344E+01 |
| ag106m | 1.021E-16 | 8.638E-17 | 5.927E-17 | 1.370E-17 | 2.265E-19 | 1.372E-21 | 7.352E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 |
| ag108 | 6.111E-06 | 6.111E-06 | 6.111E-06 | 6.111E-06 | 6.109E-06 | 6.108E-06 | 6.101E-06 | 6.091E-06 | 6.082E-06 | 6.072E-06 | 6.065E-06 | 6.063E-06 | 6.053E-06 | 6.043E-06 |
| ag108m | 7.025E-05 | 7.024E-05 | 7.024E-05 | 7.024E-05 | 7.022E-05 | 7.020E-05 | 7.013E-05 | 7.002E-05 | 6.991E-05 | 6.979E-05 | 6.971E-05 | 6.968E-05 | 6.957E-05 | 6.946E-05 |
| ag109m | 6.028E-03 | 6.010E-03 | 5.969E-03 | 5.815E-03 | 5.402E-03 | 4.929E-03 | 3.360E-03 | 1.942E-03 | 1.122E-03 | 6.475E-04 | 4.303E-04 | 3.742E-04 | 2.163E-04 | 1.250E-04 |
| cd109 | 6.028E-03 | 6.010E-03 | 5.969E-03 | 5.815E-03 | 5.402E-03 | 4.929E-03 | 3.360E-03 | 1.942E-03 | 1.122E-03 | 6.475E-04 | 4.303E-04 | 3.742E-04 | 2.163E-04 | 1.250E-04 |
| ag110 | 1.238E+00 | 1.231E+00 | 1.215E+00 | 1.158E+00 | 1.011E+00 | 8.532E-01 | 4.204E-01 | 1.527E-01 | 5.544E-02 | 2.008E-02 | 9.438E-03 | 7.291E-03 | 2.648E-03 | 9.614E-04 |
| ag110m | 9.099E+01 | 9.049E+01 | 8.937E+01 | 8.513E+01 | 7.431E+01 | 6.273E+01 | 3.091E+01 | 1.123E+01 | 4.077E+00 | 1.476E+00 | 6.939E-01 | 5.361E-01 | 1.947E-01 | 7.069E-02 |
| ag111 | 3.485E-07 | 2.893E-07 | 1.903E-07 | 3.736E-08 | 3.913E-10 | 1.342E-12 | 6.966E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 | 2.490E-15 |
| cd113m | 1.940E-02 | 1.940E-02 | 1.939E-02 | 1.934E-02 | 1.921E-02 | 1.906E-02 | 1.841E-02 | 1.753E-02 | 1.669E-02 | 1.589E-02 | 1.532E-02 | 1.513E-02 | 1.440E-02 | 1.371E-02 |
| in113m | 1.026E-08 | 1.014E-08 | 9.869E-09 | 8.882E-09 | 6.612E-09 | 4.579E-09 | 9.858E-10 | 1.094E-10 | 1.214E-11 | 1.340E-12 | 2.604E-13 | 1.487E-13 | 1.651E-14 | 1.832E-15 |
| sn113 | 1.026E-08 | 1.013E-08 | 9.863E-09 | 8.876E-09 | 6.608E-09 | 4.576E-09 | 9.852E-10 | 1.094E-10 | 1.214E-11 | 1.339E-12 | 2.602E-13 | 1.486E-13 | 1.650E-14 | 1.831E-15 |
| in114 | 1.410E-04 | 1.371E-04 | 1.288E-04 | 1.008E-04 | 5.075E-05 | 2.161E-05 | 6.083E-07 | 3.671E-09 | 2.216E-11 | 1.319E-13 | 2.926E-15 | 7.959E-16 | 4.804E-18 | 2.899E-20 |
| in114m | 1.458E-04 | 1.417E-04 | 1.331E-04 | 1.042E-04 | 5.246E-05 | 2.233E-05 | 6.287E-07 | 3.795E-09 | 2.290E-11 | 1.363E-13 | 3.025E-15 | 8.227E-16 | 4.965E-18 | 2.997E-20 |
| cd115m | 3.675E-03 | 3.562E-03 | 3.321E-03 | 2.530E-03 | 1.180E-03 | 4.570E-02 | 8.555E-04 | 2.961E-06 | 1.018E-08 | 3.412E-11 | 4.960E-13 | 1.167E-13 | 3.994E-16 | 1.266E-18 |
| in115 | 3.715E-13 | 3.715E-13 | 3.715E-13 | 3.715E-13 | 3.715E-13 | 3.715E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 | 3.716E-13 |
| in115m | 3.904E-05 | 3.787E-05 | 3.529E-05 | 2.688E-05 | 1.254E-05 | 4.856E-06 | 9.195E-08 | 3.146E-10 | 1.076E-12 | 3.625E-15 | 5.270E-17 | 1.240E-17 | 4.243E-20 | 1.452E-22 |
| cd116 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 | 1.582E-17 |
| sn117m | 9.948E-06 | 8.984E-06 | 7.143E-06 | 2.928E-06 | 2.409E-07 | 1.076E-08 | 2.440E-14 | 2.033E-22 | 1.694E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 3.721E+00 | 3.703E+00 | 3.664E+00 | 3.515E+00 | 3.130E+00 | 2.710E+00 | 1.482E+00 | 6.251E-01 | 2.636E-01 | 1.109E-01 | 5.827E-02 | 4.676E-02 | 1.972E-02 | 8.315E-03 |
| sb120m | 3.393E-16 | 2.668E-16 | 1.552E-16 | 1.890E-17 | 5.194E-20 | 3.369E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 5.587E-01 | 5.586E-01 | 5.585E-01 | 5.581E-01 | 5.569E-01 | 5.555E-01 | 5.494E-01 | 5.408E-01 | 5.323E-01 | 5.239E-01 | 5.178E-01 | 5.157E-01 | 5.077E-01 | 4.997E-01 |
| sn121m | 7.199E-01 | 7.198E-01 | 7.197E-01 | 7.192E-01 | 7.176E-01 | 7.157E-01 | 7.078E-01 | 6.968E-01 | 6.859E-01 | 6.751E-01 | 6.673E-01 | 6.646E-01 | 6.542E-01 | 6.439E-01 |
| te121 | 2.115E-05 | 2.097E-05 | 2.057E-05 | 1.910E-05 | 1.553E-05 | 1.200E-05 | 4.092E-06 | 8.763E-07 | 1.877E-07 | 4.004E-08 | 1.270E-08 | 8.577E-09 | 1.837E-09 | 3.935E-10 |
| te121m | 2.107E-05 | 2.089E-05 | 2.050E-05 | 1.904E-05 | 1.548E-05 | 1.197E-05 | 4.078E-06 | 8.736E-07 | 1.871E-07 | 3.992E-08 | 1.266E-08 | 8.550E-09 | 1.832E-09 | 3.923E-10 |
| sn123 | 1.178E+01 | 1.166E+01 | 1.138E+01 | 1.036E+01 | 7.964E+00 | 5.741E+00 | 1.462E+00 | 2.063E-01 | 2.911E-02 | 4.085E-03 | 9.495E-04 | 5.765E-04 | 8.135E-05 | 1.148E-05 |
| te123m | 4.768E-02 | 4.713E-02 | 4.592E-02 | 4.147E-02 | 3.119E-02 | 2.188E-02 | 4.966E-03 | 5.946E-04 | 7.119E-05 | 8.474E-06 | 1.743E-06 | 1.015E-06 | 1.215E-07 | 1.455E-08 |
| sb124 | 1.123E+00 | 1.098E+00 | 1.042E+00 | 8.521E-01 | 4.847E-01 | 2.401E-01 | 1.274E-02 | 1.906E-04 | 2.850E-06 | 4.214E-08 | 1.839E-09 | 6.303E-10 | 9.426E-12 | 1.410E-13 |
| sn125 | 7.388E-06 | 6.399E-06 | 4.630E-06 | 1.316E-06 | 3.881E-08 | 4.831E-10 | 5.261E-18 | 2.104E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 2.203E+02 | 2.200E+02 | 2.193E+02 | 2.167E+02 | 2.095E+02 | 2.009E+02 | 1.666E+02 | 1.311E+02 | 1.020E+02 | 7.930E+01 | 6.577E+01 | 6.169E+01 | 4.799E+01 | 3.734E+01 |
| te125m

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe131m | 5.149E-04 | 4.580E-04 | 3.520E-04 | 1.264E-04 | 7.178E-06 | 2.019E-07 | 6.633E-14 | 3.480E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 1.429E-11 | 1.238E-11 | 8.979E-12 | 2.572E-12 | 7.783E-14 | 1.008E-15 | 1.892E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 1.749E-14 | 1.550E-14 | 1.182E-14 | 4.117E-15 | 2.147E-16 | 5.434E-18 | 1.148E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 4.224E-12 | 3.411E-12 | 2.108E-12 | 3.242E-13 | 1.716E-15 | 2.516E-18 | 3.585E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material fission products page 32

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| xe133 | 6.839E-10 | 5.250E-10 | 2.896E-10 | 2.864E-11 | 4.401E-14 | 1.384E-17 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba133 | 4.972E-04 | 4.970E-04 | 4.966E-04 | 4.951E-04 | 4.907E-04 | 4.853E-04 | 4.635E-04 | 4.339E-04 | 4.063E-04 | 3.803E-04 | 3.621E-04 | 3.561E-04 | 3.334E-04 | 3.121E-04 |
| cs134 | 2.461E+03 | 2.456E+03 | 2.446E+03 | 2.407E+03 | 2.301E+03 | 2.176E+03 | 1.721E+03 | 1.231E+03 | 8.801E+02 | 6.287E+02 | 4.897E+02 | 4.496E+02 | 3.215E+02 | 2.299E+02 |
| cs135 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 | 1.458E-02 |
| cs136 | 4.193E-03 | 3.773E-03 | 2.977E-03 | 1.184E-03 | 8.967E-05 | 3.608E-06 | 5.299E-12 | 2.371E-20 | 1.061E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 4.643E-04 | 4.179E-04 | 3.297E-04 | 1.312E-04 | 9.930E-06 | 3.995E-07 | 5.868E-13 | 2.625E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 1.955E+03 | 1.954E+03 | 1.954E+03 | 1.952E+03 | 1.946E+03 | 1.938E+03 | 1.907E+03 | 1.864E+03 | 1.821E+03 | 1.780E+03 | 1.750E+03 | 1.739E+03 | 1.700E+03 | 1.661E+03 |
| ba137m | 1.851E+03 | 1.851E+03 | 1.850E+03 | 1.848E+03 | 1.842E+03 | 1.835E+03 | 1.806E+03 | 1.765E+03 | 1.725E+03 | 1.685E+03 | 1.657E+03 | 1.647E+03 | 1.610E+03 | 1.573E+03 |
| la137 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 |
| la138 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 | 9.248E-12 |
| ce139 | 1.465E-01 | 1.450E-01 | 1.418E-01 | 1.298E-01 | 1.014E-01 | 7.461E-02 | 2.066E-02 | 3.287E-03 | 5.230E-04 | 8.280E-05 | 2.105E-05 | 1.318E-05 | 2.096E-06 | 3.336E-07 |
| ba140 | 5.923E-02 | 5.313E-02 | 4.160E-02 | 1.607E-02 | 1.120E-03 | 4.069E-05 | 3.893E-11 | 9.430E-20 | 2.284E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 6.821E-02 | 6.118E-02 | 4.791E-02 | 1.854E-02 | 1.290E-03 | 4.686E-05 | 4.483E-11 | 1.086E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 1.550E+02 | 1.485E+02 | 1.349E+02 | 9.292E+01 | 3.269E+01 | 8.902E+00 | 3.874E-02 | 1.615E-05 | 6.732E-09 | 2.747E-12 | 8.319E-15 | 1.145E-15 | 4.774E-19 | 1.990E-22 |
| pr143 | 1.146E-01 | 1.035E-01 | 8.225E-02 | 3.365E-02 | 2.754E-03 | 1.221E-04 | 2.691E-10 | 2.152E-18 | 1.721E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 7.079E-11 | 7.042E-11 | 6.969E-11 | 6.649E-11 | 5.849E-11 | 4.986E-11 | 2.456E-11 | 9.851E-13 | 3.952E-15 | 1.497E-17 | 5.003E-18 | 3.722E-18 | 1.157E-13 | 8.302E-14 |
| ce144 | 9.700E+03 | 9.653E+03 | 9.547E+03 | 9.150E+03 | 8.121E+03 | 7.001E+03 | 3.765E+03 | 1.549E+03 | 6.374E+02 | 2.617E+02 | 1.350E+02 | 1.077E+02 | 4.430E+01 | 1.823E+01 |
| pr144 | 9.700E+03 | 9.653E+03 | 9.548E+03 | 9.150E+03 | 8.122E+03 | 7.001E+03 | 3.765E+03 | 1.549E+03 | 6.375E+02 | 2.617E+02 | 1.350E+02 | 1.077E+02 | 4.430E+01 | 1.823E+01 |
| pr144m | 9.261E+01 | 9.216E+01 | 9.116E+01 | 8.736E+01 | 7.754E+01 | 6.685E+01 | 3.595E+01 | 1.479E+01 | 6.086E+00 | 2.498E+00 | 1.289E+00 | 1.028E+00 | 4.230E-01 | 1.740E-01 |
| nd144 | 1.541E-11 | 1.543E-11 | 1.546E-11 | 1.560E-11 | 1.595E-11 | 1.633E-11 | 1.743E-11 | 1.819E-11 | 1.850E-11 | 1.863E-11 | 1.867E-11 | 1.868E-11 | 1.870E-11 | 1.871E-11 |
| pm144 | 1.555E-08 | 1.549E-08 | 1.536E-08 | 1.486E-08 | 1.353E-08 | 1.204E-08 | 7.400E-09 | 3.686E-09 | 1.836E-09 | 9.128E-10 | 5.430E-10 | 4.546E-10 | 2.264E-10 | 1.128E-10 |
| pm145 | 6.510E-05 | 6.509E-05 | 6.507E-05 | 6.497E-05 | 6.468E-05 | 6.433E-05 | 6.278E-05 | 6.052E-05 | 5.827E-05 | 5.606E-05 | 5.446E-05 | 5.393E-05 | 5.186E-05 | 4.988E-05 |
| sm145 | 1.209E-05 | 1.204E-05 | 1.193E-05 | 1.151E-05 | 1.042E-05 | 9.200E-06 | 5.470E-06 | 2.599E-06 | 1.235E-06 | 5.856E-07 | 3.363E-07 | 2.793E-07 | 1.322E-07 | 6.282E-08 |
| pm146 | 3.088E-03 | 3.086E-03 | 3.081E-03 | 3.062E-03 | 3.011E-03 | 2.949E-03 | 2.702E-03 | 2.384E-03 | 2.103E-03 | 1.855E-03 | 1.690E-03 | 1.637E-03 | 1.444E-03 | 1.274E-03 |
| sm146 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.027E-09 | 1.028E-09 | 1.029E-09 | 1.034E-09 | 1.040E-09 | 1.045E-09 | 1.049E-09 | 1.052E-09 | 1.053E-09 | 1.057E-09 | 1.060E-09 |
| nd147 | 2.761E-03 | 2.433E-03 | 1.831E-03 | 6.068E-04 | 2.752E-05 | 5.851E-07 | 5.971E-14 | 5.875E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 2.604E+03 | 2.600E+03 | 2.592E+03 | 2.559E+03 | 2.470E+03 | 2.363E+03 | 1.965E+03 | 1.509E+03 | 1.159E+03 | 8.893E+02 | 7.305E+02 | 6.830E+02 | 5.245E+02 | 4.028E+02 |
| sm147 | 3.989E-08 | 3.998E-08 | 4.019E-08 | 4.100E-08 | 4.320E-08 | 4.584E-08 | 5.569E-08 | 6.698E-08 | 7.565E-08 | 8.232E-08 | 8.625E-08 | 8.743E-08 | 9.135E-08 | 9.436E-08 |
| eu147 | 2.712E-15 | 2.560E-15 | 2.249E-15 | 1.360E-15 | 3.322E-16 | 5.747E-17 | 3.752E-20 | 1.035E-24 | 2.857E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 8.031E-01 | 7.766E-01 | 7.201E-01 | 5.368E-01 | 2.358E-01 | 8.478E-02 | 1.171E-03 | 2.556E-06 | 5.578E-09 | 1.197E-11 | 1.245E-13 | 2.612E-14 | 5.701E-17 | 1.244E-19 |
| pm148m | 1.664E+01 | 1.609E+01 | 1.492E+01 | 1.112E+01 | 4.885E+00 | 1.756E+00 | 2.426E-02 | 5.295E-05 | 1.156E-07 | 2.480E-10 | 2.578E-12 | 5.411E-13 | 1.181E-15 | 2.577E-18 |
| sm148 | 8.647E-13 | 8.647E-13 | 8.648E-13 | 8.649E-13 | 8.649E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 | 8.650E-13 |
| eu149 | 1.390E-08 | 1.370E-08 | 1.325E-08 | 1.163E-08 | 8.073E-09 | 5.126E-09 | 7.679E-10 | 5.071E-11 | 3.349E-12 | 2.195E-13 | 2.897E-14 | 1.450E-14 | 9.573E-16 | 6.322E-17 |
| nd150 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 | 1.190E-15 |
| sm151 | 1.119E+01 | 1.119E+01 | 1.119E+01 | 1.118E+01 | 1.117E+01 | 1.116E+01 | 1.110E+01 | 1.101E+01 | 1.093E+01 | 1.085E+01 | 1.078E+01 | 1.076E+01 | 1.068E+01 | 1.060E+01 |
| gd151 | 1.032E-05 | 1.020E-05 | 9.949E-06 | 9.022E-06 | 6.860E-06 | 4.878E-06 | 1.173E-06 | 1.524E-07 | 1.981E-08 | 2.561E-09 | 5.599E-10 | 3.329E-10 | 4.327E-11 | 5.625E-12 |
| eu152 | 1.287E-01 | 1.287E-01 | 1.286E-01 | 1.283E-01 | 1.274E-01 | 1.263E-01 | 1.219E-01 | 1.158E-01 | 1.100E-01 | 1.045E-01 | 1.006E-01 | 9.931E-02 | 9.436E-02 | 8.965E-02 |
| gd152 | 2.892E-14 | 2.892E-14 | 2.894E-14 | 2.897E-14 | 2.901E-14 | 2.905E-14 | 2.918E-14 | 2.937E-14 | 2.958E-14 | 2.977E-14 | 2.991E-14 | 2.996E-14 | 3.012E-14 | 3.029E-14 |
| gd153 | 1.970E-01 | 1.958E-01 | 1.933E-01 | 1.838E-01 | 1.596E-01 | 1.338E-01 | 6.416E-02 | 2.240E-02 | 7.819E-03 | 2.722E-03 | 1.242E-03 | 9.502E-04 | 3.317E-04 | 1.158E-04 |
| eu154 | 2.062E+02 | 2.061E+02 | 2.059E+02 | 2.051E+02 | 2.029E+02 | 2.002E+02 | 1.893E+02 | 1.746E+02 | 1.611E+02 | 1.486E+02 | 1.399E+02 | 1.371E+02 | 1.265E+02 | 1.167E+02 |
| eu155 | 9.093E+01 | 9.086E+01 | 9.069E+01 | 9.006E+01 | 8.832E+01 | 8.619E+01 | 7.785E+01 | 6.729E+01 | 5.817E+01 | 5.026E+01 | 4.509E+01 | 4.344E+01 | 3.755E+01 | 3.246E+01 |
| eu156 | 7.907E-02 | 7.217E-02 | 5.877E-02 | 2.645E-02 | 2.827E-03 | 1.748E-04 | 1.545E-09 | 9.024E-17 | 5.271E-24 | 2.942E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tb157 | 4.259E-07 | 4.258E-07 | 4.258E-07 | 4.256E-07 | 4.250E-07 | 4.243E-07 | 4.214E-07 | 4.174E-07 | 4.133E-07 | 4.093E-07 | 4.063E-07 | 4.053E-07 | 4.014E-07 | 3.975E-07 |
| tb158 | 1.791E-05 | 1.791E-05 | 1.791E-05 | 1.790E-05 | 1.789E-05 | 1.788E-05 | 1.783E-05 | 1.776E-05 | 1.770E-05 | 1.763E-05 | 1.758E-05 | 1.756E-05 | 1.749E-05 | 1.743E-05 |
| dy159 | 2.050E-05 | 2.030E-05 | 1.987E-05 | 1.827E-05 | 1.444E-05 | 1.077E-05 | 3.168E-06 | 5.493E-07 | 9.526E-08 | 1.644E-08 | 4.455E-09 | 2.851E-09 | 4.944E-10 | 8.573E-11 |
| tb160 | 3.079E+00 | 3.020E+00 | 2.893E+00 | 2.446E+00 | 1.529E+00 | 8.521E-01 | 7.392E-02 | 2.234E-03 | 6.749E-05 | 2.020E-06 | 1.489E-07 | 6.104E-08 | 1.845E-09 | 5.574E-11 |
| tb161 | 1.317E-09 | 1.078E-09 | 6.860E-10 | 1.184E-10 | 8.662E-13 | 1.899E-15 | 1.456E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ho163 | 1.594E-09 | 1.594E-09 | 1.594E-09 | 1.594E-09 | 1.594E-09 | 1.594E-09 | 1.594E-09 | 1.593E-09 | 1.593E-09 | 1.593E-09 | 1.593E-09 | 1.593E-09 | 1.592E-09 | 1.592E-09 |
| ho166m | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.325E-05 | 1.324E-05 | 1.323E-05 | 1.323E-05 | 1.323E-05 | 1.322E-05 | 1.321E-05 |
| tm167 | 1.884E-16 | 1.622E-16 | 1.158E-16 | 3.120E-17 | 7.933E-19 | 8.208E-21 | 4.126E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm168 | 1.287E-07 | 1.268E-07 | 1.226E-07 | 1.076E-07 | 7.473E-08 | 4.745E-08 | 7.108E-09 | 4.694E-10 | 3.100E-11 | 2.032E-12 | 2.682E-13 | 1.342E-13 | 8.862E-15 | 5.852E-16 |
| er169 | 7.085E-10 | 6.113E-10 | 4.386E-10 | 1.205E-10 | 3.240E-12 | 3.593E-14 | 2.411E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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5 more years for cooling used fuel material fission products page 33

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nuclide radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| yb169 | 1.447E-09 | 1.385E-09 | 1.257E-09 | 8.604E-10 | 2.978E-10 | 7.952E-11 | 3.184E-13 | 1.178E-16 | 4.360E-20 | 1.579E-23 | 4.376E-26 | 5.844E-27 | 2.163E-30 | 0.000E+00 |
| tm170 | 4.520E-03 | 4.472E-03 | 4.365E-03 | 3.972E-03 | 3.050E-03 | 2.195E-03 | 5.554E-04 | 7.765E-05 | 1.086E-05 | 1.510E-06 | 3.486E-07 | 2.112E-07 | 2.953E-08 | 4.128E-09 |
| tm171 | 2.426E-03 | 2.421E-03 | 2.410E-03 | 2.369E-03 | 2.257E-03 | 2.125E-03 | 1.651E-03 | 1.151E-03 | 8.026E-04 | 5.589E-04 | 4.272E-04 | 3.897E-04 | 2.716E-04 | 1.894E-04 |
| total | 6.121E+04 | 6.084E+04 | 6.003E+04 | 5.709E+04 | 5.034E+04 | 4.401E+04 | 2.815E+04 | 1.695E+04 | 1.145E+04 | 8.599E+03 | 7.357E+03 | 7.038E+03 | 6.119E+03 | 5.534E+03 |

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5 more years for cooling used fuel material fission products page 34

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element radioactivity, curies
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h | 1.025E+01 | 1.025E+01 | 1.024E+01 | 1.021E+01 | 1.014E+01 | 1.004E+01 | 9.656E+00 | 9.128E+00 | 8.629E+00 | 8.156E+00 | 7.821E+00 | 7.710E+00 | 7.288E+00 | 6.890E+00 |
| ga | 1.519E-17 | 1.511E-17 | 1.494E-17 | 1.428E-17 | 1.260E-17 | 1.078E-17 | 5.615E-18 | 2.207E-18 | 8.675E-19 | 3.401E-19 | 1.696E-19 | 1.337E-19 | 5.255E-20 | 2.066E-20 |
| ge | 6.416E-08 | 6.306E-08 | 6.066E-08 | 5.215E-08 | 3.416E-08 | 2.018E-08 | 2.233E-09 | 9.563E-11 | 4.095E-12 | 1.739E-13 | 1.662E-14 | 7.445E-15 | 3.189E-16 | 1.367E-17 |
| as | 7.050E-08 | 6.893E-08 | 6.558E-08 | 5.464E-08 | 3.453E-08 | 2.021E-08 | 2.233E-09 | 9.563E-11 | 4.095E-12 | 1.739E-13 | 1.662E-14 | 7.445E-15 | 3.188E-16 | 1.365E-17 |
| se | 1.254E-03 | 1.254E-03 | 1.254E-03 | 1.254E-03 | 1.253E-03 | 1.253E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 | 1.252E-03 |
| kr | 1.019E+02 | 1.019E+02 | 1.018E+02 | 1.015E+02 | 1.006E+02 | 9.955E+01 | 9.517E+01 | 8.923E+01 | 8.367E+01 | 7.843E+01 | 7.476E+01 | 7.354E+01 | 6.895E+01 | 6.465E+01 |
| rb | 3.445E-03 | 3.201E-03 | 2.715E-03 | 1.434E-03 | 2.504E-04 | 3.553E-05 | 1.292E-06 | 2.650E-07 | 2.115E-07 | 2.087E-07 | 2.086E-07 | 2.086E-07 | 2.085E-07 | 2.085E-07 |
| sr | 1.021E+03 | 1.012E+03 | 9.927E+02 | 9.273E+02 | 8.085E+02 | 7.368E+02 | 6.743E+02 | 6.568E+02 | 6.411E+02 | 6.259E+02 | 6.147E+02 | 6.110E+02 | 5.965E+02 | 5.823E+02 |
| y | 1.438E+03 | 1.420E+03 | 1.382E+03 | 1.252E+03 | 1.002E+03 | 8.372E+02 | 6.804E+02 | 6.570E+02 | 6.413E+02 | 6.260E+02 | 6.149E+02 | 6.111E+02 | 5.966E+02 | 5.824E+02 |
| zr | 1.749E+03 | 1.712E+03 | 1.631E+03 | 1.349E+03 | 7.938E+02 | 4.102E+02 | 2.597E+01 | 5.226E-01 | 3.314E-02 | 2.373E-02 | 2.355E-02 | 2.355E-02 | 2.354E-02 | 2.354E-02 |
| nb | 3.631E+03 | 3.558E+03 | 3.397E+03 | 2.837E+03 | 1.701E+03 | 8.914E+02 | 5.737E+01 | 1.145E+00 | 2.656E-02 | 5.781E-03 | 5.939E-03 | 6.111E-03 | 6.812E-03 | 7.491E-03 |
| mo | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.971E-09 | 4.970E-09 | 4.969E-09 | 4.969E-09 | 4.968E-09 | 4.967E-09 | 4.967E-09 | 4.966E-09 | 4.965E-09 |
| tc | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 | 2.447E-01 |
| ru | 1.196E+04 | 1.190E+04 | 1.177E+04 | 1.129E+04 | 1.015E+04 | 8.981E+03 | 5.554E+03 | 2.812E+03 | 1.424E+03 | 7.197E+02 | 4.334E+02 | 3.644E+02 | 1.845E+02 | 9.344E+01 |
| rh | 1.196E+04 | 1.190E+04 | 1.177E+04 | 1.129E+04 | 1.015E+04 | 8.980E+03 | 5.555E+03 | 2.812E+03 | 1.424E+03 | 7.197E+02 | 4.335E+02 | 3.645E+02 | 1.845E+02 | 9.345E+01 |
| pd | 4.519E-03 | 4.518E-03 | 4.517E-03 | 4.515E-03 | 4.513E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 | 4.512E-03 |
| ag | 9.224E+01 | 9.173E+01 | 9.059E+01 | 8.629E+01 | 7.532E+01 | 6.359E+01 | 3.134E+01 | 1.138E+01 | 4.133E+00 | 1.497E+00 | 7.039E-01 | 5.438E-01 | 1.976E-01 | 7.185E-02 |
| cd | 3.929E-01 | 3.816E-01 | 3.575E-01 | 2.781E-01 | 1.427E-01 | 6.969E-02 | 2.264E-02 | 1.948E-02 | 1.781E-02 | 1.654E-02 | 1.575E-02 | 1.550E-02 | 1.462E-02 | 1.384E-02 |
| in | 3.258E-04 | 3.168E-04 | 2.971E-04 | 2.318E-04 | 1.158E-04 | 4.880E-05 | 1.330E-06 | 7.890E-09 | 5.865E-11 | 1.983E-12 | 6.379E-13 | 5.219E-13 | 3.881E-13 | 3.734E-13 |
| sn | 1.679E+01 | 1.665E+01 | 1.633E+01 | 1.516E+01 | 1.238E+01 | 9.730E+00 | 4.209E+00 | 2.076E+00 | 1.518E+00 | 1.322E+00 | 1.252E+00 | 1.235E+00 | 1.189E+00 | 1.160E+00 |
| sb | 2.214E+02 | 2.211E+02 | 2.203E+02 | 2.175E+02 | 2.100E+02 | 2.011E+02 | 1.686E+02 | 1.311E+02 | 1.020E+02 | 7.931E+01 | 6.578E+01 | 6.170E+01 | 4.800E+01 | 3.734E+01 |
| te | 1.640E+02 | 1.623E+02 | 1.585E+02 | 1.450E+02 | 1.163E+02 | 9.244E+01 | 4.971E+01 | 3.294E+01 | 2.506E+01 | 1.943E+01 | 1.611E+01 | 1.511E+01 | 1.175E+01 | 9.142E+00 |
| i | 7.598E-04 | 7.569E-04 | 7.518E-04 | 7.434E-04 | 7.409E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 | 7.408E-04 |
| xe | 5.399E-04 | 4.821E-04 | 3.741E-04 | 1.422E-04 | 1.340E-05 | 2.150E-06 | 1.516E-08 | 1.453E-11 | 1.392E-14 | 1.308E-17 | 7.366E-20 | 1.253E-20 | 1.201E-23 | 1.151E-26 |
| cs | 4.416E+03 | 4.411E+03 | 4.400E+03 | 4.359E+03 | 4.247E+03 | 4.114E+03 | 3.629E+03 | 3.095E+03 | 2.701E+03 | 2.409E+03 | 2.239E+03 | 2.189E+03 | 2.021E+03 | 1.891E+03 |
| ba | 1.851E+03 | 1.851E+03 | 1.850E+03 | 1.848E+03 | 1.842E+03 | 1.835E+03 | 1.806E+03 | 1.765E+03 | 1.725E+03 | 1.685E+03 | 1.657E+03 | 1.647E+03 | 1.610E+03 | 1.573E+03 |
| la | 6.821E-02 | 6.118E-02 | 4.791E-02 | 1.854E-02 | 1.291E-03 | 4.718E-05 | 3.244E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 | 3.243E-07 |
| ce | 9.855E+03 | 9.801E+03 | 9.683E+03 | 9.243E+03 | 8.154E+03 | 7.010E+03 | 3.765E+03 | 1.549E+03 | 6.374E+02 | 2.617E+02 | 1.350E+02 | 1.077E+02 | 4.430E+01 | 1.823E+01 |
| pr | 9.793E+03 | 9.745E+03 | 9.639E+03 | 9.237E+03 | 8.199E+03 | 7.068E+03 | 3.801E+03 | 1.564E+03 | 6.435E+02 | 2.642E+02 | 1.363E+02 | 1.087E+02 | 4.473E+01 | 1.840E+01 |
| nd | 2.761E+03 | 2.433E+03 | 1.831E+03 | 6.068E+04 | 2.752E+05 | 5.851E+07 | 1.789E-11 | 1.819E-11 | 1.850E-11 | 1.863E-11 | 1.867E-11 | 1.868E-11 | 1.870E-11 | 1.871E-11 |
| pm | 2.621E+03 | 2.617E+03 | 2.607E+03 | 2.571E+03 | 2.475E+03 | 2.365E+03 | 1.965E+03 | 1.509E+03 | 1.159E+03 | 8.894E+02 | 7.305E+02 | 6.830E+02 | 5.245E+02 | 4.028E+02 |
| sm | 1.119E+01 | 1.119E+01 | 1.119E+01 | 1.118E+01 | 1.117E+01 | 1.116E+01 | 1.110E+01 | 1.101E+01 | 1.093E+01 | 1.085E+01 | 1.078E+01 | 1.076E+01 | 1.068E+01 | 1.060E+01 |
| eu | 2.974E+02 | 2.972E+02 | 2.968E+02 | 2.954E+02 | 2.914E+02 | 2.865E+02 | 2.672E+02 | 2.420E+02 | 2.194E+02 | 1.990E+02 | 1.851E+02 | 1.806E+02 | 1.641E+02 | 1.493E+02 |
| gd | 1.970E-01 | 1.958E-01 | 1.933E-01 | 1.838E-01 | 1.596E-01 | 1.338E-01 | 6.416E-02 | 2.240E-02 | 7.819E-03 | 2.722E-03 | 1.242E-03 | 9.502E-04 | 3.317E-04 | 1.158E-04 |
| tb | 3.079E+00 | 3.020E+00 | 2.893E+00 | 2.446E+00 | 1.529E+00 | 8.521E-01 | 7.393E-02 | 2.252E-03 | 8.560E-05 | 2.006E-05 | 1.813E-05 | 1.803E-05 | 1.790E-05 | 1.782E-05 |
| dy | 2.050E-05 | 2.030E-05 | 1.987E-05 | 1.827E-05 | 1.444E-05 | 1.077E-05 | 3.168E-06 | 5.493E-07 | 9.526E-08 | 1.644E-08 | 4.455E-09 | 2.851E-09 | 4.944E-10 | 8.573E-11 |
| ho | 1.327E-05 | 1.327E-05 | 1.327E-05 | 1.327E-05 | 1.326E-05 | 1.326E-05 | 1.326E-05 | 1.325E-05 | 1.324E-05 | 1.323E-05 | 1.323E-05 | 1.323E-05 | 1.322E-05 | 1.321E-05 |
| er | 7.085E-10 | 6.113E-10 | 4.386E-10 | 1.205E-10 | 3.240E-12 | 3.593E-14 | 2.411E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| tm | 6.946E-03 | 6.893E-03 | 6.775E-03 | 6.341E-03 | 5.307E-03 | 4.320E-03 | 2.207E-03 | 1.229E-03 | 8.134E-04 | 5.605E-04 | 4.275E-04 | 3.899E-04 | 2.717E-04 | 1.894E-04 |
| yb | 1.447E-09 | 1.385E-09 | 1.257E-09 | 8.604E-10 | 2.978E-10 | 7.952E-11 | 3.184E-13 | 1.178E-16 | 4.360E-20 | 1.579E-23 | 4.376E-26 | 5.844E-27 | 2.163E-30 | 0.000E+00 |
| totals | 6.121E+04 | 6.084E+04 | 6.003E+04 | 5.709E+04 | 5.034E+04 | 4.401E+04 | 2.815E+04 | 1.695E+04 | 1.145E+04 | 8.599E+03 | 7.357E+03 | 7.038E+03 | 6.119E+03 | 5.534E+03 |

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5 more years for cooling used fuel material fission products page 35

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nuclide thermal power, watts
basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h 3 | 3.458E-04 | 3.457E-04 | 3.454E-04 | 3.445E-04 | 3.419E-04 | 3.387E-04 | 3.257E-04 | 3.079E-04 | 2.910E-04 | 2.751E-04 | 2.638E-04 | 2.600E-04 | 2.458E-04 | 2.324E-04 |
| ga 68 | 1.522E-19 | 1.515E-19 | 1.497E-19 | 1.432E-19 | 1.263E-19 | 1.081E-19 | 5.628E-20 | 2.212E-20 | 8.696E-21 | 3.409E-21 | 1.700E-21 | 1.340E-21 | 5.268E-22 | 2.071E-22 |
| ge 71 | 2.002E-16 | 1.773E-16 | 1.349E-16 | 4.669E-17 | 2.392E-18 | 5.918E-20 | 1.138E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ge 73m | 2.516E-11 | 2.473E-11 | 2.379E-11 | 2.045E-11 | 1.340E-11 | 7.914E-12 | 8.758E-13 | 3.751E-14 | 1.606E-15 | 6.818E-17 | 6.516E-18 | 2.920E-18 | 1.250E-19 | 5.354E-21 |
| as 73 | 3.709E-12 | 3.645E-12 | 3.506E-12 | 3.015E-12 | 1.975E-12 | 1.167E-12 | 1.291E-13 | 5.529E-15 | 2.367E-16 | 1.005E-17 | 9.605E-19 | 4.304E-19 | 1.843E-20 | 7.892E-22 |
| as 74 | 3.853E-11 | 3.564E-11 | 2.900E-11 | 1.511E-11 | 2.234E-12 | 2.069E-13 | 1.496E-18 | 4.496E-24 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| se 75 | 4.238E-09 | 4.190E-09 | 4.082E-09 | 3.689E-09 | 2.778E-09 | 1.952E-09 | 4.463E-10 | 5.400E-11 | 6.534E-12 | 7.859E-13 | 1.629E-13 | 9.509E-14 | 1.151E-14 | 1.392E-15 |
| se 79 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 | 4.142E-07 |
| kr 81 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 | 7.853E-13 |
| kr 83m | 4.412E-09 | 4.341E-09 | 4.187E-09 | 3.637E-09 | 2.453E-09 | 1.502E-09 | 1.932E-10 | 1.027E-11 | 5.455E-13 | 2.875E-14 | 3.226E-15 | 1.527E-15 | 8.114E-17 | 4.311E-18 |
| rb 83 | 7.184E-08 | 7.070E-08 | 6.819E-08 | 5.923E-08 | 3.994E-08 | 2.446E-08 | 3.147E-09 | 1.672E-10 | 8.883E-12 | 4.682E-13 | 5.254E-14 | 2.487E-14 | 1.321E-15 | 7.021E-17 |
| rb 84 | 4.401E-07 | 4.219E-07 | 3.836E-07 | 2.651E-07 | 9.418E-08 | 2.597E-08 | 1.190E-10 | 5.342E-14 | 2.398E-17 | 1.054E-20 | 3.372E-23 | 4.731E-24 | 2.124E-27 | 9.532E-31 |
| kr 85 | 1.528E-01 | 1.527E-01 | 1.525E-01 | 1.518E-01 | 1.508E-01 | 1.492E-01 | 1.426E-01 | 1.337E-01 | 1.257E-01 | 1.175E-01 | 1.120E-01 | 1.103E-01 | 1.033E-01 | 9.690E-02 |
| sr 85 | 1.709E-08 | 1.673E-08 | 1.594E-

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y 91 | 2.686E+00 | 2.623E+00 | 2.487E+00 | 2.021E+00 | 1.131E+00 | 5.491E-01 | 2.677E-02 | 3.546E-04 | 4.697E-06 | 6.149E-08 | 2.451E-09 | 8.145E-10 | 1.079E-11 | 1.429E-13 |
| nb 91 | 9.297E-14 | 9.297E-14 | 9.297E-14 | 9.297E-14 | 9.295E-14 | 9.294E-14 | 9.287E-14 | 9.278E-14 | 9.268E-14 | 9.259E-14 | 9.252E-14 | 9.249E-14 | 9.240E-14 | 9.231E-14 |
| nb 91m | 2.095E-15 | 2.048E-15 | 1.946E-15 | 1.594E-15 | 3.123E-16 | 4.554E-16 | 4.495E-17 | 3.906E-19 | 6.114E-21 | 1.461E-23 | 4.271E-24 | 1.481E-24 | 2.318E-26 | 3.629E-28 |
| nb 92 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 | 1.343E-14 |
| nb 92m | 8.913E-17 | 7.775E-17 | 5.718E-17 | 1.731E-17 | 6.095E-19 | 9.458E-21 | 2.588E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| zr 93 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 | 2.659E-06 |
| nb 93m | 3.463E-07 | 3.472E-07 | 3.491E-07 | 3.566E-07 | 3.774E-07 | 4.032E-07 | 5.091E-07 | 6.553E-07 | 7.953E-07 | 9.297E-07 | 1.026E-06 | 1.058E-06 | 1.181E-06 | 1.299E-06 |
| mo 93 | 4.757E-13 | 4.757E-13 | 4.757E-13 | 4.757E-13 | 4.757E-13 | 4.757E-13 | 4.756E-13 | 4.755E-13 | 4.754E-13 | 4.754E-13 | 4.753E-13 | 4.753E-13 | 4.752E-13 | 4.751E-13 |
| nb 94 | 8.829E-08 | 8.829E-08 | 8.829E-08 | 8.829E-08 | 8.829E-08 | 8.829E-08 | 8.828E-08 | 8.828E-08 | 8.828E-08 | 8.827E-08 | 8.827E-08 | 8.827E-08 | 8.827E-08 | 8.827E-08 |
| zr 95 | 8.816E-00 | 8.627E-00 | 8.217E-00 | 6.790E-00 | 4.000E-00 | 2.067E-00 | 1.308E-01 | 2.526E-03 | 4.836E-05 | 9.202E-07 | 4.843E-08 | 1.770E-08 | 3.404E-10 | 6.546E-12 |
| nb 95 | 1.732E+01 | 1.697E+01 | 1.620E+01 | 1.353E+01 | 8.114E+00 | 4.256E+00 | 1.737E-01 | 3.444E-03 | 1.048E-04 | 1.994E-06 | 1.019E-07 | 3.716E-08 | 7.368E-10 | 1.419E-11 |
| nb 95m | 2.960E-02 | 2.896E-02 | 2.759E-02 | 2.283E-02 | 1.343E-02 | 6.939E-03 | 4.390E-04 | 8.443E-06 | 1.624E-07 | 3.089E-09 | 1.626E-10 | 5.941E-11 | 1.143E-12 | 2.198E-14 |
| tc 95 | 7.009E-16 | 6.852E-16 | 6.510E-16 | 5.336E-16 | 3.058E-16 | 1.529E-16 | 8.433E-18 | 1.333E-19 | 2.106E-21 | 3.291E-23 | 1.496E-24 | 5.200E-25 | 8.218E-27 | 0.000E+00 |
| tc 95m | 1.560E-14 | 1.525E-14 | 1.449E-14 | 1.188E-14 | 6.806E-15 | 3.403E-15 | 1.877E-16 | 2.966E-18 | 4.687E-20 | 7.324E-22 | 3.330E-23 | 1.157E-23 | 1.829E-25 | 2.890E-27 |
| zr 96 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 | 2.312E-17 |
| tc 97 | 1.189E-14 | 1.189E-14 | 1.190E-14 | 1.191E-14 | 1.195E-14 | 1.198E-14 | 1.202E-14 | 1.203E-14 | 1.203E-14 | 1.203E-14 | 1.203E-14 | 1.203E-14 | 1.203E-14 | 1.203E-14 |
| tc 97m | 1.240E-08 | 1.222E-08 | 1.180E-08 | 1.033E-08 | 7.113E-09 | 4.469E-09 | 6.407E-10 | 3.974E-11 | 2.465E-12 | 1.517E-13 | 1.911E-14 | 9.411E-15 | 5.837E-16 | 3.620E-17 |
| tc 98 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 | 1.035E-09 |
| tc 99 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.007E-05 | 8.006E-05 | 8.006E-05 | 8.006E-05 | 8.006E-05 | 8.006E-05 | 8.006E-05 |
| rh 99 | 1.763E-18 | 1.618E-18 | 1.333E-18 | 6.275E-19 | 7.611E-20 | 5.507E-21 | 9.397E-26 | 1.407E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| mo100 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 | 7.746E-17 |
| rh101 | 1.507E-08 | 1.506E-08 | 1.502E-08 | 1.487E-08 | 1.445E-08 | 1.395E-08 | 1.205E-08 | 9.770E-09 | 7.920E-09 | 6.417E-09 | 5.487E-09 | 5.202E-09 | 4.217E-09 | 3.418E-09 |
| rh102 | 3.044E-04 | 3.024E-04 | 2.978E-04 | 2.809E-04 | 2.385E-04 | 1.945E-04 | 8.305E-05 | 2.463E-05 | 7.367E-06 | 2.250E-06 | 9.664E-07 | 7.329E-07 | 2.736E-07 | 1.284E-07 |
| rh102m | 3.213E-04 | 3.210E-04 | 3.203E-04 | 3.175E-04 | 3.097E-04 | 3.002E-04 | 2.638E-04 | 2.192E-04 | 1.822E-04 | 1.513E-04 | 1.318E-04 | 1.257E-04 | 1.045E-04 | 8.684E-05 |
| ru103 | 1.641E+00 | 1.584E+00 | 1.463E+00 | 1.074E+00 | 4.522E-01 | 1.540E-01 | 1.704E-03 | 2.703E-06 | 4.288E-09 | 6.683E-12 | 5.479E-14 | 1.060E-14 | 1.682E-17 | 2.668E-20 |
| rh103m | 1.124E-01 | 1.085E-01 | 1.002E-01 | 7.355E-02 | 3.096E-02 | 1.054E-02 | 1.167E-04 | 1.851E-07 | 2.936E-10 | 4.576E-13 | 3.751E-15 | 7.258E-16 | 1.151E-18 | 1.826E-21 |
| pd103 | 7.576E-10 | 6.982E-10 | 5.811E-10 | 2.846E-10 | 3.856E-11 | 3.201E-12 | 9.715E-17 | 3.317E-23 | 1.132E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ag105 | 1.397E-14 | 1.351E-14 | 1.253E-14 | 9.339E-15 | 4.103E-15 | 1.473E-15 | 2.038E-17 | 4.448E-20 | 9.706E-23 | 2.083E-25 | 2.166E-27 | 4.545E-28 | 9.918E-31 | 2.164E-33 |
| ru106 | 6.820E-01 | 6.794E-01 | 6.737E-01 | 6.521E-01 | 5.952E-01 | 5.312E-01 | 3.302E-01 | 1.672E-01 | 8.467E-02 | 4.279E-02 | 2.577E-02 | 2.167E-02 | 1.097E-02 | 5.556E-03 |
| rh106 | 1.101E+02 | 1.097E+02 | 1.088E+02 | 1.053E+02 | 9.610E+01 | 8.577E+01 | 5.332E+01 | 2.700E+01 | 1.367E+01 | 6.909E+00 | 4.161E+00 | 3.499E+00 | 1.772E+00 | 8.970E-01 |

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5 more years for cooling used fuel material fission products page 36

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nuclide thermal power, watts
basis =~15.1 kgHHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ag106m | 1.707E-18 | 1.444E-18 | 9.904E-19 | 2.289E-19 | 3.785E-21 | 2.293E-23 | 1.229E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pd107 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 | 2.640E-07 |
| ag108 | 2.269E-08 | 2.269E-08 | 2.269E-08 | 2.269E-08 | 2.269E-08 | 2.268E-08 | 2.266E-08 | 2.262E-08 | 2.259E-08 | 2.255E-08 | 2.252E-08 | 2.251E-08 | 2.248E-08 | 2.244E-08 |
| ag108m | 6.814E-07 | 6.814E-07 | 6.814E-07 | 6.813E-07 | 6.812E-07 | 6.810E-07 | 6.802E-07 | 6.792E-07 | 6.783E-07 | 6.770E-07 | 6.762E-07 | 6.759E-07 | 6.749E-07 | 6.738E-07 |
| ag109m | 3.110E-06 | 3.100E-06 | 3.079E-06 | 2.999E-06 | 2.787E-06 | 2.543E-06 | 1.732E-06 | 1.002E-06 | 5.789E-07 | 3.340E-07 | 2.220E-07 | 1.930E-07 | 1.116E-07 | 6.447E-08 |
| cd109 | 7.540E-07 | 7.518E-07 | 7.467E-07 | 7.273E-07 | 6.757E-07 | 6.165E-07 | 4.203E-07 | 2.429E-07 | 1.404E-07 | 8.100E-08 | 5.383E-08 | 4.681E-08 | 2.705E-08 | 1.563E-08 |
| ag110 | 8.866E-03 | 8.817E-03 | 8.708E-03 | 8.295E-03 | 7.240E-03 | 6.113E-03 | 3.012E-03 | 1.094E-03 | 3.972E-04 | 1.438E-04 | 6.762E-05 | 5.224E-05 | 1.897E-05 | 6.888E-06 |
| ag110m | 1.529E+00 | 1.521E+00 | 1.502E+00 | 1.430E+00 | 1.249E+00 | 1.054E+00 | 5.194E-01 | 1.886E-01 | 6.850E-02 | 2.481E-02 | 1.166E-02 | 9.008E-03 | 3.271E-03 | 1.188E-03 |
| ag111 | 7.795E-10 | 6.472E-10 | 4.258E-10 | 8.357E-11 | 8.752E-13 | 3.001E-15 | 1.491E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cd113 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 | 1.367E-18 |
| cd113m | 2.136E-05 | 2.136E-05 | 2.134E-05 | 2.129E-05 | 2.115E-05 | 2.098E-05 | 2.027E-05 | 1.930E-05 | 1.838E-05 | 1.749E-05 | 1.686E-05 | 1.665E-05 | 1.586E-05 | 1.510E-05 |
| in113m | 2.382E-11 | 2.354E-11 | 2.291E-11 | 2.062E-11 | 1.535E-11 | 1.063E-11 | 2.288E-12 | 2.540E-13 | 2.819E-14 | 3.110E-15 | 3.432E-16 | 3.832E-17 | 4.253E-18 | 4.253E-18 |
| sn113 | 1.809E-12 | 1.787E-12 | 1.739E-12 | 1.565E-12 | 1.165E-12 | 8.071E-13 | 1.738E-13 | 1.929E-14 | 2.141E-15 | 2.362E-16 | 4.590E-17 | 2.621E-17 | 2.909E-18 | 3.229E-19 |
| in114 | 6.488E-07 | 6.309E-07 | 5.923E-07 | 4.636E-07 | 2.335E-07 | 9.939E-08 | 2.798E-09 | 1.689E-11 | 1.019E-13 | 6.067E-16 | 1.346E-17 | 3.661E-18 | 2.210E-20 | 1.334E-22 |
| in114m | 1.925E-07 | 1.872E-07 | 1.757E-07 | 1.376E-07 | 6.927E-08 | 2.949E-08 | 8.302E-10 | 5.011E-12 | 3.024E-14 | 1.800E-16 | 3.994E-18 | 1.086E-18 | 6.557E-21 | 3.957E-23 |
| cd115m | 1.388E-03 | 1.346E-03 | 1.255E-03 | 9.557E-04 | 4.460E-04 | 1.727E-04 | 3.270E-06 | 1.119E-08 | 3.827E-11 | 1.289E-13 | 1.874E-15 | 4.410E-16 | 1.509E-18 | 5.162E-21 |
| in115 | 3.391E-16 | 3.391E-16 | 3.391E-16 | 3.391E-16 | 3.391E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 | 3.392E-16 |
| in115m | 7.738E-08 | 7.505E-08 | 6.994E-08 | 5.327E-08 | 2.486E-08 | 9.624E-09 | 1.822E-10 | 6.235E-13 | 2.133E-15 | 7.185E-18 | 1.045E-19 | 2.458E-20 | 8.410E-23 | 2.877E-25 |
| cd116 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 | 1.317E-19 |
| sn117m | 1.861E-08 | 1.681E-08 | 1.336E-08 | 5.477E-09 | 4.508E-10 | 2.013E-11 | 4.564E-17 | 3.804E-25 | 3.170E-33 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn119m | 1.932E-03 | 1.923E-03 | 1.902E-03 | 1.825E-03 | 1.625E-03 | 1.407E-03 | 7.696E-04 | 3.245E-04 | 1.369E-04 | 5.757E-05 | 3.025E-05 | 2.428E-05 | 1.024E-05 | 4.317E-06 |
| sb120m | 5.050E-18 | 3.970E-18 | 2.310E-18 | 2.812E-19 | 7.730E-22 | 5.014E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sn121 | 3.836E-04 | 3.835E-04 | 3.835E-04 | 3.832E-04 | 3.824E-04 | 3.813E-04 | 3.772E-04 | 3.713E-04 | 3.654E-04 | 3.597E-04 | 3.555E-04 | 3.541E-04 | 3.485E-04 | 3.431E-04 |
| sn121m | 1.621E-04 | 1.621E-04 | 1.621E-04 | 1.619E-04 | 1.616E-04 | 1.612E-04 | 1.594E-04 | 1.569E-04 | 1.544E-04 | 1.520E-04 | 1.502E-04 | 1.496E-04 | 1.473E-04 | 1.450E-04 |
| te121 | 7.372E-08 | 7.310E-08 | 7.172E-08 | 6.659E-08 | 5.414E-08 | 4.184E-08 | 1.426E-08 | 3.055E-09 | 6.544E-10 | 1.396E-10 | 4.428E-11 | 2.990E-11 | 6.405E-12 | 1.372E-12 |
| te121m | 3.691E-08 | 3.660E-08 | 3.591E-08 | 3.336E-08 | 2.712E-08 | 2.097E-08 | 7.145E-09 | 1.531E-09 | 3.279E-10 | 6.994E-11 | 2.218E-11 | 1.498E-11 | 3.209E-12 | 6.874E-13 |
| sn123 | 3.702E-02 | 3.663E-02 | 3.575E-02 | 3.255E-02 | 2.502E-02 | 1.804E-02 | 4.593E-03 | 6.481E-04 | 9.145E-05 | 1.284E-05 | 2.983E-06 | 1.811E-06 | 2.556E-07 | 3.607E-08 |
| te123m | 7.033E-05 | 6.952E-05 | 6.772E-05 | 6.117E-05 | 4.600E-05 | 3.227E-05 | 7.324E-06 | 8.769E-07 | 1.050E-07 | 1.250E-08 | 2.570E-09 | 1.497E-09 | 1.792E-10 | 2.145E-11 |
| sb124 | 1.488E-02 | 1.454E-02 | 1.381E-02 | 1.129E-02 | 6.422E-03 | 3.181E-03 | 1.688E-04 | 2.525E-06 | 3.777E-08 | 5.583E-10 | 2.436E-11 | 8.350E-12 | 1.249E-13 | 1.868E-15 |
| sn125 | 4.974E-08 | 4.308E-08 | 3.117E-08 | 8.856E-09 | 2.613E-10 | 3.253E-12 | 3.542E-20 | 1.417E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb125 | 6.966E-01 | 6.956E-01 | 6.935E-01 | 6.852E-01 | 6.625E-01 | 6.353E-01 | 5.330E-01 | 4.147E-01 | 3.226E-01 | 2.508E-01 | 2.080E-01 | 1.951E-01 | 1.518E-01 | 1.181E-01 |
| te125m | 4.618E-02 | 4.612E-02 | 4.599E-02 | 4.550E-02 | 4.409E-02 | 4.235E-02 | 3.558E-02 | 2.768E-02 | 2.154E-02 | 1.674E-02 | 1.389E-02 | 1.303E-02 | 1.013E-02 | 7.883E-03 |
| i125 | 1.265E-10 | 1.235E-10 | 1.172E-10 | 9.557E-11 | 5.395E-11 | 2.647E-11 | 1.351E-12 | 1.909E-14 | 2.698E-16 | 3.768E-18 | 1.576E-19 | 5.325E-20 | 7.526E-22 | 1.064E-23 |
| sn126 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.323E-06 | 7.322E-06 |
| sb126 | 1.987E-05 | 1.986E-05 | 1.980E-05 | 1.963E-05 | 1.953E-05 | 1.953E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 | 1.952E-05 |
| sb126m | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 | 9.820E-05 |
| i126 | 2.586E-10 | 2.323E-10 | 1.825E-10 | 7.143E-11 | 5.165E-12 | 1.963E-13 | 2.270E-19 | 7.215E-28 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| sb127 | 2.168E-18 | 1.512E-18 | 6.726E-19 | 2.880E-20 | 4.247E-24 | 7.220E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| te127 | 6.731E-02 | 6.646E-02 | 6.461E-02 | 5.778E-02 | 4.231E-02 | 2.871E-02 | 5.672E-03 | 5.568E-04 | 5.466E-05 | 5.332E-06 | 9.455E-07 | 5.234E-07 | 5.138E-08 | 5.044E-09 |
| te127m | 2.761E-02 | 2.726E-02 | 2.649E-02 | 2.370E-02 | 1.736E-02 | 1.177E-02 | 2.327E-03 | 2.284E-04 | 2.242E-05 | 2.187E-06 | 3.878E-07 | 2.147E-07 | 2.107E-08 | 2.069E-09 |
| sb127 | 4.632E-08 | 4.459E-08 | 4.093E-08 | 2.933E-08 | 1.154E-08 | 3.611E-09 | 2.400E-10 | 2.992E-14 | 2.579E-17 | 2.425E-20 | 1.365E-22 | 2.322E-23 | 2.226E-26 | 2.132E-29 |
| te128 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 | 1.914E-18 |
| te129 | 1.452E-02 | 1.393E-02 | 1.270E-02 | 8.848E-03 | 3.220E-03 | 9.148E-04 | 4.750E-06 | 2.550E-09 | 1.369E-12 | 7.200E-16 | 2.633E-18 | 3.865E-19 | 2.075E-22 | 1.114E-25 |
| te129m | 1.168E-02 | 1.121E-02 | 1.021E-02 | 7.119E-03 | 2.591E-03 | 7.360E-04 | 3.822E-06 | 2.052E-09 | 1.101E-12 | 5.793E-16 | 2.118E-18 | 3.110E-19 | 1.669E-22 | 8.963E-26 |
| i129 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 | 3.264E-07 |
| xe129m | 2.906E-12 | 2.486E-12 | 1.750E-12 | 4.464E-13 | 9.740E-15 | 8.331E-17 | 1.889E-25 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| i131 | 6.348E-08 | 5.341E-08 | 3.621E-08 | 7.987E-09 | 1.160E-10 | 5.973E-13 | 1.625E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe131m | 4.973E-07 | 4.424E-07 | 3.399E-07 | 1.221E-07 | 6.932E-09 | 1.950E-10 | 6.407E-17 | 3.361E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs131 | 2.510E-15 | 2.176E-15 | 1.577E-15 | 4.519E-16 | 1.367E-17 | 1.770E-19 | 3.324E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba131 | 5.550E-17 | 4.920E-17 | 3.751E-17 | 1.306E-17 | 6.814E-19 | 1.724E-20 | 3.644E-27 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs132 | 1.824E-14 | 1.473E-14 | 9.100E-15 | 1.400E-15 | 7.409E-18 | 1.086E-20 | 1.548E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| xe133 | 7.421E-13 | 5.697E-13 | 3.142E-13 | 3.108E-14 | 4.776E-17 | 1.502E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

1

5 more years for cooling used fuel material fission products page 37

0

nuclide thermal power, watts
basis =~15.1 kgHHM (nrm'd IHM 1/4-ass. at 1 MT)

| | initial | 2.0 d | 6.5 d | 24.0 d | 73.0 d | 134.0 d | 389.0 d | 754.0 d | 1119.0 d | 1485.0 d | 1757.0 d | 1850.0 d | 2215.0 d | 2580.0 d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ba133 | 1.347E-06 | 1.347E-06 | 1.346E-06 | 1.342E-06 | 1.330E-06 | 1.315E-06 | 1.256E-06 | 1.176E-06 | 1.101E-06 | 1.031E-06 | 9.813E-07 | 9.650E-07 | 9.035E-07 | 8.459E-07 |
| cs134 | 2.507E+01 | 2.502E+01 | 2.492E+01 | 2.452E+01 | 2.344E+01 | 2.216E+01 | 1.753E+01 | 1.254E+01 | 8.965E+00 | 6.405E+00 | 4.988E+00 | 4.580E+00 | 3.275E+00 | 2.342E+00 |
| cs135 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 | 6.541E-06 |
| cs136 | 5.096E-05 | 4.587E-05 | 3.619E-05 | 1.440E-05 | 1.090E-06 | 4.386E-08 | 6.441E-14 | 2.882E-22 | 1.289E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ba136m | 5.586E-06 | 5.027E-06 | 3.966E-06 | 1.578E-06 | 1.195E-07 | 4.807E-09 | 7.059E-15 | 3.158E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| cs137 | 2.079E+00 | 2.079E+00 | 2.078E+00 | 2.076E+00 | 2.062E+00 | 2.029E+00 | 1.983E+00 | 1.937E+00 | 1.893E+00 | 1.861E+00 | 1.850E+00 | 1.808E+00 | 1.767E+00 | 1.726E+00 |
| ba137m | 7.257E+00 | 7.256E+00 | 7.254E+00 | 7.246E+00 | 7.224E+00 | 7.196E+00 | 7.081E+00 | 6.920E+00 | 6.762E+00 | 6.608E+00 | 6.495E+00 | 6.457E+00 | 6.310E+00 | 6.167E+00 |
| la137 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.187E-11 | 6.186E-11 |
| la138 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 | 6.930E-14 |
| ce139 | 1.700E-04 | 1.683E-04 | 1.645E-04 | 1.507E-04 | 1.177E-04 | 8.658E-05 | 2.397E-05 | 3.814E-06 | 6.069E-07 | 9.608E-08 | 2.442E-08 | 1.529E-08 | 2.432E-09 | 3.870E-10 |
| ba140 | 1.757E-04 | 1.576E-04 | 1.234E-04 | 4.767E-05 | 3.324E-06 | 1.207E-07 | 1.155E-13 | 2.797E-22 | 6.776E-31 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| la140 | 1.150E-03 | 1.031E-03 | 8.076E-04 | 3.126E-04 | 2.175E-05 | 7.899E-07 | 7.557E-13 | 1.831E-21 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ce141 | 2.268E-03 | 2.173E-03 | 1.974E-03 | 1.360E-03 | 4.782E-02 | 1.302E-02 | 5.567E-05 | 2.363E-08 | 9.849E-12 | 4.009E-15 | 1.217E-17 | 1.676E-18 | 6.985E-22 | 2.910E-25 |
| pr143 | 2.141E-04 | 1.933E-04 | 1.536E-04 | 6.285E-05 | 5.144E-06 | 2.281E-07 | 5.026E-13 | 4.020E-21 | 3.215E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm143 | 1.360E-13 | 1.352E-13 | 1.337E-13 | 1.277E-13 | 1.123E-13 | 9.576E-14 | 4.915E-14 | 1.892E-14 | 7.282E-15 | 2.796E-15 | 1.372E-15 | 1.076E-15 | 4.142E-16 | 1.594E-16 |
| ce144 | 6.359E+00 | 6.328E+00 | 6.259E+00 | 5.998E+00 | 5.324E+00 | 4.590E+00 | 2.468E+00 | 1.016E+00 | 4.179E-01 | 1.715E-01 | 8.850E-02 | 7.058E-02 | 2.904E-02 | 1.195E-02 |
| pr144 | 7.115E+01 | 7.080E+01 | 7.003E+01 | 6.711E+01 | 5.957E+01 | 5.135E+01 | 2.762E+01 | 1.136E+01 | 4.676E+00 | 1.919E+00 | 9.902E-01 | 7.897E-01 | 3.250E-01 | 1.337E-01 |
| pr144m | 3.210E-02 | 3.194E-02 | 3.159E-02 | 3.028E-02 | 2.687E-02 | 2.317E-02 | 1.246E-02 | 5.126E-03 | 2.109E-03 | 8.658E-04 | 4.467E-04 | 3.563E-04 | 1.466E-04 | 6.032E-05 |
| nd144 | 1.739E-13 | 1.741E-13 | 1.745E-13 | 1.760E-13 | 1.800E-13 | 1.843E-13 | 1.967E-13 | 2.052E-13 | 2.087E-13 | 2.102E-13 | 2.107E-13 | 2.108E-13 | 2.110E-13 | 2.111E-13 |
| pm144 | 1.457E-10 | 1.451E-10 | 1.439E-10 | 1.392E-10 | 1.267E-10 | 1.128E-10 | 6.391E-11 | 3.452E-11 | 1.720E-11 | 8.549E-12 | 5.085E-12 | 4.278E-12 | 2.421E-12 | 1.056E-12 |
| pm145 | 1.739E-08 | 1.738E-08 | 1.738E-08 | 1.735E-08 | 1.728E-08 | 1.718E-08 | 1.677E-08 | 1.616E-08 | 1.556E-08 | 1.497E-08 | 1.455E-08 | 1.440E-08 | 1.385E-08 | 1.332E-08 |
| sm145 | 6.598E-09 | 6.571E-09 | 6.511E-09 | 6.283E-09 | 5.686E-09 | 5.021E-09 | 2.985E-09 | 1.418E-09 | 6.740E-10 | 3.196E-10 | 1.836E-10 | 1.519E-10 | 7.216E-11 | 3.428E-11 |
| pm146 | 1.543E-05 | 1.541E-05 | 1.539E-05 | 1.530E-05 | 1.504E-05 | 1.473E-05 | 1.350E-05 | 1.191E-05 | 1.051E-05 | 9.266E-06 | 8.441E-06 | 8.176E-06 | 7.213E-06 | 6.364E-06 |
| sm146 | 1.538E-11 | 1.538E-11 | 1.538E-11 | 1.539E-11 | 1.540E-11 | 1.542E-11 | 1.549E-11 | 1.557E-11 | 1.565E-11 | 1.572E-11 | 1.576E-11 | 1.578E-11 | 1.583E-11 | 1.588E-11 |
| nd147 | 6.746E-06 | 5.946E-06 | 4.475E-06 | 1.483E-06 | 6.724E-08 | 1.430E-09 | 1.459E-16 | 1.436E-26 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm147 | 9.536E-01 | 9.522E-01 | 9.491E-01 | 9.372E-01 | 9.045E-01 | 8.655E-01 | 7.197E-01 | 5.527E-01 | 4.244E-01 | 3.257E-01 | 2.675E-01 | 2.501E-01 | 1.921E-01 | 1.475E-01 |
| sm147 | 5.459E-10 | 5.471E-10 | 5.500E-10 | 5.610E-10 | 5.912E-10 | 6.273E-10 | 7.622E-10 | 9.167E-10 | 1.035E-09 | 1.127E-09 | 1.180E-09 | 1.196E-09 | 1.250E-09 | 1.291E-09 |
| eu147 | 7.671E-18 | 7.242E-18 | 6.363E-18 | 3.847E-18 | 9.398E-19 | 1.626E-19 | 1.061E-27 | 2.929E-27 | 2.081E-32 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| pm148 | 6.207E-03 | 6.002E-03 | 5.565E-03 | 4.149E-03 | 1.822E-03 | 6.552E-04 | 9.053E-06 | 1.976E-08 | 4.311E-11 | 9.251E-14 | 9.619E-16 | 2.019E-16 | 4.406E-19 | 9.614E-22 |
| pm148m | 2.130E-01 | 2.060E-01 | 1.910E-01 | 1.424E-01 | 6.254E-02 | 2.246E-02 | 3.107E-04 | 6.780E-07 | 1.479E-09 | 3.175E-12 | 3.301E-14 | 6.928E-15 | 1.512E-17 | 3.299E-20 |
| sm148 | 1.017E-14 | 1.017E-14 | 1.017E-14 | 1.017E-14 | 1.017E-14 | 1.017E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 | 1.018E-14 |
| eu149 | 7.018E-12 | 6.915E-12 | 6.687E-12 | 5.870E-12 | 4.076E-12 | 2.588E-12 | 3.876E-13 | 2.560E-14 | 1.691E-15 | 1.108E-16 | 1.463E-17 | 7.318E-18 | 4.833E-19 | 3.191E-20 |
| nd150 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 | 1.188E-17 |
| sm151 | 1.314E-03 | 1.314E-03 | 1.314E-03 | 1.314E-03 | 1.312E-03 | 1.311E-03 | 1.304E-03 | 1.294E-03 | 1.284E-03 | 1.274E-03 | 1.267E-03 | 1.264E-03 | 1.255E-03 | 1.245E-03 |
| gd151 | 6.582E-09 | 6.509E-09 | 6.347E-09 | 5.755E-09 | 4.377E-09 | 3.134E-09 | 7.525E-10 | 1.482E-10 | 2.572E-11 | 4.464E-12 

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     yb169   3.688E-12 3.532E-12 3.204E-12 2.194E-12 7.594E-13 2.027E-13 8.118E-16 3.004E-19 1.112E-22 4.026E-26 1.116E-28 1.490E-29 5.514E-33 0.000E+00
1
    5 more years for cooling used fuel material                                                   fission products         page   38
0                                                   nuclide thermal power, watts
                                                    basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
     tm170   8.897E-06 8.801E-06 8.590E-06 7.817E-06 6.003E-06 4.321E-06 1.093E-06 1.528E-07 2.137E-08 2.972E-09 6.861E-10 4.156E-10 5.811E-11 8.126E-12
     tm171   3.745E-07 3.738E-07 3.721E-07 3.657E-07 3.484E-07 3.281E-07 2.550E-07 1.777E-07 1.239E-07 8.630E-08 6.595E-08 6.016E-08 4.194E-08 2.924E-08
    total    2.651E+02 2.635E+02 2.601E+02 2.475E+02 2.182E+02 1.902E+02 1.191E+02 6.833E+01 4.326E+01 3.025E+01 2.463E+01 2.320E+01 1.915E+01 1.667E+01
1
    5 more years for cooling used fuel material                                                   fission products         page   39
0                                                   element thermal power, watts
                                                    basis =~15.1 kgIHM (nrm'd IHM 1/4-ass. at 1 MT)
              initial      2.0 d     6.5 d    24.0 d    73.0 d   134.0 d   389.0 d   754.0 d  1119.0 d  1485.0 d  1757.0 d  1850.0 d  2215.0 d  2580.0 d
       h     3.458E-04 3.457E-04 3.454E-04 3.445E-04 3.419E-04 3.387E-04 3.257E-04 3.079E-04 2.910E-04 2.751E-04 2.638E-04 2.600E-04 2.458E-04 2.324E-04
      ga     1.522E-19 1.515E-19 1.497E-19 1.432E-19 1.263E-19 1.081E-19 5.628E-20 2.212E-20 8.696E-21 3.409E-21 1.700E-21 1.340E-21 5.268E-22 2.071E-22
      ge     2.516E-11 2.473E-11 2.379E-11 2.045E-11 1.340E-11 7.914E-12 8.758E-13 3.751E-14 1.606E-15 6.818E-17 6.516E-18 2.920E-18 1.250E-19 5.355E-21
      as     4.224E-11 3.928E-11 3.341E-11 1.812E-11 4.209E-12 1.373E-12 1.291E-13 5.529E-15 2.367E-16 1.005E-17 9.605E-19 4.304E-19 1.843E-20 7.892E-22
      se     4.185E-07 4.184E-07 4.183E-07 4.179E-07 4.170E-07 4.162E-07 4.147E-07 4.143E-07 4.142E-07 4.142E-07 4.142E-07 4.142E-07 4.142E-07 4.142E-07
      kr     1.528E-01 1.527E-01 1.526E-01 1.521E-01 1.508E-01 1.492E-01 1.426E-01 1.337E-01 1.254E-01 1.175E-01 1.120E-01 1.102E-01 1.033E-01 9.690E-02
      rb     1.564E-05 1.454E-05 1.233E-05 6.520E-06 1.135E-06 1.540E-07 3.375E-09 2.682E-10 1.099E-10 1.015E-10 1.010E-10 1.010E-10 1.010E-10 1.010E-10
      sr     1.949E+00 1.918E+00 1.851E+00 1.626E+00 1.219E+00 9.768E-01 7.864E-01 7.623E-01 7.441E-01 7.264E-01 7.135E-01 7.091E-01 6.923E-01 6.758E-01
       y     6.505E+00 6.441E+00 6.304E+00 5.834E+00 4.931E+00 4.334E+00 3.748E+00 3.634E+00 3.547E+00 3.462E+00 3.401E+00 3.380E+00 3.300E+00 3.221E+00
      zr     8.816E+00 8.627E+00 8.217E+00 6.799E+00 4.000E+00 2.067E+00 1.308E-01 2.517E-03 5.102E-05 3.579E-06 2.707E-06 2.676E-06 2.659E-06 2.659E-06
      nb     1.735E+01 1.700E+01 1.623E+01 1.355E+01 8.127E+00 4.259E+00 2.741E-01 5.453E-03 1.059E-04 3.015E-06 1.216E-06 1.184E-06 1.270E-06 1.387E-06
      mo     4.758E-13 4.758E-13 4.758E-13 4.758E-13 4.758E-13 4.757E-13 4.757E-13 4.756E-13 4.755E-13 4.754E-13 4.754E-13 4.754E-13 4.753E-13 4.752E-13
      tc     8.008E-05 8.008E-05 8.008E-05 8.008E-05 8.007E-05 8.007E-05 8.007E-05 8.007E-05 8.007E-05 8.007E-05 8.007E-05 8.007E-05 8.006E-05 8.006E-05
      ru     2.323E+00 2.264E+00 2.137E+00 1.726E+00 1.047E+00 6.852E-01 3.319E-01 1.672E-01 8.467E-02 4.279E-02 2.577E-02 2.167E-02 1.097E-02 5.556E-03
      rh     1.102E+02 1.098E+02 1.089E+02 1.054E+02 9.613E+01 8.578E+01 5.332E+01 2.700E+01 1.367E+01 6.909E+00 4.161E+00 3.499E+00 1.772E+00 8.971E-01
      pd     2.648E-07 2.647E-07 2.646E-07 2.643E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07 2.640E-07
      ag     1.538E+00 1.529E+00 1.510E+00 1.439E+00 1.256E+00 1.060E+00 5.225E-01 1.897E-01 6.890E-02 2.495E-02 1.173E-02 9.061E-03 3.291E-03 1.195E-03
      cd     1.410E-03 1.368E-03 1.277E-03 9.777E-04 4.678E-04 1.943E-04 2.396E-05 1.955E-05 1.852E-05 1.757E-05 1.692E-05 1.670E-05 1.588E-05 1.511E-05
      in     9.187E-07 8.931E-07 8.380E-07 6.545E-07 3.276E-07 1.385E-07 3.813E-09 2.278E-11 1.628E-13 4.243E-15 9.611E-16 6.892E-16 3.775E-16 3.434E-16
      sn     3.951E-02 3.910E-02 3.821E-02 3.493E-02 2.720E-02 2.000E-02 5.906E-03 1.508E-03 7.555E-04 5.895E-04 5.463E-04 5.371E-04 5.137E-04 4.998E-04
      sb     7.116E-01 7.103E-01 7.074E-01 6.966E-01 6.690E-01 6.386E-01 5.333E-01 4.148E-01 3.227E-01 2.509E-01 2.081E-01 1.952E-01 1.519E-01 1.182E-01
      te     1.674E-01 1.650E-01 1.601E-01 1.430E-01 1.096E-01 8.451E-02 4.360E-02 2.847E-02 2.161E-02 1.675E-02 1.389E-02 1.303E-02 1.013E-02 7.883E-03
       i     3.903E-07 3.802E-07 3.629E-07 3.346E-07 3.266E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07 3.264E-07
      xe     5.436E-07 4.869E-07 3.809E-07 1.514E-07 1.847E-08 3.806E-09 2.810E-11 2.692E-14 2.579E-17 2.425E-20 1.365E-22 2.323E-23 2.226E-26 2.132E-29
      cs     2.715E+01 2.710E+01 2.700E+01 2.660E+01 2.551E+01 2.423E+01 1.956E+01 1.452E+01 1.090E+01 8.298E+00 6.849E+00 6.430E+00 5.083E+00 4.108E+00
      ba     7.257E+00 7.256E+00 7.254E+00 7.246E+00 7.224E+00 7.196E+00 7.081E+00 6.920E+00 6.762E+00 6.608E+00 6.495E+00 6.457E+00 6.310E+00 6.167E+00
      la     1.150E-03 1.031E-03 8.076E-04 3.126E-04 2.175E-05 7.900E-07 6.269E-11 6.194E-11 6.194E-11 6.194E-11 6.194E-11 6.194E-11 6.193E-11 6.193E-11
      ce     6.585E+00 6.545E+00 6.456E+00 6.134E+00 5.372E+00 4.603E+00 2.468E+00 1.016E+00 4.179E-01 1.715E-01 8.850E-02 7.058E-02 2.904E-02 1.195E-02
      pr     7.118E+01 7.083E+01 7.006E+01 6.714E+01 5.960E+01 5.138E+01 2.763E+01 1.137E+01 4.678E+00 1.920E+00 9.907E-01 7.901E-01 3.251E-01 1.338E-01
      nd     6.746E-06 5.946E-06 4.475E-06 1.483E-06 6.724E-08 1.430E-09 1.969E-13 2.052E-13 2.088E-13 2.102E-13 2.107E-13 2.108E-13 2.110E-13 2.111E-13
      pm     1.173E+00 1.164E+00 1.146E+00 1.084E+00 9.689E-01 8.886E-01 7.200E-01 5.527E-01 4.244E-01 3.257E-01 2.675E-01 2.501E-01 1.921E-01 1.475E-01
      sm     1.314E-03 1.314E-03 1.314E-03 1.314E-03 1.312E-03 1.311E-03 1.304E-03 1.294E-03 1.284E-03 1.274E-03 1.267E-03 1.264E-03 1.255E-03 1.245E-03
      eu     1.921E+00 1.920E+00 1.918E+00 1.910E+00 1.889E+00 1.863E+00 1.758E+00 1.619E+00 1.491E+00 1.373E+00 1.291E+00 1.264E+00 1.165E+00 1.073E+00
      gd     1.719E-04 1.709E-04 1.687E-04 1.604E-04 1.393E-04 1.168E-04 5.600E-05 1.955E-05 6.825E-06 2.376E-06 1.084E-06 8.293E-07 2.895E-07 1.011E-07
      tb     2.523E-02 2.475E-02 2.371E-02 2.005E-02 1.253E-02 6.983E-03 6.059E-04 1.840E-05 6.490E-07 1.121E-07 9.645E-08 9.564E-08 9.479E-08 9.441E-08
      dy     6.929E-09 6.863E-09 6.716E-09 6.175E-09 4.881E-09 3.642E-09 1.071E-09 1.857E-10 3.220E-11 5.557E-12 1.506E-12 9.637E-13 1.671E-13 2.898E-14
      ho     1.367E-07 1.367E-07 1.367E-07 1.367E-07 1.367E-07 1.367E-07 1.366E-07 1.365E-07 1.364E-07 1.364E-07 1.363E-07 1.363E-07 1.362E-07 1.361E-07
      er     4.314E-13 3.722E-13 2.670E-13 7.339E-14 1.973E-15 2.187E-17 1.468E-25 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
      tm     9.272E-06 9.176E-06 8.964E-06 8.184E-06 6.352E-06 4.649E-06 1.348E-06 3.306E-07 1.453E-07 8.927E-08 6.664E-08 6.058E-08 4.200E-08 2.925E-08
      yb     3.688E-12 3.532E-12 3.204E-12 2.194E-12 7.594E-13 2.027E-13 8.118E-16 3.004E-19 1.112E-22 4.026E-26 1.116E-28 1.490E-29 5.514E-33 0.000E+00
  totals     2.651E+02 2.635E+02 2.601E+02 2.475E+02 2.182E+02 1.902E+02 1.191E+02 6.833E+01 4.326E+01 3.025E+01 2.463E+01 2.320E+01 1.915E+01 1.667E+01

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# APPENDIX C.

# MOX FUEL ROD NUCLIDE WEIGHT FRACTIONS AND ACTIVITIES

## APPENDIX C. MOX FUEL ROD NUCLIDE WEIGHT FRACTIONS AND ACTIVITIES

**Table C-1. MOX Fuel Rod B4 (high Pu): Nuclide mass in grams per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 1.169E-12 | 1.215E-12 | 1.217E-12 | 1.232E-12 | 1.246E-12 |
| **ac227** | 7.377E-10 | 3.125E-09 | 3.255E-09 | 3.769E-09 | 4.286E-09 |
| **ag105** | 9.491E-15 | 2.200E-27 | 4.618E-28 | 1.008E-30 | 2.199E-33 |
| **ag107** | 1.543E-04 | 4.958E-04 | 5.142E-04 | 5.861E-04 | 6.581E-04 |
| **ag108** | 7.206E-13 | 7.153E-13 | 7.153E-13 | 7.140E-13 | 7.126E-13 |
| **ag108m** | 8.011E-04 | 7.952E-04 | 7.952E-04 | 7.939E-04 | 7.926E-04 |
| **ag109** | 2.314E+02 | 2.314E+02 | 2.314E+02 | 2.314E+02 | 2.314E+02 |
| **ag109m** | 2.195E-10 | 1.624E-11 | 1.412E-11 | 8.163E-12 | 4.716E-12 |
| **ag110** | 2.327E-08 | 1.897E-10 | 1.466E-10 | 5.321E-11 | 1.933E-11 |
| **ag110m** | 1.501E+00 | 1.224E-02 | 9.451E-03 | 3.432E-03 | 1.246E-03 |
| **ag111** | 1.708E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **al27** | 4.876E-14 | 4.876E-14 | 4.876E-14 | 4.876E-14 | 4.876E-14 |
| **am241** | 4.308E+02 | 1.495E+03 | 1.545E+03 | 1.736E+03 | 1.917E+03 |
| **am242** | 5.635E-05 | 5.505E-05 | 5.498E-05 | 5.471E-05 | 5.444E-05 |
| **am242m** | 4.368E+00 | 4.267E+00 | 4.261E+00 | 4.241E+00 | 4.220E+00 |
| **am243** | 3.849E+02 | 3.848E+02 | 3.847E+02 | 3.847E+02 | 3.847E+02 |
| **am244** | 2.919E-15 | 2.024E-15 | 1.985E-15 | 1.838E-15 | 1.702E-15 |
| **am245** | 3.154E-14 | 7.391E-16 | 6.040E-16 | 2.740E-16 | 1.242E-16 |
| **ar36** | 6.445E-14 | 6.445E-14 | 6.445E-14 | 6.445E-14 | 6.445E-14 |
| **ar38** | 6.862E-14 | 6.862E-14 | 6.862E-14 | 6.862E-14 | 6.862E-14 |
| **ar39** | 1.202E-16 | 1.188E-16 | 1.187E-16 | 1.184E-16 | 1.180E-16 |
| **ar40** | 7.258E-14 | 7.258E-14 | 7.258E-14 | 7.258E-14 | 7.258E-14 |
| **as73** | 1.565E-10 | 4.988E-17 | 2.235E-17 | 9.570E-19 | 4.098E-20 |
| **as74** | 1.962E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **as75** | 1.898E-01 | 1.898E-01 | 1.898E-01 | 1.898E-01 | 1.898E-01 |
| **au197** | 2.289E-13 | 2.289E-13 | 2.289E-13 | 2.289E-13 | 2.289E-13 |
| **b10** | 6.123E-11 | 3.283E-10 | 3.426E-10 | 3.989E-10 | 4.551E-10 |
| **b11** | 6.961E-08 | 6.961E-08 | 6.961E-08 | 6.961E-08 | 6.961E-08 |
| **ba130** | 1.896E-13 | 1.896E-13 | 1.896E-13 | 1.896E-13 | 1.896E-13 |
| **ba131** | 4.764E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba132** | 3.311E-04 | 3.311E-04 | 3.311E-04 | 3.311E-04 | 3.311E-04 |
| **ba133** | 2.104E-04 | 1.539E-04 | 1.513E-04 | 1.417E-04 | 1.326E-04 |
| **ba134** | 1.188E+02 | 2.470E+02 | 2.497E+02 | 2.582E+02 | 2.644E+02 |
| **ba135** | 5.269E-01 | 5.280E-01 | 5.281E-01 | 5.284E-01 | 5.286E-01 |
| **ba136** | 5.189E+01 | 5.189E+01 | 5.189E+01 | 5.189E+01 | 5.189E+01 |
| **ba136m** | 3.638E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137** | 9.128E+01 | 2.705E+02 | 2.795E+02 | 3.146E+02 | 3.489E+02 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bal37m** | 2.643E-04 | 2.369E-04 | 2.355E-04 | 2.302E-04 | 2.249E-04 |
| **ba138** | 1.726E+03 | 1.726E+03 | 1.726E+03 | 1.726E+03 | 1.726E+03 |
| **ba140** | 1.537E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be10** | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 | 1.226E-04 |
| **be9** | 2.370E-06 | 2.370E-06 | 2.370E-06 | 2.370E-06 | 2.370E-06 |
| **bi208** | 1.121E-15 | 1.121E-15 | 1.121E-15 | 1.121E-15 | 1.121E-15 |
| **bi209** | 1.026E-10 | 2.354E-10 | 2.427E-10 | 2.715E-10 | 3.006E-10 |
| **bi210** | 3.253E-14 | 3.318E-14 | 3.351E-14 | 3.522E-14 | 3.767E-14 |
| **bi210m** | 1.493E-15 | 1.493E-15 | 1.493E-15 | 1.493E-15 | 1.493E-15 |
| **bi211** | 1.191E-16 | 5.440E-16 | 5.556E-16 | 6.560E-16 | 7.457E-16 |
| **bi212** | 1.816E-10 | 1.144E-09 | 1.186E-09 | 1.331E-09 | 1.453E-09 |
| **bi213** | 3.504E-15 | 3.642E-15 | 3.648E-15 | 3.691E-15 | 3.733E-15 |
| **bk247** | 5.591E-13 | 5.578E-13 | 5.578E-13 | 5.575E-13 | 5.572E-13 |
| **bk248** | 2.315E-11 | 1.606E-11 | 1.575E-11 | 1.458E-11 | 1.350E-11 |
| **bk249** | 8.276E-06 | 1.939E-07 | 1.586E-07 | 7.192E-08 | 3.262E-08 |
| **bk250** | 2.713E-15 | 3.515E-17 | 2.790E-17 | 1.139E-17 | 4.785E-18 |
| **br79** | 3.356E-03 | 3.424E-03 | 3.428E-03 | 3.442E-03 | 3.457E-03 |
| **br81** | 2.591E+01 | 2.591E+01 | 2.591E+01 | 2.591E+01 | 2.591E+01 |
| **c12** | 7.655E-02 | 7.655E-02 | 7.655E-02 | 7.655E-02 | 7.655E-02 |
| **c13** | 1.209E+01 | 1.209E+01 | 1.209E+01 | 1.209E+01 | 1.209E+01 |
| **c14** | 3.707E-04 | 3.705E-04 | 3.705E-04 | 3.704E-04 | 3.704E-04 |
| **ca40** | 7.206E-14 | 7.206E-14 | 7.206E-14 | 7.206E-14 | 7.206E-14 |
| **ca41** | 4.008E-17 | 4.008E-17 | 4.008E-17 | 4.008E-17 | 4.008E-17 |
| **ca42** | 7.602E-14 | 7.602E-14 | 7.602E-14 | 7.602E-14 | 7.602E-14 |
| **ca43** | 7.661E-14 | 7.661E-14 | 7.661E-14 | 7.661E-14 | 7.661E-14 |
| **ca44** | 8.058E-14 | 8.058E-14 | 8.058E-14 | 8.058E-14 | 8.058E-14 |
| **ca46** | 8.302E-14 | 8.302E-14 | 8.302E-14 | 8.302E-14 | 8.302E-14 |
| **ca48** | 8.659E-14 | 8.659E-14 | 8.659E-14 | 8.659E-14 | 8.659E-14 |
| **cd106** | 3.078E-13 | 3.078E-13 | 3.078E-13 | 3.078E-13 | 3.078E-13 |
| **cd108** | 1.643E-03 | 1.643E-03 | 1.643E-03 | 1.643E-03 | 1.643E-03 |
| **cd109** | 2.209E-04 | 1.635E-05 | 1.422E-05 | 8.216E-06 | 4.748E-06 |
| **cd110** | 1.527E+02 | 1.542E+02 | 1.542E+02 | 1.542E+02 | 1.542E+02 |
| **cd111** | 7.278E+01 | 7.278E+01 | 7.278E+01 | 7.278E+01 | 7.278E+01 |
| **cd112** | 3.424E+01 | 3.424E+01 | 3.424E+01 | 3.424E+01 | 3.424E+01 |
| **cd113** | 3.966E-01 | 3.966E-01 | 3.966E-01 | 3.966E-01 | 3.966E-01 |
| **cd113m** | 5.619E-03 | 4.450E-03 | 4.395E-03 | 4.184E-03 | 3.984E-03 |
| **cd114** | 3.650E+01 | 3.650E+01 | 3.650E+01 | 3.650E+01 | 3.650E+01 |
| **cd115m** | 7.133E-04 | 1.399E-15 | 3.292E-16 | 1.126E-18 | 3.853E-21 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cd116** | 1.220E+01 | 1.220E+01 | 1.220E+01 | 1.220E+01 | 1.220E+01 |
| **ce136** | 2.271E-13 | 2.271E-13 | 2.271E-13 | 2.271E-13 | 2.271E-13 |
| **ce138** | 1.164E-05 | 1.164E-05 | 1.164E-05 | 1.164E-05 | 1.164E-05 |
| **ce139** | 1.641E-03 | 2.660E-07 | 1.666E-07 | 2.650E-08 | 4.216E-09 |
| **ce140** | 1.636E+03 | 1.636E+03 | 1.636E+03 | 1.636E+03 | 1.636E+03 |
| **ce141** | 2.270E-01 | 2.032E-17 | 2.798E-18 | 1.166E-21 | 4.862E-25 |
| **ce142** | 1.422E+03 | 1.422E+03 | 1.422E+03 | 1.422E+03 | 1.422E+03 |
| **ce144** | 2.102E+02 | 3.101E+00 | 2.473E+00 | 1.018E+00 | 4.187E-01 |
| **cf248** | 1.491E-11 | 4.066E-13 | 3.352E-13 | 1.570E-13 | 7.351E-14 |
| **cf249** | 8.844E-06 | 1.679E-05 | 1.682E-05 | 1.687E-05 | 1.687E-05 |
| **cf250** | 4.207E-06 | 3.272E-06 | 3.228E-06 | 3.061E-06 | 2.903E-06 |
| **cf251** | 2.083E-06 | 2.076E-06 | 2.075E-06 | 2.074E-06 | 2.072E-06 |
| **cf252** | 6.355E-07 | 1.833E-07 | 1.715E-07 | 1.320E-07 | 1.015E-07 |
| **cf253** | 3.692E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.857E-12 | 4.423E-21 | 1.524E-21 | 2.327E-23 | 3.554E-25 |
| **cl35** | 6.019E-14 | 6.019E-14 | 6.019E-14 | 6.019E-14 | 6.019E-14 |
| **cl36** | 3.264E-15 | 3.264E-15 | 3.264E-15 | 3.264E-15 | 3.264E-15 |
| **cl37** | 6.743E-14 | 6.743E-14 | 6.743E-14 | 6.743E-14 | 6.743E-14 |
| **cm240** | 1.960E-11 | 9.339E-31 | 8.579E-32 | 0.000E+00 | 0.000E+00 |
| **cm241** | 2.794E-08 | 3.477E-24 | 4.871E-25 | 2.176E-28 | 9.722E-32 |
| **cm242** | 2.199E+01 | 2.495E-02 | 2.041E-02 | 1.303E-02 | 1.143E-02 |
| **cm243** | 1.859E+00 | 1.660E+00 | 1.650E+00 | 1.612E+00 | 1.573E+00 |
| **cm244** | 1.483E+02 | 1.236E+02 | 1.224E+02 | 1.179E+02 | 1.135E+02 |
| **cm245** | 1.411E+01 | 1.411E+01 | 1.411E+01 | 1.410E+01 | 1.410E+01 |
| **cm246** | 9.398E-01 | 9.392E-01 | 9.392E-01 | 9.392E-01 | 9.385E-01 |
| **cm247** | 1.429E-02 | 1.429E-02 | 1.429E-02 | 1.429E-02 | 1.429E-02 |
| **cm248** | 9.141E-04 | 9.147E-04 | 9.147E-04 | 9.147E-04 | 9.147E-04 |
| **cm250** | 1.121E-10 | 1.121E-10 | 1.121E-10 | 1.121E-10 | 1.121E-10 |
| **co59** | 1.065E-13 | 1.065E-13 | 1.065E-13 | 1.065E-13 | 1.065E-13 |
| **co60** | 9.834E-15 | 5.270E-15 | 5.097E-15 | 4.469E-15 | 3.919E-15 |
| **cr50** | 8.857E-14 | 8.857E-14 | 8.857E-14 | 8.857E-14 | 8.857E-14 |
| **cr52** | 9.385E-14 | 9.385E-14 | 9.385E-14 | 9.385E-14 | 9.385E-14 |
| **cr53** | 9.379E-14 | 9.379E-14 | 9.379E-14 | 9.379E-14 | 9.379E-14 |
| **cr54** | 9.966E-14 | 9.966E-14 | 9.966E-14 | 9.966E-14 | 9.966E-14 |
| **cs131** | 2.039E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 1.767E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs133** | 1.586E+03 | 1.586E+03 | 1.586E+03 | 1.586E+03 | 1.586E+03 |
| **cs134** | 1.610E+02 | 3.274E+01 | 3.006E+01 | 2.149E+01 | 1.537E+01 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cs135** | 8.758E+02 | 8.758E+02 | 8.758E+02 | 8.758E+02 | 8.758E+02 |
| **cs136** | 1.211E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.730E+03 | 1.551E+03 | 1.542E+03 | 1.507E+03 | 1.472E+03 |
| **cu63** | 1.127E-13 | 1.128E-13 | 1.128E-13 | 1.128E-13 | 1.128E-13 |
| **cu65** | 4.401E-07 | 4.401E-07 | 4.401E-07 | 4.401E-07 | 4.401E-07 |
| **dy156** | 4.008E-12 | 4.008E-12 | 4.008E-12 | 4.008E-12 | 4.008E-12 |
| **dy158** | 1.499E-07 | 5.023E-07 | 5.210E-07 | 5.944E-07 | 6.677E-07 |
| **dy159** | 2.944E-07 | 7.179E-11 | 4.595E-11 | 7.972E-12 | 1.382E-12 |
| **dy160** | 9.623E-01 | 9.808E-01 | 9.808E-01 | 9.808E-01 | 9.808E-01 |
| **dy161** | 1.300E+00 | 1.300E+00 | 1.300E+00 | 1.300E+00 | 1.300E+00 |
| **dy162** | 7.992E-01 | 7.992E-01 | 7.992E-01 | 7.992E-01 | 7.992E-01 |
| **dy163** | 6.657E-01 | 6.657E-01 | 6.657E-01 | 6.657E-01 | 6.657E-01 |
| **dy164** | 2.703E-01 | 2.703E-01 | 2.703E-01 | 2.703E-01 | 2.703E-01 |
| **er162** | 4.631E-12 | 4.631E-12 | 4.631E-12 | 4.631E-12 | 4.631E-12 |
| **er164** | 3.222E-06 | 3.222E-06 | 3.222E-06 | 3.222E-06 | 3.222E-06 |
| **er166** | 8.414E-02 | 8.414E-02 | 8.414E-02 | 8.414E-02 | 8.414E-02 |
| **er167** | 4.228E-03 | 4.228E-03 | 4.228E-03 | 4.228E-03 | 4.228E-03 |
| **er168** | 1.329E-02 | 1.329E-02 | 1.329E-02 | 1.329E-02 | 1.329E-02 |
| **er169** | 1.172E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **er170** | 6.564E-04 | 6.564E-04 | 6.564E-04 | 6.564E-04 | 6.564E-04 |
| **es252** | 1.594E-15 | 1.248E-16 | 1.089E-16 | 6.370E-17 | 3.726E-17 |
| **es253** | 8.883E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 5.673E-12 | 7.272E-14 | 5.755E-14 | 2.299E-14 | 9.180E-15 |
| **es255** | 9.266E-15 | 7.232E-28 | 1.431E-28 | 2.483E-31 | 4.309E-34 |
| **eu147** | 3.275E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 7.932E-11 | 1.976E-16 | 9.887E-17 | 6.530E-18 | 4.312E-19 |
| **eu151** | 2.024E-01 | 1.209E+00 | 1.261E+00 | 1.468E+00 | 1.674E+00 |
| **eu152** | 4.193E-02 | 3.288E-02 | 3.246E-02 | 3.084E-02 | 2.930E-02 |
| **eu153** | 2.180E+02 | 2.180E+02 | 2.180E+02 | 2.180E+02 | 2.180E+02 |
| **eu154** | 6.265E+01 | 4.275E+01 | 4.187E+01 | 3.864E+01 | 3.565E+01 |
| **eu155** | 1.520E+01 | 7.609E+00 | 7.331E+00 | 6.335E+00 | 5.476E+00 |
| **eu156** | 4.232E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **f19** | 9.167E-14 | 9.167E-14 | 9.167E-14 | 9.167E-14 | 9.167E-14 |
| **fe54** | 9.715E-14 | 9.715E-14 | 9.715E-14 | 9.715E-14 | 9.715E-14 |
| **fe55** | 1.854E-16 | 5.592E-17 | 5.244E-17 | 4.074E-17 | 3.165E-17 |
| **fe56** | 1.061E-13 | 1.061E-13 | 1.061E-13 | 1.061E-13 | 1.061E-13 |
| **fe57** | 1.030E-13 | 1.030E-13 | 1.030E-13 | 1.030E-13 | 1.030E-13 |
| **fe58** | 3.029E-13 | 3.029E-13 | 3.029E-13 | 3.029E-13 | 3.029E-13 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **fr221** | 3.907E-16 | 4.063E-16 | 4.069E-16 | 4.116E-16 | 4.163E-16 |
| **ga69** | 1.681E-03 | 1.681E-03 | 1.681E-03 | 1.681E-03 | 1.681E-03 |
| **ga71** | 7.661E-03 | 7.661E-03 | 7.661E-03 | 7.661E-03 | 7.661E-03 |
| **gd151** | 9.207E-08 | 5.716E-12 | 3.399E-12 | 4.418E-13 | 5.743E-14 |
| **gd152** | 8.560E-02 | 8.811E-02 | 8.824E-02 | 8.870E-02 | 8.910E-02 |
| **gd153** | 3.456E-03 | 2.335E-05 | 1.787E-05 | 6.235E-06 | 2.177E-06 |
| **gd154** | 9.319E+00 | 2.923E+01 | 3.010E+01 | 3.333E+01 | 3.633E+01 |
| **gd155** | 1.928E+00 | 9.517E+00 | 9.795E+00 | 1.079E+01 | 1.164E+01 |
| **gd156** | 1.662E+02 | 1.662E+02 | 1.662E+02 | 1.662E+02 | 1.662E+02 |
| **gd157** | 3.936E-01 | 3.936E-01 | 3.936E-01 | 3.936E-01 | 3.936E-01 |
| **gd158** | 4.935E+01 | 4.935E+01 | 4.935E+01 | 4.935E+01 | 4.935E+01 |
| **gd160** | 3.421E+00 | 3.421E+00 | 3.421E+00 | 3.421E+00 | 3.421E+00 |
| **ge70** | 1.983E-05 | 1.983E-05 | 1.983E-05 | 1.983E-05 | 1.983E-05 |
| **ge71** | 4.883E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge72** | 1.940E-02 | 1.940E-02 | 1.940E-02 | 1.940E-02 | 1.940E-02 |
| **ge73** | 3.985E-02 | 3.985E-02 | 3.985E-02 | 3.985E-02 | 3.985E-02 |
| **ge73m** | 1.126E-17 | 3.588E-24 | 1.608E-24 | 6.882E-26 | 2.948E-27 |
| **ge74** | 9.530E-02 | 9.530E-02 | 9.530E-02 | 9.530E-02 | 9.530E-02 |
| **ge76** | 4.283E-01 | 4.283E-01 | 4.283E-01 | 4.283E-01 | 4.283E-01 |
| **h1** | 6.412E-03 | 6.412E-03 | 6.412E-03 | 6.412E-03 | 6.412E-03 |
| **h2** | 1.370E-03 | 1.370E-03 | 1.370E-03 | 1.370E-03 | 1.370E-03 |
| **h3** | 8.144E-02 | 6.234E-02 | 6.145E-02 | 5.809E-02 | 5.492E-02 |
| **he3** | 4.998E-03 | 2.409E-02 | 2.497E-02 | 2.834E-02 | 3.152E-02 |
| **he4** | 8.154E+00 | 9.308E+00 | 9.352E+00 | 9.527E+00 | 9.702E+00 |
| **hf174** | 1.463E-13 | 1.463E-13 | 1.463E-13 | 1.463E-13 | 1.463E-13 |
| **hf175** | 9.649E-16 | 3.401E-23 | 1.355E-23 | 3.648E-25 | 9.828E-27 |
| **hf176** | 3.283E-13 | 3.283E-13 | 3.283E-13 | 3.283E-13 | 3.283E-13 |
| **hf177** | 5.313E-14 | 5.314E-14 | 5.314E-14 | 5.314E-14 | 5.314E-14 |
| **hf178** | 3.389E-13 | 3.389E-13 | 3.389E-13 | 3.389E-13 | 3.389E-13 |
| **hf179** | 7.569E-13 | 7.569E-13 | 7.569E-13 | 7.569E-13 | 7.569E-13 |
| **hf180** | 5.860E-13 | 5.860E-13 | 5.860E-13 | 5.860E-13 | 5.860E-13 |
| **hf181** | 2.335E-17 | 1.152E-29 | 2.517E-30 | 6.440E-33 | 0.000E+00 |
| **hf182** | 9.881E-16 | 9.881E-16 | 9.881E-16 | 9.881E-16 | 9.881E-16 |
| **hg196** | 2.619E-14 | 2.619E-14 | 2.619E-14 | 2.619E-14 | 2.619E-14 |
| **hg198** | 6.599E-13 | 6.599E-13 | 6.599E-13 | 6.599E-13 | 6.599E-13 |
| **hg199** | 1.136E-13 | 1.136E-13 | 1.136E-13 | 1.136E-13 | 1.136E-13 |
| **hg200** | 7.648E-13 | 7.648E-13 | 7.648E-13 | 7.648E-13 | 7.648E-13 |
| **hg201** | 3.506E-13 | 3.506E-13 | 3.506E-13 | 3.506E-13 | 3.506E-13 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hg202** | 3.775E-13 | 3.775E-13 | 3.775E-13 | 3.775E-13 | 3.775E-13 |
| **hg204** | 3.672E-13 | 3.672E-13 | 3.672E-13 | 3.672E-13 | 3.672E-13 |
| **ho163** | 2.459E-07 | 2.457E-07 | 2.457E-07 | 2.456E-07 | 2.456E-07 |
| **ho165** | 2.633E-01 | 2.633E-01 | 2.633E-01 | 2.633E-01 | 2.633E-01 |
| **ho166m** | 6.869E-04 | 6.849E-04 | 6.849E-04 | 6.849E-04 | 6.842E-04 |
| **i125** | 1.174E-09 | 1.936E-18 | 6.541E-19 | 9.246E-21 | 1.306E-22 |
| **i126** | 2.019E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i127** | 1.012E+02 | 1.015E+02 | 1.015E+02 | 1.015E+02 | 1.015E+02 |
| **i129** | 3.185E+02 | 3.185E+02 | 3.185E+02 | 3.185E+02 | 3.185E+02 |
| **i131** | 1.310E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113** | 9.550E-04 | 2.123E-03 | 2.178E-03 | 2.388E-03 | 2.588E-03 |
| **in113m** | 4.585E-14 | 1.344E-18 | 7.675E-19 | 8.520E-20 | 9.458E-21 |
| **in114** | 5.218E-12 | 1.515E-22 | 4.121E-23 | 2.487E-25 | 1.501E-27 |
| **in114m** | 3.209E-07 | 9.313E-18 | 2.534E-18 | 1.529E-20 | 9.227E-23 |
| **in115** | 3.576E+00 | 3.577E+00 | 3.577E+00 | 3.577E+00 | 3.577E+00 |
| **in115m** | 3.179E-10 | 6.233E-22 | 1.467E-22 | 5.020E-25 | 1.717E-27 |
| **ir191** | 1.088E-14 | 1.088E-14 | 1.088E-14 | 1.088E-14 | 1.088E-14 |
| **ir192** | 2.325E-16 | 1.996E-23 | 8.335E-24 | 2.708E-25 | 8.797E-27 |
| **ir193** | 1.761E-13 | 1.773E-13 | 1.774E-13 | 1.777E-13 | 1.779E-13 |
| **k39** | 7.014E-14 | 7.014E-14 | 7.014E-14 | 7.014E-14 | 7.014E-14 |
| **k40** | 6.955E-14 | 6.955E-14 | 6.955E-14 | 6.955E-14 | 6.955E-14 |
| **k41** | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 | 7.642E-14 |
| **kr78** | 2.022E-13 | 2.022E-13 | 2.022E-13 | 2.022E-13 | 2.022E-13 |
| **kr80** | 5.531E-04 | 5.531E-04 | 5.531E-04 | 5.531E-04 | 5.531E-04 |
| **kr81** | 4.748E-05 | 4.748E-05 | 4.748E-05 | 4.748E-05 | 4.748E-05 |
| **kr82** | 1.021E+00 | 1.021E+00 | 1.021E+00 | 1.021E+00 | 1.021E+00 |
| **kr83** | 4.230E+01 | 4.230E+01 | 4.230E+01 | 4.230E+01 | 4.230E+01 |
| **kr83m** | 4.786E-11 | 4.245E-17 | 2.010E-17 | 1.068E-18 | 5.673E-20 |
| **kr84** | 9.550E+01 | 9.550E+01 | 9.550E+01 | 9.550E+01 | 9.550E+01 |
| **kr85** | 1.977E+01 | 1.456E+01 | 1.433E+01 | 1.343E+01 | 1.260E+01 |
| **kr86** | 1.426E+02 | 1.426E+02 | 1.426E+02 | 1.426E+02 | 1.426E+02 |
| **la137** | 5.529E-04 | 5.529E-04 | 5.529E-04 | 5.529E-04 | 5.529E-04 |
| **la138** | 3.028E-02 | 3.028E-02 | 3.028E-02 | 3.028E-02 | 3.028E-02 |
| **la139** | 1.599E+03 | 1.599E+03 | 1.599E+03 | 1.599E+03 | 1.599E+03 |
| **la140** | 2.334E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **li6** | 2.547E-10 | 2.547E-10 | 2.547E-10 | 2.547E-10 | 2.547E-10 |
| **li7** | 2.423E-11 | 2.423E-11 | 2.423E-11 | 2.423E-11 | 2.423E-11 |
| **lu175** | 2.967E-13 | 2.977E-13 | 2.977E-13 | 2.977E-13 | 2.977E-13 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu176** | 7.272E-15 | 7.272E-15 | 7.272E-15 | 7.272E-15 | 7.272E-15 |
| **mg24** | 4.338E-14 | 4.338E-14 | 4.338E-14 | 4.338E-14 | 4.338E-14 |
| **mg25** | 4.515E-14 | 4.515E-14 | 4.515E-14 | 4.515E-14 | 4.515E-14 |
| **mg26** | 4.699E-14 | 4.699E-14 | 4.699E-14 | 4.699E-14 | 4.699E-14 |
| **mn54** | 2.242E-17 | 4.773E-19 | 3.882E-19 | 1.725E-19 | 7.668E-20 |
| **mn55** | 9.729E-14 | 9.742E-14 | 9.742E-14 | 9.742E-14 | 9.742E-14 |
| **mo100** | 1.353E+03 | 1.353E+03 | 1.353E+03 | 1.353E+03 | 1.353E+03 |
| **mo92** | 6.763E-12 | 6.763E-12 | 6.763E-12 | 6.763E-12 | 6.763E-12 |
| **mo93** | 4.741E-07 | 4.737E-07 | 4.737E-07 | 4.736E-07 | 4.736E-07 |
| **mo94** | 1.579E-02 | 1.579E-02 | 1.579E-02 | 1.579E-02 | 1.579E-02 |
| **mo95** | 8.632E+02 | 8.725E+02 | 8.725E+02 | 8.725E+02 | 8.725E+02 |
| **mo96** | 4.736E+01 | 4.736E+01 | 4.736E+01 | 4.736E+01 | 4.736E+01 |
| **mo97** | 1.047E+03 | 1.047E+03 | 1.047E+03 | 1.047E+03 | 1.047E+03 |
| **mo98** | 1.147E+03 | 1.147E+03 | 1.147E+03 | 1.147E+03 | 1.147E+03 |
| **n14** | 4.700E-06 | 4.913E-06 | 4.925E-06 | 4.970E-06 | 5.015E-06 |
| **n15** | 1.129E-02 | 1.129E-02 | 1.129E-02 | 1.129E-02 | 1.129E-02 |
| **na23** | 4.152E-14 | 4.152E-14 | 4.152E-14 | 4.152E-14 | 4.152E-14 |
| **nb91** | 1.155E-08 | 1.149E-08 | 1.149E-08 | 1.148E-08 | 1.147E-08 |
| **nb91m** | 7.562E-15 | 2.026E-23 | 7.027E-24 | 1.100E-25 | 1.721E-27 |
| **nb92** | 1.004E-06 | 1.004E-06 | 1.004E-06 | 1.004E-06 | 1.004E-06 |
| **nb92m** | 1.892E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb93** | 1.181E-04 | 4.255E-04 | 4.489E-04 | 5.467E-04 | 6.541E-04 |
| **nb93m** | 6.803E-04 | 1.915E-03 | 1.975E-03 | 2.202E-03 | 2.419E-03 |
| **nb94** | 3.608E-03 | 3.607E-03 | 3.607E-03 | 3.607E-03 | 3.607E-03 |
| **nb95** | 4.985E+00 | 3.752E-08 | 1.369E-08 | 2.715E-10 | 5.227E-12 |
| **nb95m** | 2.815E-03 | 2.005E-11 | 7.325E-12 | 1.409E-13 | 2.711E-15 |
| **nd142** | 2.148E+01 | 2.148E+01 | 2.148E+01 | 2.148E+01 | 2.148E+01 |
| **nd143** | 1.068E+03 | 1.068E+03 | 1.068E+03 | 1.068E+03 | 1.068E+03 |
| **nd144** | 1.160E+03 | 1.367E+03 | 1.368E+03 | 1.369E+03 | 1.370E+03 |
| **nd145** | 8.031E+02 | 8.031E+02 | 8.031E+02 | 8.031E+02 | 8.031E+02 |
| **nd146** | 8.758E+02 | 8.758E+02 | 8.758E+02 | 8.758E+02 | 8.758E+02 |
| **nd147** | 5.261E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd148** | 5.165E+02 | 5.165E+02 | 5.165E+02 | 5.165E+02 | 5.165E+02 |
| **nd150** | 3.047E+02 | 3.047E+02 | 3.047E+02 | 3.047E+02 | 3.047E+02 |
| **ni58** | 1.040E-13 | 1.040E-13 | 1.040E-13 | 1.040E-13 | 1.040E-13 |
| **ni59** | 8.454E-14 | 8.454E-14 | 8.454E-14 | 8.454E-14 | 8.454E-14 |
| **ni60** | 1.303E-13 | 1.349E-13 | 1.351E-13 | 1.357E-13 | 1.363E-13 |
| **ni61** | 1.102E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ni62** | 1.106E-13 | 1.106E-13 | 1.106E-13 | 1.106E-13 | 1.106E-13 |
| **ni63** | 1.843E-15 | 1.785E-15 | 1.781E-15 | 1.769E-15 | 1.757E-15 |
| **ni64** | 1.161E-13 | 1.161E-13 | 1.161E-13 | 1.161E-13 | 1.161E-13 |
| **np235** | 2.244E-06 | 1.082E-07 | 9.194E-08 | 4.855E-08 | 2.564E-08 |
| **np236** | 3.546E-04 | 3.546E-04 | 3.546E-04 | 3.546E-04 | 3.546E-04 |
| **np237** | 1.810E+02 | 1.884E+02 | 1.890E+02 | 1.916E+02 | 1.945E+02 |
| **np238** | 8.104E-07 | 7.919E-07 | 7.906E-07 | 7.866E-07 | 7.833E-07 |
| **np239** | 3.314E-04 | 3.312E-04 | 3.312E-04 | 3.312E-04 | 3.312E-04 |
| **np240** | 1.899E-16 | 1.899E-16 | 1.899E-16 | 1.899E-16 | 1.899E-16 |
| **np240m** | 1.845E-14 | 1.845E-14 | 1.845E-14 | 1.845E-14 | 1.845E-14 |
| **o16** | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 |
| **o17** | 3.168E-02 | 3.168E-02 | 3.168E-02 | 3.168E-02 | 3.168E-02 |
| **o18** | 1.228E-07 | 1.228E-07 | 1.228E-07 | 1.228E-07 | 1.228E-07 |
| **os186** | 2.113E-13 | 2.113E-13 | 2.113E-13 | 2.113E-13 | 2.113E-13 |
| **os187** | 3.323E-14 | 3.323E-14 | 3.323E-14 | 3.323E-14 | 3.323E-14 |
| **os188** | 1.313E-13 | 1.313E-13 | 1.313E-13 | 1.313E-13 | 1.313E-13 |
| **os189** | 8.527E-15 | 8.527E-15 | 8.527E-15 | 8.527E-15 | 8.527E-15 |
| **os190** | 2.204E-15 | 2.204E-15 | 2.204E-15 | 2.204E-15 | 2.204E-15 |
| **os192** | 9.128E-15 | 9.134E-15 | 9.134E-15 | 9.134E-15 | 9.134E-15 |
| **p31** | 5.603E-14 | 5.603E-14 | 5.603E-14 | 5.603E-14 | 5.603E-14 |
| **pa230** | 1.109E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 2.490E-05 | 2.938E-05 | 2.962E-05 | 3.057E-05 | 3.151E-05 |
| **pa232** | 1.647E-14 | 1.647E-14 | 1.647E-14 | 1.647E-14 | 1.647E-14 |
| **pa233** | 6.128E-06 | 6.372E-06 | 6.392E-06 | 6.489E-06 | 6.587E-06 |
| **pa234** | 2.467E-10 | 2.467E-10 | 2.467E-10 | 2.467E-10 | 2.467E-10 |
| **pa234m** | 4.445E-10 | 4.446E-10 | 4.445E-10 | 4.445E-10 | 4.445E-10 |
| **pb204** | 3.673E-13 | 3.673E-13 | 3.673E-13 | 3.673E-13 | 3.673E-13 |
| **pb205** | 1.188E-15 | 1.189E-15 | 1.189E-15 | 1.189E-15 | 1.189E-15 |
| **pb206** | 1.901E-12 | 9.346E-12 | 9.755E-12 | 1.142E-11 | 1.316E-11 |
| **pb207** | 6.415E-11 | 3.252E-10 | 3.485E-10 | 4.495E-10 | 5.657E-10 |
| **pb208** | 8.540E-07 | 1.971E-05 | 2.147E-05 | 2.890E-05 | 3.711E-05 |
| **pb209** | 1.472E-14 | 1.530E-14 | 1.533E-14 | 1.551E-14 | 1.568E-14 |
| **pb210** | 5.260E-11 | 5.364E-11 | 5.417E-11 | 5.695E-11 | 6.090E-11 |
| **pb211** | 2.008E-15 | 9.174E-15 | 9.372E-15 | 1.107E-14 | 1.258E-14 |
| **pb212** | 1.915E-09 | 1.206E-08 | 1.251E-08 | 1.403E-08 | 1.532E-08 |
| **pd102** | 1.040E-03 | 1.249E-03 | 1.249E-03 | 1.250E-03 | 1.250E-03 |
| **pd103** | 3.111E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd104** | 4.175E+02 | 4.175E+02 | 4.175E+02 | 4.175E+02 | 4.175E+02 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pd105** | 1.044E+03 | 1.044E+03 | 1.044E+03 | 1.044E+03 | 1.044E+03 |
| **pd106** | 8.137E+02 | 1.049E+03 | 1.051E+03 | 1.055E+03 | 1.057E+03 |
| **pd107** | 6.750E+02 | 6.750E+02 | 6.750E+02 | 6.750E+02 | 6.750E+02 |
| **pd108** | 4.669E+02 | 4.669E+02 | 4.669E+02 | 4.669E+02 | 4.669E+02 |
| **pd110** | 1.527E+02 | 1.527E+02 | 1.527E+02 | 1.527E+02 | 1.527E+02 |
| **pm143** | 1.806E-12 | 1.941E-14 | 1.522E-14 | 5.858E-15 | 2.255E-15 |
| **pm144** | 5.543E-10 | 2.026E-11 | 1.696E-11 | 8.447E-12 | 4.208E-12 |
| **pm145** | 3.955E-05 | 3.314E-05 | 3.281E-05 | 3.156E-05 | 3.035E-05 |
| **pm146** | 4.887E-04 | 2.697E-04 | 2.612E-04 | 2.304E-04 | 2.033E-04 |
| **pm147** | 1.933E+02 | 5.519E+01 | 5.160E+01 | 3.962E+01 | 3.043E+01 |
| **pm148** | 2.255E-04 | 5.230E-17 | 1.098E-17 | 2.395E-20 | 5.228E-23 |
| **pm148m** | 3.594E-02 | 8.335E-15 | 1.749E-15 | 3.817E-18 | 8.328E-21 |
| **po210** | 7.807E-13 | 8.896E-13 | 8.962E-13 | 9.346E-13 | 9.907E-13 |
| **po216** | 7.384E-15 | 4.650E-14 | 4.824E-14 | 5.414E-14 | 5.909E-14 |
| **pr141** | 1.460E+03 | 1.461E+03 | 1.461E+03 | 1.461E+03 | 1.461E+03 |
| **pr143** | 3.493E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 8.850E-03 | 1.306E-04 | 1.042E-04 | 4.286E-05 | 1.763E-05 |
| **pr144m** | 3.522E-05 | 5.197E-07 | 4.144E-07 | 1.705E-07 | 7.014E-08 |
| **pt192** | 1.569E-13 | 1.571E-13 | 1.571E-13 | 1.571E-13 | 1.571E-13 |
| **pt193** | 1.985E-14 | 1.859E-14 | 1.852E-14 | 1.826E-14 | 1.801E-14 |
| **pt194** | 3.211E-13 | 3.211E-13 | 3.211E-13 | 3.211E-13 | 3.211E-13 |
| **pt195** | 2.549E-15 | 2.549E-15 | 2.549E-15 | 2.549E-15 | 2.549E-15 |
| **pt196** | 3.811E-16 | 3.811E-16 | 3.811E-16 | 3.811E-16 | 3.811E-16 |
| **pu236** | 9.623E-04 | 3.045E-04 | 2.862E-04 | 2.246E-04 | 1.763E-04 |
| **pu237** | 1.234E-05 | 4.578E-17 | 1.115E-17 | 4.362E-20 | 1.707E-22 |
| **pu238** | 1.996E+02 | 2.133E+02 | 2.129E+02 | 2.112E+02 | 2.096E+02 |
| **pu239** | 1.595E+04 | 1.595E+04 | 1.595E+04 | 1.595E+04 | 1.595E+04 |
| **pu240** | 9.960E+03 | 9.980E+03 | 9.980E+03 | 9.980E+03 | 9.986E+03 |
| **pu241** | 5.212E+03 | 4.141E+03 | 4.090E+03 | 3.897E+03 | 3.712E+03 |
| **pu242** | 1.516E+03 | 1.516E+03 | 1.516E+03 | 1.516E+03 | 1.516E+03 |
| **pu243** | 5.093E-13 | 5.093E-13 | 5.093E-13 | 5.093E-13 | 5.093E-13 |
| **pu244** | 1.110E-01 | 1.110E-01 | 1.110E-01 | 1.110E-01 | 1.110E-01 |
| **ra223** | 9.676E-13 | 4.422E-12 | 4.516E-12 | 5.332E-12 | 6.064E-12 |
| **ra224** | 1.670E-08 | 1.051E-07 | 1.091E-07 | 1.224E-07 | 1.337E-07 |
| **ra225** | 1.741E-12 | 1.811E-12 | 1.814E-12 | 1.835E-12 | 1.856E-12 |
| **ra226** | 1.468E-09 | 9.108E-09 | 9.781E-09 | 1.273E-08 | 1.621E-08 |
| **ra228** | 3.193E-14 | 5.689E-14 | 5.810E-14 | 6.278E-14 | 6.730E-14 |
| **rb83** | 7.278E-08 | 6.457E-14 | 3.057E-14 | 1.624E-15 | 8.626E-17 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **rb85** | 8.038E+01 | 8.560E+01 | 8.579E+01 | 8.672E+01 | 8.751E+01 |
| **rb84** | 7.609E-08 | 9.676E-24 | 1.357E-24 | 6.092E-28 | 2.735E-31 |
| **rb87** | 1.872E+02 | 1.872E+02 | 1.872E+02 | 1.872E+02 | 1.872E+02 |
| **re185** | 6.737E-14 | 6.750E-14 | 6.750E-14 | 6.750E-14 | 6.750E-14 |
| **re186m** | 1.993E-16 | 1.993E-16 | 1.993E-16 | 1.993E-16 | 1.993E-16 |
| **re187** | 3.538E-13 | 3.538E-13 | 3.538E-13 | 3.538E-13 | 3.538E-13 |
| **rh101** | 6.366E-07 | 2.350E-07 | 2.227E-07 | 1.806E-07 | 1.464E-07 |
| **rh102** | 9.504E-04 | 3.280E-06 | 2.489E-06 | 9.339E-07 | 4.409E-07 |
| **rh102m** | 2.251E-03 | 9.346E-04 | 8.916E-04 | 7.410E-04 | 6.157E-04 |
| **rh103** | 1.005E+03 | 1.005E+03 | 1.005E+03 | 1.005E+03 | 1.005E+03 |
| **rh103m** | 6.849E-04 | 3.492E-17 | 6.757E-18 | 1.072E-20 | 1.700E-23 |
| **rh106** | 2.304E-04 | 9.108E-06 | 7.655E-06 | 3.877E-06 | 1.963E-06 |
| **rn220** | 2.884E-12 | 1.816E-11 | 1.884E-11 | 2.114E-11 | 2.308E-11 |
| **rn222** | 9.352E-15 | 5.854E-14 | 6.286E-14 | 8.183E-14 | 1.042E-13 |
| **ru100** | 1.691E+02 | 1.691E+02 | 1.691E+02 | 1.691E+02 | 1.691E+02 |
| **ru101** | 1.170E+03 | 1.170E+03 | 1.170E+03 | 1.170E+03 | 1.170E+03 |
| **ru102** | 1.347E+03 | 1.347E+03 | 1.347E+03 | 1.347E+03 | 1.347E+03 |
| **ru103** | 6.968E-01 | 3.555E-14 | 6.875E-15 | 1.091E-17 | 1.730E-20 |
| **ru104** | 1.276E+03 | 1.276E+03 | 1.276E+03 | 1.276E+03 | 1.276E+03 |
| **ru106** | 2.462E+02 | 9.729E+00 | 8.177E+00 | 4.141E+00 | 2.097E+00 |
| **ru96** | 1.720E-13 | 1.720E-13 | 1.720E-13 | 1.720E-13 | 1.720E-13 |
| **ru98** | 1.922E-06 | 1.931E-06 | 1.931E-06 | 1.933E-06 | 1.935E-06 |
| **ru99** | 4.563E-02 | 6.244E-02 | 6.334E-02 | 6.690E-02 | 7.041E-02 |
| **s32** | 5.774E-14 | 5.774E-14 | 5.774E-14 | 5.774E-14 | 5.774E-14 |
| **s33** | 5.933E-14 | 5.933E-14 | 5.933E-14 | 5.933E-14 | 5.933E-14 |
| **s34** | 6.147E-14 | 6.147E-14 | 6.147E-14 | 6.147E-14 | 6.147E-14 |
| **s36** | 6.502E-14 | 6.502E-14 | 6.502E-14 | 6.502E-14 | 6.502E-14 |
| **sb121** | 8.903E+00 | 8.962E+00 | 8.962E+00 | 8.976E+00 | 8.989E+00 |
| **sb123** | 1.173E+01 | 1.182E+01 | 1.182E+01 | 1.182E+01 | 1.182E+01 |
| **sb124** | 4.112E-03 | 8.877E-12 | 3.041E-12 | 4.549E-14 | 6.803E-16 |
| **sb125** | 1.559E+01 | 4.733E+00 | 4.440E+00 | 3.454E+00 | 2.687E+00 |
| **sb126** | 9.643E-07 | 9.590E-07 | 9.590E-07 | 9.590E-07 | 9.590E-07 |
| **sb126m** | 7.377E-09 | 7.377E-09 | 7.377E-09 | 7.377E-09 | 7.377E-09 |
| **sc45** | 7.879E-14 | 7.886E-14 | 7.886E-14 | 7.886E-14 | 7.886E-14 |
| **sc46** | 4.026E-17 | 2.392E-23 | 1.108E-23 | 5.411E-25 | 2.642E-26 |
| **se74** | 4.363E-07 | 4.364E-07 | 4.364E-07 | 4.364E-07 | 4.364E-07 |
| **se75** | 9.451E-09 | 4.173E-13 | 2.436E-13 | 2.948E-14 | 3.567E-15 |
| **se76** | 8.857E-03 | 8.857E-03 | 8.857E-03 | 8.857E-03 | 8.857E-03 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **se77** | 1.006E+00 | 1.006E+00 | 1.006E+00 | 1.006E+00 | 1.006E+00 |
| **se78** | 2.858E+00 | 2.858E+00 | 2.858E+00 | 2.858E+00 | 2.858E+00 |
| **se79** | 6.151E+00 | 6.150E+00 | 6.150E+00 | 6.150E+00 | 6.150E+00 |
| **se80** | 1.405E+01 | 1.405E+01 | 1.405E+01 | 1.405E+01 | 1.405E+01 |
| **se82** | 3.666E+01 | 3.666E+01 | 3.666E+01 | 3.666E+01 | 3.666E+01 |
| **si28** | 5.058E-14 | 5.058E-14 | 5.058E-14 | 5.058E-14 | 5.058E-14 |
| **si29** | 5.245E-14 | 5.245E-14 | 5.245E-14 | 5.245E-14 | 5.245E-14 |
| **si30** | 5.449E-14 | 5.449E-14 | 5.449E-14 | 5.449E-14 | 5.449E-14 |
| **sm144** | 6.459E-11 | 6.459E-11 | 6.459E-11 | 6.459E-11 | 6.459E-11 |
| **sm145** | 3.549E-07 | 1.037E-08 | 8.579E-09 | 4.076E-09 | 1.936E-09 |
| **sm146** | 3.671E-03 | 3.745E-03 | 3.748E-03 | 3.758E-03 | 3.767E-03 |
| **sm147** | 1.282E+02 | 2.664E+02 | 2.699E+02 | 2.820E+02 | 2.911E+02 |
| **sm148** | 2.080E+02 | 2.081E+02 | 2.081E+02 | 2.081E+02 | 2.081E+02 |
| **sm149** | 6.605E+00 | 6.605E+00 | 6.605E+00 | 6.605E+00 | 6.605E+00 |
| **sm150** | 4.357E+02 | 4.357E+02 | 4.357E+02 | 4.357E+02 | 4.357E+02 |
| **sm151** | 2.804E+01 | 2.703E+01 | 2.697E+01 | 2.677E+01 | 2.656E+01 |
| **sm152** | 1.686E+02 | 1.686E+02 | 1.686E+02 | 1.686E+02 | 1.686E+02 |
| **sm154** | 8.659E+01 | 8.659E+01 | 8.659E+01 | 8.659E+01 | 8.659E+01 |
| **sn112** | 3.648E-09 | 3.648E-09 | 3.648E-09 | 3.648E-09 | 3.648E-09 |
| **sn113** | 7.635E-11 | 2.238E-15 | 1.279E-15 | 1.419E-16 | 1.575E-17 |
| **sn114** | 1.863E-04 | 1.866E-04 | 1.866E-04 | 1.866E-04 | 1.866E-04 |
| **sn115** | 5.306E-01 | 5.306E-01 | 5.306E-01 | 5.306E-01 | 5.306E-01 |
| **sn116** | 4.343E+00 | 4.343E+00 | 4.343E+00 | 4.343E+00 | 4.343E+00 |
| **sn117** | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 |
| **sn117m** | 2.904E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn118** | 9.405E+00 | 9.405E+00 | 9.405E+00 | 9.405E+00 | 9.405E+00 |
| **sn119** | 8.976E+00 | 9.048E+00 | 9.048E+00 | 9.048E+00 | 9.048E+00 |
| **sn119m** | 7.060E-02 | 1.171E-03 | 9.398E-04 | 3.962E-04 | 1.671E-04 |
| **sn120** | 9.042E+00 | 9.042E+00 | 9.042E+00 | 9.042E+00 | 9.042E+00 |
| **sn121** | 4.426E-05 | 4.107E-05 | 4.090E-05 | 4.026E-05 | 3.963E-05 |
| **sn121m** | 8.117E-01 | 7.536E-01 | 7.503E-01 | 7.384E-01 | 7.272E-01 |
| **sn122** | 1.213E+01 | 1.213E+01 | 1.213E+01 | 1.213E+01 | 1.213E+01 |
| **sn123** | 8.599E-02 | 7.879E-06 | 4.786E-06 | 6.750E-07 | 9.530E-08 |
| **sn124** | 1.968E+01 | 1.968E+01 | 1.968E+01 | 1.968E+01 | 1.968E+01 |
| **sn125** | 8.236E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 4.659E+01 | 4.659E+01 | 4.659E+01 | 4.659E+01 | 4.659E+01 |
| **sr84** | 8.804E-06 | 8.804E-06 | 8.804E-06 | 8.804E-06 | 8.804E-06 |
| **sr85** | 1.567E-08 | 1.411E-16 | 5.220E-17 | 1.055E-18 | 2.131E-20 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sr86** | 5.116E-01 | 5.116E-01 | 5.116E-01 | 5.116E-01 | 5.116E-01 |
| **sr87** | 5.740E-03 | 5.740E-03 | 5.740E-03 | 5.740E-03 | 5.740E-03 |
| **sr88** | 2.488E+02 | 2.488E+02 | 2.488E+02 | 2.488E+02 | 2.488E+02 |
| **sr89** | 5.673E-01 | 2.688E-11 | 7.509E-12 | 5.023E-14 | 3.361E-16 |
| **sr90** | 3.822E+02 | 3.409E+02 | 3.388E+02 | 3.308E+02 | 3.229E+02 |
| **ta180m** | 2.007E-17 | 2.007E-17 | 2.007E-17 | 2.007E-17 | 2.007E-17 |
| **ta181** | 1.811E-13 | 1.812E-13 | 1.812E-13 | 1.812E-13 | 1.812E-13 |
| **ta182** | 7.021E-16 | 1.997E-20 | 1.140E-20 | 1.288E-21 | 1.730E-22 |
| **tb157** | 9.154E-07 | 8.745E-07 | 8.718E-07 | 8.632E-07 | 8.553E-07 |
| **tb158** | 1.172E-04 | 1.151E-04 | 1.151E-04 | 1.146E-04 | 1.141E-04 |
| **tb159** | 7.490E+00 | 7.490E+00 | 7.490E+00 | 7.490E+00 | 7.490E+00 |
| **tb160** | 1.873E-02 | 1.140E-09 | 4.674E-10 | 1.413E-11 | 4.269E-13 |
| **tb161** | 7.893E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc95** | 6.148E-18 | 1.724E-26 | 5.991E-27 | 9.464E-29 | 0.000E+00 |
| **tc95m** | 1.144E-14 | 3.207E-23 | 1.115E-23 | 1.761E-25 | 2.784E-27 |
| **tc97** | 1.144E-05 | 1.154E-05 | 1.154E-05 | 1.154E-05 | 1.154E-05 |
| **tc97m** | 1.042E-07 | 1.927E-13 | 9.491E-14 | 5.887E-15 | 3.651E-16 |
| **tc98** | 1.179E-02 | 1.179E-02 | 1.179E-02 | 1.179E-02 | 1.179E-02 |
| **tc99** | 1.079E+03 | 1.079E+03 | 1.079E+03 | 1.079E+03 | 1.079E+03 |
| **te120** | 2.588E-09 | 2.588E-09 | 2.588E-09 | 2.588E-09 | 2.588E-09 |
| **te121** | 3.455E-08 | 2.297E-11 | 1.551E-11 | 3.323E-12 | 7.120E-13 |
| **te121m** | 2.949E-07 | 1.961E-10 | 1.324E-10 | 2.837E-11 | 6.077E-12 |
| **te122** | 7.873E-01 | 7.873E-01 | 7.873E-01 | 7.873E-01 | 7.873E-01 |
| **te123** | 9.630E-03 | 1.009E-02 | 1.009E-02 | 1.009E-02 | 1.009E-02 |
| **te123m** | 4.520E-04 | 1.899E-08 | 1.106E-08 | 1.324E-09 | 1.586E-10 |
| **te124** | 5.641E-01 | 5.682E-01 | 5.682E-01 | 5.682E-01 | 5.682E-01 |
| **te125** | 1.085E+01 | 2.186E+01 | 2.216E+01 | 2.316E+01 | 2.394E+01 |
| **te125m** | 2.165E-01 | 6.603E-02 | 6.194E-02 | 4.818E-02 | 3.748E-02 |
| **te126** | 1.127E+00 | 1.127E+00 | 1.127E+00 | 1.127E+00 | 1.128E+00 |
| **te127** | 1.049E-03 | 1.716E-08 | 9.497E-09 | 9.326E-10 | 9.154E-11 |
| **te127m** | 2.996E-01 | 4.902E-06 | 2.713E-06 | 2.664E-07 | 2.615E-08 |
| **te128** | 1.798E+02 | 1.798E+02 | 1.798E+02 | 1.798E+02 | 1.798E+02 |
| **te129** | 7.972E-06 | 2.371E-21 | 3.481E-22 | 1.869E-25 | 1.003E-28 |
| **te129m** | 8.784E-03 | 2.613E-18 | 3.836E-19 | 2.059E-22 | 1.106E-25 |
| **te130** | 5.996E+02 | 5.996E+02 | 5.996E+02 | 5.996E+02 | 5.996E+02 |
| **th227** | 1.625E-12 | 7.252E-12 | 7.457E-12 | 8.751E-12 | 9.947E-12 |
| **th228** | 3.288E-06 | 2.036E-05 | 2.110E-05 | 2.370E-05 | 2.587E-05 |
| **th229** | 3.189E-07 | 3.316E-07 | 3.325E-07 | 3.360E-07 | 3.399E-07 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **th230** | 8.804E-05 | 2.863E-04 | 2.999E-04 | 3.561E-04 | 4.169E-04 |
| **th231** | 3.941E-09 | 3.950E-09 | 3.950E-09 | 3.952E-09 | 3.954E-09 |
| **th232** | 1.995E-04 | 2.403E-04 | 2.425E-04 | 2.512E-04 | 2.600E-04 |
| **th234** | 1.331E-05 | 1.331E-05 | 1.331E-05 | 1.331E-05 | 1.331E-05 |
| **ti46** | 8.560E-14 | 8.560E-14 | 8.560E-14 | 8.560E-14 | 8.560E-14 |
| **ti47** | 8.480E-14 | 8.480E-14 | 8.480E-14 | 8.480E-14 | 8.480E-14 |
| **ti48** | 8.619E-14 | 8.619E-14 | 8.619E-14 | 8.619E-14 | 8.619E-14 |
| **ti49** | 8.923E-14 | 8.923E-14 | 8.923E-14 | 8.923E-14 | 8.923E-14 |
| **ti50** | 9.048E-14 | 9.048E-14 | 9.048E-14 | 9.048E-14 | 9.048E-14 |
| **tl203** | 2.751E-15 | 2.756E-15 | 2.756E-15 | 2.756E-15 | 2.756E-15 |
| **tl204** | 5.270E-17 | 2.209E-17 | 2.109E-17 | 1.756E-17 | 1.462E-17 |
| **tl205** | 1.315E-15 | 1.315E-15 | 1.315E-15 | 1.315E-15 | 1.315E-15 |
| **tl207** | 2.596E-16 | 1.186E-15 | 1.211E-15 | 1.431E-15 | 1.627E-15 |
| **tl208** | 3.228E-12 | 2.034E-11 | 2.110E-11 | 2.367E-11 | 2.584E-11 |
| **tm168** | 1.055E-09 | 2.629E-15 | 1.316E-15 | 8.685E-17 | 5.737E-18 |
| **tm169** | 1.016E-03 | 1.016E-03 | 1.016E-03 | 1.016E-03 | 1.016E-03 |
| **tm170** | 5.528E-05 | 4.852E-09 | 2.939E-09 | 4.109E-10 | 5.746E-11 |
| **tm171** | 1.744E-04 | 3.146E-05 | 2.870E-05 | 2.001E-05 | 1.395E-05 |
| **u230** | 2.975E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 4.373E-04 | 1.046E-03 | 1.061E-03 | 1.110E-03 | 1.147E-03 |
| **u233** | 4.883E-04 | 7.846E-04 | 7.998E-04 | 8.665E-04 | 9.339E-04 |
| **u234** | 1.112E+01 | 1.903E+01 | 1.945E+01 | 2.110E+01 | 2.273E+01 |
| **u235** | 9.689E+02 | 9.715E+02 | 9.715E+02 | 9.722E+02 | 9.722E+02 |
| **u236** | 2.930E+02 | 2.979E+02 | 2.981E+02 | 2.992E+02 | 3.002E+02 |
| **u237** | 1.626E-04 | 1.292E-04 | 1.276E-04 | 1.216E-04 | 1.158E-04 |
| **u238** | 9.167E+05 | 9.167E+05 | 9.167E+05 | 9.167E+05 | 9.167E+05 |
| **u240** | 2.162E-12 | 2.162E-12 | 2.162E-12 | 2.162E-12 | 2.162E-12 |
| **v50** | 5.768E-17 | 5.768E-17 | 5.768E-17 | 5.768E-17 | 5.768E-17 |
| **v51** | 1.768E-15 | 1.768E-15 | 1.768E-15 | 1.768E-15 | 1.768E-15 |
| **w182** | 2.810E-13 | 2.817E-13 | 2.817E-13 | 2.817E-13 | 2.817E-13 |
| **w183** | 6.447E-13 | 6.447E-13 | 6.447E-13 | 6.447E-13 | 6.447E-13 |
| **w184** | 5.542E-13 | 5.542E-13 | 5.542E-13 | 5.542E-13 | 5.542E-13 |
| **w185** | 1.159E-16 | 1.311E-23 | 5.556E-24 | 1.913E-25 | 6.586E-27 |
| **w186** | 2.131E-13 | 2.131E-13 | 2.131E-13 | 2.131E-13 | 2.131E-13 |
| **xe124** | 2.368E-13 | 2.368E-13 | 2.368E-13 | 2.368E-13 | 2.368E-13 |
| **xe126** | 3.738E-04 | 3.738E-04 | 3.738E-04 | 3.738E-04 | 3.738E-04 |
| **xe127** | 5.560E-08 | 2.588E-22 | 4.404E-23 | 4.220E-26 | 4.043E-29 |
| **xe128** | 8.461E+00 | 8.461E+00 | 8.461E+00 | 8.461E+00 | 8.461E+00 |

| Table C-1. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **xe129** | 5.459E-02 | 5.465E-02 | 5.466E-02 | 5.467E-02 | 5.469E-02 |
| **xe129m** | 2.824E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe130** | 1.089E+01 | 1.089E+01 | 1.089E+01 | 1.089E+01 | 1.089E+01 |
| **xe131** | 3.234E-14 | 3.234E-14 | 3.234E-14 | 3.234E-14 | 3.234E-14 |
| **xe131** | 6.869E+02 | 6.869E+02 | 6.869E+02 | 6.869E+02 | 6.869E+02 |
| **xe131m** | 1.048E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe132** | 1.323E-14 | 1.323E-14 | 1.323E-14 | 1.323E-14 | 1.323E-14 |
| **xe132** | 1.709E+03 | 1.709E+03 | 1.709E+03 | 1.709E+03 | 1.709E+03 |
| **xe133** | 1.067E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe134** | 2.093E+03 | 2.093E+03 | 2.093E+03 | 2.093E+03 | 2.093E+03 |
| **xe136** | 3.109E+03 | 3.109E+03 | 3.109E+03 | 3.109E+03 | 3.109E+03 |
| **y88** | 2.973E-05 | 3.808E-10 | 2.080E-10 | 1.940E-11 | 1.808E-12 |
| **y89** | 3.273E+02 | 3.278E+02 | 3.278E+02 | 3.278E+02 | 3.278E+02 |
| **y89m** | 1.962E-10 | 9.299E-21 | 2.596E-21 | 1.737E-23 | 1.162E-25 |
| **y90** | 9.696E-02 | 8.645E-02 | 8.593E-02 | 8.388E-02 | 8.190E-02 |
| **y91** | 1.589E+00 | 1.927E-09 | 6.405E-10 | 8.480E-12 | 1.123E-13 |
| **yb168** | 2.160E-12 | 2.266E-12 | 2.266E-12 | 2.266E-12 | 2.266E-12 |
| **yb169** | 3.475E-12 | 1.767E-28 | 2.360E-29 | 8.738E-33 | 0.000E+00 |
| **yb170** | 6.981E-04 | 7.536E-04 | 7.536E-04 | 7.536E-04 | 7.536E-04 |
| **yb171** | 2.152E-04 | 3.583E-04 | 3.610E-04 | 3.697E-04 | 3.758E-04 |
| **yb172** | 4.374E-04 | 4.374E-04 | 4.374E-04 | 4.374E-04 | 4.374E-04 |
| **yb176** | 1.137E-16 | 1.137E-16 | 1.137E-16 | 1.137E-16 | 1.137E-16 |
| **zn64** | 4.143E-16 | 4.143E-16 | 4.143E-16 | 4.143E-16 | 4.143E-16 |
| **zn66** | 1.487E-04 | 1.487E-04 | 1.487E-04 | 1.487E-04 | 1.487E-04 |
| **zn67** | 4.152E-04 | 4.152E-04 | 4.152E-04 | 4.152E-04 | 4.152E-04 |
| **zn68** | 8.315E-04 | 8.315E-04 | 8.315E-04 | 8.315E-04 | 8.315E-04 |
| **zn70** | 4.107E-03 | 4.107E-03 | 4.107E-03 | 4.107E-03 | 4.107E-03 |
| **zr88** | 7.153E-12 | 3.975E-18 | 1.835E-18 | 8.837E-20 | 4.253E-21 |
| **zr90** | 2.125E+01 | 6.251E+01 | 6.460E+01 | 7.265E+01 | 8.051E+01 |
| **zr91** | 4.773E+02 | 4.789E+02 | 4.789E+02 | 4.789E+02 | 4.789E+02 |
| **zr92** | 5.800E+02 | 5.800E+02 | 5.800E+02 | 5.800E+02 | 5.800E+02 |
| **zr93** | 7.179E+02 | 7.179E+02 | 7.179E+02 | 7.179E+02 | 7.179E+02 |
| **zr94** | 8.243E+02 | 8.243E+02 | 8.243E+02 | 8.243E+02 | 8.243E+02 |
| **zr95** | 4.362E+00 | 3.107E-08 | 1.135E-08 | 2.183E-10 | 4.199E-12 |
| **zr96** | 9.616E+02 | 9.616E+02 | 9.616E+02 | 9.616E+02 | 9.616E+02 |
| **Total** | **1.1347E+06** | **1.1347E+06** | **1.1347E+06** | **1.1347E+06** | **1.1347E+06** |

**Table C-2. MOX Fuel Rod Al (low Pu): Nuclide mass in grams per MTIHM**

| | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ac225** | 1.483E-12 | 1.526E-12 | 1.528E-12 | 1.542E-12 | 1.556E-12 |
| **ac227** | 6.761E-10 | 2.843E-09 | 2.960E-09 | 3.417E-09 | 3.874E-09 |
| **ag105** | 7.308E-15 | 1.694E-27 | 3.557E-28 | 7.763E-31 | 1.694E-33 |
| **ag107** | 1.286E-04 | 4.074E-04 | 4.223E-04 | 4.811E-04 | 5.398E-04 |
| **ag108** | 5.837E-13 | 5.794E-13 | 5.791E-13 | 5.782E-13 | 5.773E-13 |
| **ag108m** | 6.488E-04 | 6.440E-04 | 6.438E-04 | 6.427E-04 | 6.417E-04 |
| **ag109** | 1.832E+02 | 1.832E+02 | 1.832E+02 | 1.832E+02 | 1.832E+02 |
| **ag109m** | 2.009E-10 | 1.487E-11 | 1.293E-11 | 7.473E-12 | 4.318E-12 |
| **ag110** | 1.990E-08 | 1.622E-10 | 1.253E-10 | 4.551E-11 | 1.652E-11 |
| **ag110m** | 1.284E+00 | 1.046E-02 | 8.080E-03 | 2.935E-03 | 1.066E-03 |
| **ag111** | 1.301E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **al 27** | 4.869E-14 | 4.869E-14 | 4.869E-14 | 4.869E-14 | 4.869E-14 |
| **am241** | 2.861E+02 | 1.004E+03 | 1.038E+03 | 1.166E+03 | 1.289E+03 |
| **am242** | 3.632E-05 | 3.548E-05 | 3.544E-05 | 3.526E-05 | 3.509E-05 |
| **am242m** | 2.815E+00 | 2.750E+00 | 2.747E+00 | 2.733E+00 | 2.719E+00 |
| **am243** | 4.170E+02 | 4.168E+02 | 4.168E+02 | 4.168E+02 | 4.167E+02 |
| **am244** | 9.188E-15 | 6.374E-15 | 6.250E-15 | 5.787E-15 | 5.358E-15 |
| **am245** | 9.300E-14 | 2.179E-15 | 1.782E-15 | 8.080E-16 | 3.665E-16 |
| **ar 36** | 6.419E-14 | 6.419E-14 | 6.419E-14 | 6.419E-14 | 6.419E-14 |
| **ar 38** | 6.853E-14 | 6.853E-14 | 6.853E-14 | 6.853E-14 | 6.853E-14 |
| **ar 39** | 1.282E-16 | 1.266E-16 | 1.265E-16 | 1.262E-16 | 1.259E-16 |
| **ar 40** | 7.262E-14 | 7.262E-14 | 7.262E-14 | 7.262E-14 | 7.262E-14 |
| **as 73** | 1.134E-10 | 3.613E-17 | 1.619E-17 | 6.932E-19 | 2.969E-20 |
| **as 74** | 1.481E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **as 75** | 1.544E-01 | 1.544E-01 | 1.544E-01 | 1.544E-01 | 1.544E-01 |
| **au197** | 1.817E-13 | 1.817E-13 | 1.817E-13 | 1.817E-13 | 1.817E-13 |
| **b 10** | 6.939E-11 | 3.785E-10 | 3.952E-10 | 4.603E-10 | 5.254E-10 |
| **b 11** | 8.106E-08 | 8.106E-08 | 8.106E-08 | 8.106E-08 | 8.106E-08 |
| **ba130** | 1.828E-13 | 1.828E-13 | 1.828E-13 | 1.828E-13 | 1.828E-13 |
| **ba131** | 3.873E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba132** | 2.871E-04 | 2.871E-04 | 2.871E-04 | 2.871E-04 | 2.871E-04 |
| **ba133** | 2.169E-04 | 1.586E-04 | 1.560E-04 | 1.460E-04 | 1.367E-04 |
| **ba134** | 1.152E+02 | 2.315E+02 | 2.340E+02 | 2.417E+02 | 2.473E+02 |
| **ba135** | 5.762E-01 | 5.770E-01 | 5.771E-01 | 5.772E-01 | 5.774E-01 |
| **ba136** | 3.883E+01 | 3.883E+01 | 3.883E+01 | 3.883E+01 | 3.883E+01 |
| **ba136m** | 2.460E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137** | 7.777E+01 | 2.266E+02 | 2.342E+02 | 2.633E+02 | 2.918E+02 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ba137m** | 2.195E-04 | 1.968E-04 | 1.956E-04 | 1.911E-04 | 1.868E-04 |
| **ba138** | 1.442E+03 | 1.442E+03 | 1.442E+03 | 1.442E+03 | 1.442E+03 |
| **ba140** | 1.172E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 9** | 2.587E-06 | 2.587E-06 | 2.587E-06 | 2.587E-06 | 2.587E-06 |
| **be 10** | 1.419E-04 | 1.419E-04 | 1.419E-04 | 1.419E-04 | 1.419E-04 |
| **bi208** | 1.514E-15 | 1.514E-15 | 1.514E-15 | 1.514E-15 | 1.514E-15 |
| **bi209** | 1.369E-10 | 3.045E-10 | 3.136E-10 | 3.497E-10 | 3.861E-10 |
| **bi210** | 3.253E-14 | 3.279E-14 | 3.309E-14 | 3.462E-14 | 3.684E-14 |
| **bi210m** | 2.165E-15 | 2.165E-15 | 2.165E-15 | 2.165E-15 | 2.165E-15 |
| **bi211** | 1.090E-16 | 4.950E-16 | 5.054E-16 | 5.948E-16 | 6.741E-16 |
| **bi212** | 2.125E-10 | 1.268E-09 | 1.315E-09 | 1.472E-09 | 1.604E-09 |
| **bi213** | 4.444E-15 | 4.574E-15 | 4.580E-15 | 4.621E-15 | 4.663E-15 |
| **bk247** | 1.824E-12 | 1.819E-12 | 1.819E-12 | 1.818E-12 | 1.817E-12 |
| **bk248** | 7.288E-11 | 5.056E-11 | 4.958E-11 | 4.591E-11 | 4.250E-11 |
| **bk249** | 2.442E-05 | 5.721E-07 | 4.677E-07 | 2.121E-07 | 9.623E-08 |
| **bk250** | 1.669E-14 | 2.153E-16 | 1.707E-16 | 6.899E-17 | 2.836E-17 |
| **br 79** | 2.716E-03 | 2.772E-03 | 2.775E-03 | 2.786E-03 | 2.798E-03 |
| **br 81** | 2.095E+01 | 2.095E+01 | 2.095E+01 | 2.095E+01 | 2.095E+01 |
| **c 12** | 8.265E-02 | 8.265E-02 | 8.265E-02 | 8.265E-02 | 8.265E-02 |
| **c 13** | 1.301E+01 | 1.301E+01 | 1.301E+01 | 1.301E+01 | 1.301E+01 |
| **c 14** | 4.199E-04 | 4.197E-04 | 4.196E-04 | 4.196E-04 | 4.196E-04 |
| **ca 40** | 7.196E-14 | 7.196E-14 | 7.196E-14 | 7.196E-14 | 7.196E-14 |
| **ca 41** | 5.450E-17 | 5.450E-17 | 5.450E-17 | 5.450E-17 | 5.450E-17 |
| **ca 42** | 7.598E-14 | 7.598E-14 | 7.598E-14 | 7.598E-14 | 7.598E-14 |
| **ca 43** | 7.612E-14 | 7.612E-14 | 7.612E-14 | 7.612E-14 | 7.612E-14 |
| **ca 44** | 8.087E-14 | 8.087E-14 | 8.087E-14 | 8.087E-14 | 8.087E-14 |
| **ca 46** | 8.291E-14 | 8.291E-14 | 8.291E-14 | 8.291E-14 | 8.291E-14 |
| **ca 48** | 8.647E-14 | 8.647E-14 | 8.647E-14 | 8.647E-14 | 8.647E-14 |
| **cd106** | 2.959E-13 | 2.959E-13 | 2.959E-13 | 2.959E-13 | 2.959E-13 |
| **cd108** | 1.394E-03 | 1.395E-03 | 1.395E-03 | 1.395E-03 | 1.395E-03 |
| **cd109** | 2.022E-04 | 1.497E-05 | 1.301E-05 | 7.519E-06 | 4.346E-06 |
| **cd110** | 1.407E+02 | 1.419E+02 | 1.419E+02 | 1.419E+02 | 1.419E+02 |
| **cd111** | 6.153E+01 | 6.153E+01 | 6.153E+01 | 6.153E+01 | 6.153E+01 |
| **cd112** | 2.921E+01 | 2.921E+01 | 2.921E+01 | 2.921E+01 | 2.921E+01 |
| **cd113** | 2.690E-01 | 2.690E-01 | 2.690E-01 | 2.690E-01 | 2.690E-01 |
| **cd113m** | 3.905E-03 | 3.093E-03 | 3.054E-03 | 2.907E-03 | 2.768E-03 |
| **cd114** | 3.118E+01 | 3.118E+01 | 3.118E+01 | 3.118E+01 | 3.118E+01 |
| **cd115m** | 5.691E-04 | 1.116E-15 | 2.626E-16 | 8.984E-19 | 3.074E-21 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cd116** | 1.025E+01 | 1.025E+01 | 1.025E+01 | 1.025E+01 | 1.025E+01 |
| **ce136** | 2.237E-13 | 2.237E-13 | 2.237E-13 | 2.237E-13 | 2.237E-13 |
| **ce138** | 1.012E-05 | 1.012E-05 | 1.012E-05 | 1.012E-05 | 1.012E-05 |
| **ce139** | 1.325E-03 | 2.148E-07 | 1.345E-07 | 2.140E-08 | 3.405E-09 |
| **ce140** | 1.375E+03 | 1.375E+03 | 1.375E+03 | 1.375E+03 | 1.375E+03 |
| **ce141** | 1.727E-01 | 1.547E-17 | 2.129E-18 | 8.878E-22 | 3.700E-25 |
| **ce142** | 1.188E+03 | 1.188E+03 | 1.188E+03 | 1.188E+03 | 1.188E+03 |
| **ce144** | 1.685E+02 | 2.486E+00 | 1.983E+00 | 8.159E-01 | 3.357E-01 |
| **cf248** | 4.936E-11 | 1.346E-12 | 1.109E-12 | 5.196E-13 | 2.433E-13 |
| **cf249** | 2.663E-05 | 5.007E-05 | 5.015E-05 | 5.030E-05 | 5.032E-05 |
| **cf250** | 1.485E-05 | 1.155E-05 | 1.140E-05 | 1.081E-05 | 1.025E-05 |
| **cf251** | 7.691E-06 | 7.664E-06 | 7.664E-06 | 7.658E-06 | 7.651E-06 |
| **cf252** | 3.139E-06 | 9.050E-07 | 8.469E-07 | 6.516E-07 | 5.015E-07 |
| **cf253** | 1.944E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.177E-11 | 2.805E-20 | 9.663E-21 | 1.476E-22 | 2.254E-24 |
| **cl 35** | 5.893E-14 | 5.893E-14 | 5.893E-14 | 5.893E-14 | 5.893E-14 |
| **cl 36** | 4.475E-15 | 4.475E-15 | 4.475E-15 | 4.475E-15 | 4.475E-15 |
| **cl 37** | 6.748E-14 | 6.748E-14 | 6.748E-14 | 6.748E-14 | 6.748E-14 |
| **cm240** | 1.465E-11 | 6.985E-31 | 6.414E-32 | 0.000E+00 | 0.000E+00 |
| **cm241** | 2.039E-08 | 2.536E-24 | 3.553E-25 | 1.588E-28 | 7.091E-32 |
| **cm242** | 1.716E+01 | 1.795E-02 | 1.442E-02 | 8.667E-03 | 7.420E-03 |
| **cm243** | 1.623E+00 | 1.450E+00 | 1.441E+00 | 1.408E+00 | 1.374E+00 |
| **cm244** | 1.952E+02 | 1.628E+02 | 1.612E+02 | 1.552E+02 | 1.493E+02 |
| **cm245** | 2.018E+01 | 2.018E+01 | 2.018E+01 | 2.018E+01 | 2.018E+01 |
| **cm246** | 1.855E+00 | 1.855E+00 | 1.854E+00 | 1.854E+00 | 1.854E+00 |
| **cm247** | 3.272E-02 | 3.272E-02 | 3.272E-02 | 3.272E-02 | 3.272E-02 |
| **cm248** | 2.613E-03 | 2.616E-03 | 2.616E-03 | 2.616E-03 | 2.616E-03 |
| **cm250** | 3.792E-10 | 3.791E-10 | 3.791E-10 | 3.791E-10 | 3.790E-10 |
| **co 59** | 1.080E-13 | 1.080E-13 | 1.080E-13 | 1.080E-13 | 1.080E-13 |
| **co 60** | 1.238E-14 | 6.635E-15 | 6.415E-15 | 5.625E-15 | 4.932E-15 |
| **cr 50** | 8.779E-14 | 8.779E-14 | 8.779E-14 | 8.779E-14 | 8.779E-14 |
| **cr 52** | 9.366E-14 | 9.366E-14 | 9.366E-14 | 9.366E-14 | 9.366E-14 |
| **cr 53** | 9.294E-14 | 9.294E-14 | 9.294E-14 | 9.294E-14 | 9.294E-14 |
| **cr 54** | 1.003E-13 | 1.003E-13 | 1.003E-13 | 1.003E-13 | 1.003E-13 |
| **cs131** | 1.530E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 1.334E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs133** | 1.286E+03 | 1.286E+03 | 1.286E+03 | 1.286E+03 | 1.286E+03 |
| **cs134** | 1.460E+02 | 2.971E+01 | 2.727E+01 | 1.950E+01 | 1.394E+01 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cs135** | 5.684E+02 | 5.684E+02 | 5.684E+02 | 5.684E+02 | 5.684E+02 |
| **cs136** | 8.192E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.437E+03 | 1.288E+03 | 1.281E+03 | 1.251E+03 | 1.223E+03 |
| **cu 63** | 1.123E-13 | 1.124E-13 | 1.124E-13 | 1.124E-13 | 1.124E-13 |
| **cu 65** | 4.828E-07 | 4.828E-07 | 4.828E-07 | 4.828E-07 | 4.828E-07 |
| **dy156** | 2.849E-12 | 2.849E-12 | 2.849E-12 | 2.849E-12 | 2.849E-12 |
| **dy158** | 1.191E-07 | 3.892E-07 | 4.036E-07 | 4.598E-07 | 5.158E-07 |
| **dy159** | 2.325E-07 | 5.671E-11 | 3.628E-11 | 6.293E-12 | 1.091E-12 |
| **dy160** | 8.911E-01 | 9.076E-01 | 9.076E-01 | 9.076E-01 | 9.076E-01 |
| **dy161** | 1.070E+00 | 1.070E+00 | 1.070E+00 | 1.070E+00 | 1.070E+00 |
| **dy162** | 6.787E-01 | 6.787E-01 | 6.787E-01 | 6.787E-01 | 6.787E-01 |
| **dy163** | 5.874E-01 | 5.874E-01 | 5.874E-01 | 5.874E-01 | 5.874E-01 |
| **dy164** | 2.183E-01 | 2.183E-01 | 2.183E-01 | 2.183E-01 | 2.183E-01 |
| **er162** | 3.026E-12 | 3.026E-12 | 3.026E-12 | 3.026E-12 | 3.026E-12 |
| **er164** | 3.165E-06 | 3.165E-06 | 3.165E-06 | 3.165E-06 | 3.165E-06 |
| **er166** | 8.984E-02 | 8.984E-02 | 8.984E-02 | 8.984E-02 | 8.984E-02 |
| **er167** | 4.007E-03 | 4.007E-03 | 4.007E-03 | 4.007E-03 | 4.007E-03 |
| **er168** | 1.314E-02 | 1.314E-02 | 1.314E-02 | 1.314E-02 | 1.314E-02 |
| **er169** | 1.051E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **er170** | 6.586E-04 | 6.587E-04 | 6.587E-04 | 6.587E-04 | 6.587E-04 |
| **es252** | 8.608E-15 | 6.741E-16 | 5.880E-16 | 3.439E-16 | 2.012E-16 |
| **es253** | 4.688E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 3.492E-11 | 4.475E-13 | 3.543E-13 | 1.415E-13 | 5.652E-14 |
| **es255** | 6.154E-14 | 4.801E-27 | 9.505E-28 | 1.649E-30 | 2.861E-33 |
| **eu147** | 2.416E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 4.356E-11 | 1.085E-16 | 5.430E-17 | 3.586E-18 | 2.368E-19 |
| **eu151** | 1.371E-01 | 8.416E-01 | 8.786E-01 | 1.024E+00 | 1.167E+00 |
| **eu152** | 2.289E-02 | 1.795E-02 | 1.772E-02 | 1.684E-02 | 1.600E-02 |
| **eu153** | 1.811E+02 | 1.811E+02 | 1.811E+02 | 1.811E+02 | 1.811E+02 |
| **eu154** | 5.121E+01 | 3.494E+01 | 3.423E+01 | 3.158E+01 | 2.913E+01 |
| **eu155** | 1.300E+01 | 6.508E+00 | 6.271E+00 | 5.421E+00 | 4.686E+00 |
| **eu156** | 3.765E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **f 19** | 1.556E-13 | 1.556E-13 | 1.556E-13 | 1.556E-13 | 1.556E-13 |
| **fe 54** | 9.689E-14 | 9.689E-14 | 9.689E-14 | 9.689E-14 | 9.689E-14 |
| **fe 55** | 2.431E-16 | 7.335E-17 | 6.873E-17 | 5.341E-17 | 4.149E-17 |
| **fe 56** | 1.072E-13 | 1.072E-13 | 1.072E-13 | 1.072E-13 | 1.072E-13 |
| **fe 57** | 1.028E-13 | 1.028E-13 | 1.028E-13 | 1.028E-13 | 1.028E-13 |
| **fe 58** | 2.977E-13 | 2.977E-13 | 2.977E-13 | 2.977E-13 | 2.977E-13 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **fr221** | 4.956E-16 | 5.101E-16 | 5.108E-16 | 5.154E-16 | 5.200E-16 |
| **ga 69** | 1.601E-03 | 1.601E-03 | 1.601E-03 | 1.601E-03 | 1.601E-03 |
| **ga 71** | 6.787E-03 | 6.787E-03 | 6.787E-03 | 6.787E-03 | 6.787E-03 |
| **gd151** | 4.919E-08 | 3.053E-12 | 1.815E-12 | 2.360E-13 | 3.067E-14 |
| **gd152** | 4.936E-02 | 5.074E-02 | 5.080E-02 | 5.105E-02 | 5.128E-02 |
| **gd153** | 1.929E-03 | 1.304E-05 | 9.973E-06 | 3.481E-06 | 1.215E-06 |
| **gd154** | 8.186E+00 | 2.446E+01 | 2.517E+01 | 2.781E+01 | 3.026E+01 |
| **gd155** | 1.627E+00 | 8.120E+00 | 8.357E+00 | 9.208E+00 | 9.940E+00 |
| **gd156** | 1.673E+02 | 1.673E+02 | 1.673E+02 | 1.673E+02 | 1.673E+02 |
| **gd157** | 2.938E-01 | 2.938E-01 | 2.938E-01 | 2.938E-01 | 2.938E-01 |
| **gd158** | 4.432E+01 | 4.432E+01 | 4.432E+01 | 4.432E+01 | 4.432E+01 |
| **gd160** | 2.861E+00 | 2.861E+00 | 2.861E+00 | 2.861E+00 | 2.861E+00 |
| **ge 70** | 2.146E-05 | 2.146E-05 | 2.146E-05 | 2.146E-05 | 2.146E-05 |
| **ge 71** | 4.694E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 72** | 1.623E-02 | 1.623E-02 | 1.623E-02 | 1.623E-02 | 1.623E-02 |
| **ge 73** | 3.332E-02 | 3.332E-02 | 3.332E-02 | 3.332E-02 | 3.332E-02 |
| **ge 73m** | 8.159E-18 | 2.599E-24 | 1.164E-24 | 4.986E-26 | 2.135E-27 |
| **ge 74** | 7.843E-02 | 7.843E-02 | 7.843E-02 | 7.843E-02 | 7.843E-02 |
| **ge 76** | 3.498E-01 | 3.498E-01 | 3.498E-01 | 3.498E-01 | 3.498E-01 |
| **h 1** | 6.919E-03 | 6.919E-03 | 6.919E-03 | 6.919E-03 | 6.919E-03 |
| **h 2** | 1.481E-03 | 1.481E-03 | 1.481E-03 | 1.481E-03 | 1.481E-03 |
| **h3** | 6.727E-02 | 5.152E-02 | 5.079E-02 | 4.802E-02 | 4.539E-02 |
| **he3** | 3.977E-03 | 1.974E-02 | 2.047E-02 | 2.325E-02 | 2.587E-02 |
| **he4** | 7.829E+00 | 8.934E+00 | 8.977E+00 | 9.149E+00 | 9.320E+00 |
| **hf174** | 1.134E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 |
| **hf175** | 8.410E-16 | 2.965E-23 | 1.181E-23 | 3.179E-25 | 8.561E-27 |
| **hf176** | 3.301E-13 | 3.301E-13 | 3.301E-13 | 3.301E-13 | 3.301E-13 |
| **hf177** | 4.318E-14 | 4.319E-14 | 4.319E-14 | 4.319E-14 | 4.319E-14 |
| **hf178** | 2.739E-13 | 2.739E-13 | 2.739E-13 | 2.739E-13 | 2.739E-13 |
| **hf179** | 7.836E-13 | 7.836E-13 | 7.836E-13 | 7.836E-13 | 7.836E-13 |
| **hf180** | 6.532E-13 | 6.532E-13 | 6.532E-13 | 6.532E-13 | 6.532E-13 |
| **hf181** | 2.733E-17 | 1.348E-29 | 2.946E-30 | 7.539E-33 | 0.000E+00 |
| **hf182** | 1.493E-15 | 1.493E-15 | 1.493E-15 | 1.493E-15 | 1.493E-15 |
| **hg196** | 7.856E-15 | 7.856E-15 | 7.856E-15 | 7.856E-15 | 7.856E-15 |
| **hg198** | 6.649E-13 | 6.649E-13 | 6.649E-13 | 6.649E-13 | 6.649E-13 |
| **hg199** | 8.120E-14 | 8.120E-14 | 8.120E-14 | 8.120E-14 | 8.120E-14 |
| **hg200** | 8.548E-13 | 8.548E-13 | 8.548E-13 | 8.548E-13 | 8.548E-13 |
| **hg201** | 3.485E-13 | 3.485E-13 | 3.485E-13 | 3.485E-13 | 3.485E-13 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hg202** | 3.788E-13 | 3.788E-13 | 3.788E-13 | 3.788E-13 | 3.788E-13 |
| **hg204** | 3.664E-13 | 3.664E-13 | 3.664E-13 | 3.664E-13 | 3.664E-13 |
| **ho163** | 1.785E-07 | 1.784E-07 | 1.784E-07 | 1.784E-07 | 1.783E-07 |
| **ho165** | 2.712E-01 | 2.712E-01 | 2.712E-01 | 2.712E-01 | 2.712E-01 |
| **ho166m** | 6.179E-04 | 6.163E-04 | 6.161E-04 | 6.158E-04 | 6.154E-04 |
| **i125** | 8.509E-10 | 1.403E-18 | 4.740E-19 | 6.701E-21 | 9.465E-23 |
| **i126** | 1.452E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i127** | 7.922E+01 | 7.948E+01 | 7.948E+01 | 7.948E+01 | 7.948E+01 |
| **i129** | 2.564E+02 | 2.564E+02 | 2.564E+02 | 2.564E+02 | 2.564E+02 |
| **i131** | 9.947E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113** | 5.810E-04 | 1.392E-03 | 1.431E-03 | 1.577E-03 | 1.716E-03 |
| **in113m** | 3.351E-14 | 9.821E-19 | 5.610E-19 | 6.227E-20 | 6.913E-21 |
| **in114** | 3.279E-12 | 9.525E-23 | 2.590E-23 | 1.563E-25 | 9.432E-28 |
| **in114m** | 2.017E-07 | 5.856E-18 | 1.593E-18 | 9.610E-21 | 5.802E-23 |
| **in115** | 2.754E+00 | 2.754E+00 | 2.754E+00 | 2.754E+00 | 2.754E+00 |
| **in115m** | 2.536E-10 | 4.973E-22 | 1.171E-22 | 4.004E-25 | 1.370E-27 |
| **ir191** | 4.460E-15 | 4.460E-15 | 4.460E-15 | 4.460E-15 | 4.460E-15 |
| **ir192** | 9.709E-17 | 8.337E-24 | 3.481E-24 | 1.131E-25 | 3.674E-27 |
| **ir193** | 1.501E-13 | 1.513E-13 | 1.514E-13 | 1.516E-13 | 1.519E-13 |
| **k 39** | 6.992E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 | 6.998E-14 |
| **k 40** | 6.840E-14 | 6.840E-14 | 6.840E-14 | 6.840E-14 | 6.840E-14 |
| **k 41** | 7.730E-14 | 7.730E-14 | 7.730E-14 | 7.730E-14 | 7.730E-14 |
| **kr 78** | 1.787E-13 | 1.787E-13 | 1.787E-13 | 1.787E-13 | 1.787E-13 |
| **kr 80** | 4.765E-04 | 4.765E-04 | 4.765E-04 | 4.765E-04 | 4.765E-04 |
| **kr 81** | 4.076E-05 | 4.076E-05 | 4.076E-05 | 4.076E-05 | 4.076E-05 |
| **kr 82** | 9.129E-01 | 9.129E-01 | 9.129E-01 | 9.129E-01 | 9.129E-01 |
| **kr 83** | 3.403E+01 | 3.403E+01 | 3.403E+01 | 3.403E+01 | 3.403E+01 |
| **kr 83m** | 3.450E-11 | 3.060E-17 | 1.448E-17 | 7.697E-19 | 4.089E-20 |
| **kr 84** | 8.324E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 |
| **kr 85** | 1.662E+01 | 1.224E+01 | 1.204E+01 | 1.129E+01 | 1.059E+01 |
| **kr 86** | 1.224E+02 | 1.224E+02 | 1.224E+02 | 1.224E+02 | 1.224E+02 |
| **la137** | 1.939E-14 | 1.939E-14 | 1.939E-14 | 1.939E-14 | 1.939E-14 |
| **la137** | 4.201E-04 | 4.201E-04 | 4.201E-04 | 4.201E-04 | 4.201E-04 |
| **la138** | 2.514E-02 | 2.514E-02 | 2.514E-02 | 2.514E-02 | 2.514E-02 |
| **la139** | 1.336E+03 | 1.336E+03 | 1.336E+03 | 1.336E+03 | 1.336E+03 |
| **la140** | 1.780E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **li6** | 2.700E-10 | 2.700E-10 | 2.700E-10 | 2.700E-10 | 2.700E-10 |
| **li7** | 3.333E-11 | 3.333E-11 | 3.333E-11 | 3.333E-11 | 3.333E-11 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu175** | 2.932E-13 | 2.940E-13 | 2.940E-13 | 2.940E-13 | 2.940E-13 |
| **lu176** | 6.077E-15 | 6.077E-15 | 6.077E-15 | 6.077E-15 | 6.077E-15 |
| **mg 24** | 4.334E-14 | 4.334E-14 | 4.334E-14 | 4.334E-14 | 4.334E-14 |
| **mg 25** | 4.508E-14 | 4.508E-14 | 4.508E-14 | 4.508E-14 | 4.508E-14 |
| **mg 26** | 4.692E-14 | 4.692E-14 | 4.692E-14 | 4.692E-14 | 4.692E-14 |
| **mn 54** | 2.264E-17 | 4.820E-19 | 3.921E-19 | 1.743E-19 | 7.750E-20 |
| **mn 55** | 9.650E-14 | 9.670E-14 | 9.670E-14 | 9.670E-14 | 9.670E-14 |
| **mo 92** | 6.205E-12 | 6.205E-12 | 6.205E-12 | 6.205E-12 | 6.205E-12 |
| **mo 93** | 4.148E-07 | 4.144E-07 | 4.144E-07 | 4.143E-07 | 4.142E-07 |
| **mo 94** | 1.386E-02 | 1.386E-02 | 1.386E-02 | 1.386E-02 | 1.386E-02 |
| **mo 95** | 7.150E+02 | 7.223E+02 | 7.223E+02 | 7.223E+02 | 7.223E+02 |
| **mo 96** | 4.619E+01 | 4.619E+01 | 4.619E+01 | 4.619E+01 | 4.619E+01 |
| **mo 97** | 8.720E+02 | 8.720E+02 | 8.720E+02 | 8.720E+02 | 8.720E+02 |
| **mo 98** | 9.551E+02 | 9.551E+02 | 9.551E+02 | 9.551E+02 | 9.551E+02 |
| **mo100** | 1.124E+03 | 1.124E+03 | 1.124E+03 | 1.124E+03 | 1.124E+03 |
| **n 14** | 5.025E-06 | 5.267E-06 | 5.280E-06 | 5.331E-06 | 5.382E-06 |
| **n 15** | 1.220E-02 | 1.220E-02 | 1.220E-02 | 1.220E-02 | 1.220E-02 |
| **na 23** | 4.146E-14 | 4.146E-14 | 4.146E-14 | 4.146E-14 | 4.146E-14 |
| **nb 91** | 8.911E-09 | 8.872E-09 | 8.865E-09 | 8.858E-09 | 8.852E-09 |
| **nb 91m** | 5.542E-15 | 1.485E-23 | 5.149E-24 | 8.060E-26 | 1.262E-27 |
| **nb 92** | 7.711E-07 | 7.711E-07 | 7.711E-07 | 7.711E-07 | 7.711E-07 |
| **nb 92m** | 1.528E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93** | 9.689E-05 | 3.580E-04 | 3.778E-04 | 4.606E-04 | 5.514E-04 |
| **nb 93m** | 5.859E-04 | 1.622E-03 | 1.672E-03 | 1.863E-03 | 2.045E-03 |
| **nb 94** | 2.942E-03 | 2.941E-03 | 2.941E-03 | 2.941E-03 | 2.941E-03 |
| **nb 95** | 3.795E+00 | 2.856E-08 | 1.042E-08 | 2.067E-10 | 3.979E-12 |
| **nb 95m** | 2.143E-03 | 1.526E-11 | 5.578E-12 | 1.072E-13 | 2.063E-15 |
| **nd142** | 2.195E+01 | 2.195E+01 | 2.195E+01 | 2.195E+01 | 2.195E+01 |
| **nd143** | 8.416E+02 | 8.416E+02 | 8.416E+02 | 8.416E+02 | 8.416E+02 |
| **nd144** | 1.043E+03 | 1.210E+03 | 1.210E+03 | 1.211E+03 | 1.212E+03 |
| **nd145** | 6.622E+02 | 6.622E+02 | 6.622E+02 | 6.622E+02 | 6.622E+02 |
| **nd146** | 7.572E+02 | 7.572E+02 | 7.572E+02 | 7.572E+02 | 7.572E+02 |
| **nd147** | 4.031E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd148** | 4.369E+02 | 4.369E+02 | 4.369E+02 | 4.369E+02 | 4.369E+02 |
| **nd150** | 2.563E+02 | 2.563E+02 | 2.563E+02 | 2.563E+02 | 2.563E+02 |
| **ni 58** | 1.036E-13 | 1.036E-13 | 1.036E-13 | 1.036E-13 | 1.036E-13 |
| **ni 59** | 7.941E-14 | 7.941E-14 | 7.941E-14 | 7.941E-14 | 7.941E-14 |
| **ni 60** | 1.355E-13 | 1.412E-13 | 1.414E-13 | 1.422E-13 | 1.429E-13 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ni 61** | 1.102E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 |
| **ni 62** | 1.098E-13 | 1.098E-13 | 1.098E-13 | 1.098E-13 | 1.098E-13 |
| **ni 63** | 2.543E-15 | 2.462E-15 | 2.457E-15 | 2.440E-15 | 2.424E-15 |
| **ni 64** | 1.161E-13 | 1.161E-13 | 1.161E-13 | 1.161E-13 | 1.161E-13 |
| **np235** | 2.407E-06 | 1.160E-07 | 9.861E-08 | 5.207E-08 | 2.750E-08 |
| **np236** | 3.295E-04 | 3.295E-04 | 3.295E-04 | 3.295E-04 | 3.295E-04 |
| **np237** | 1.929E+02 | 1.978E+02 | 1.982E+02 | 1.999E+02 | 2.019E+02 |
| **np238** | 5.224E-07 | 5.103E-07 | 5.097E-07 | 5.072E-07 | 5.047E-07 |
| **np239** | 3.589E-04 | 3.588E-04 | 3.588E-04 | 3.588E-04 | 3.588E-04 |
| **np240** | 2.559E-16 | 2.559E-16 | 2.559E-16 | 2.559E-16 | 2.559E-16 |
| **np240m** | 2.487E-14 | 2.487E-14 | 2.487E-14 | 2.487E-14 | 2.487E-14 |
| **o 16** | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 |
| **o 17** | 4.422E-02 | 4.422E-02 | 4.422E-02 | 4.422E-02 | 4.422E-02 |
| **o 18** | 2.210E-07 | 2.210E-07 | 2.210E-07 | 2.210E-07 | 2.210E-07 |
| **os186** | 2.122E-13 | 2.122E-13 | 2.122E-13 | 2.122E-13 | 2.122E-13 |
| **os187** | 4.033E-14 | 4.033E-14 | 4.033E-14 | 4.033E-14 | 4.033E-14 |
| **os188** | 1.598E-13 | 1.598E-13 | 1.598E-13 | 1.598E-13 | 1.598E-13 |
| **os189** | 1.178E-14 | 1.178E-14 | 1.178E-14 | 1.178E-14 | 1.178E-14 |
| **os190** | 3.570E-15 | 3.570E-15 | 3.570E-15 | 3.570E-15 | 3.570E-15 |
| **os192** | 7.678E-15 | 7.684E-15 | 7.684E-15 | 7.684E-15 | 7.684E-15 |
| **p 31** | 5.596E-14 | 5.596E-14 | 5.596E-14 | 5.596E-14 | 5.596E-14 |
| **pa230** | 9.525E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 2.299E-05 | 2.634E-05 | 2.652E-05 | 2.723E-05 | 2.793E-05 |
| **pa232** | 1.531E-14 | 1.530E-14 | 1.530E-14 | 1.530E-14 | 1.530E-14 |
| **pa233** | 6.530E-06 | 6.695E-06 | 6.708E-06 | 6.774E-06 | 6.840E-06 |
| **pa234** | 2.520E-10 | 2.520E-10 | 2.520E-10 | 2.520E-10 | 2.520E-10 |
| **pa234m** | 4.540E-10 | 4.541E-10 | 4.540E-10 | 4.540E-10 | 4.540E-10 |
| **pb204** | 3.666E-13 | 3.666E-13 | 3.666E-13 | 3.666E-13 | 3.666E-13 |
| **pb205** | 1.423E-15 | 1.424E-15 | 1.424E-15 | 1.424E-15 | 1.424E-15 |
| **pb206** | 2.017E-12 | 9.445E-12 | 9.854E-12 | 1.150E-11 | 1.321E-11 |
| **pb207** | 7.137E-11 | 3.101E-10 | 3.313E-10 | 4.231E-10 | 5.282E-10 |
| **pb208** | 1.038E-06 | 2.216E-05 | 2.410E-05 | 3.232E-05 | 4.140E-05 |
| **pb209** | 1.867E-14 | 1.921E-14 | 1.924E-14 | 1.941E-14 | 1.958E-14 |
| **pb210** | 5.261E-11 | 5.302E-11 | 5.350E-11 | 5.598E-11 | 5.957E-11 |
| **pb211** | 1.840E-15 | 8.350E-15 | 8.529E-15 | 1.003E-14 | 1.138E-14 |
| **pb212** | 2.241E-09 | 1.337E-08 | 1.386E-08 | 1.552E-08 | 1.691E-08 |
| **pd102** | 8.568E-04 | 1.014E-03 | 1.014E-03 | 1.014E-03 | 1.015E-03 |
| **pd103** | 2.838E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pd104** | 4.049E+02 | 4.049E+02 | 4.049E+02 | 4.049E+02 | 4.049E+02 |
| **pd105** | 8.370E+02 | 8.370E+02 | 8.370E+02 | 8.370E+02 | 8.370E+02 |
| **pd106** | 7.025E+02 | 8.904E+02 | 8.918E+02 | 8.951E+02 | 8.964E+02 |
| **pd107** | 5.511E+02 | 5.511E+02 | 5.511E+02 | 5.511E+02 | 5.511E+02 |
| **pd108** | 3.841E+02 | 3.841E+02 | 3.841E+02 | 3.841E+02 | 3.841E+02 |
| **pd110** | 1.274E+02 | 1.274E+02 | 1.274E+02 | 1.274E+02 | 1.274E+02 |
| **pm143** | 1.490E-12 | 1.601E-14 | 1.256E-14 | 4.833E-15 | 1.861E-15 |
| **pm144** | 4.549E-10 | 1.663E-11 | 1.392E-11 | 6.932E-12 | 3.454E-12 |
| **pm145** | 3.239E-05 | 2.712E-05 | 2.685E-05 | 2.582E-05 | 2.483E-05 |
| **pm146** | 3.035E-04 | 1.675E-04 | 1.622E-04 | 1.431E-04 | 1.262E-04 |
| **pm147** | 1.477E+02 | 4.218E+01 | 3.944E+01 | 3.029E+01 | 2.326E+01 |
| **pm148** | 1.596E-04 | 3.699E-17 | 7.763E-18 | 1.694E-20 | 3.697E-23 |
| **pm148m** | 2.541E-02 | 5.893E-15 | 1.237E-15 | 2.699E-18 | 5.890E-21 |
| **po210** | 7.909E-13 | 8.812E-13 | 8.872E-13 | 9.208E-13 | 9.716E-13 |
| **po216** | 8.641E-15 | 5.155E-14 | 5.345E-14 | 5.984E-14 | 6.522E-14 |
| **pr141** | 1.212E+03 | 1.213E+03 | 1.213E+03 | 1.213E+03 | 1.213E+03 |
| **pr143** | 2.665E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 7.097E-03 | 1.047E-04 | 8.350E-05 | 3.436E-05 | 1.414E-05 |
| **pr144m** | 2.824E-05 | 4.166E-07 | 3.322E-07 | 1.367E-07 | 5.625E-08 |
| **pt192** | 1.280E-13 | 1.280E-13 | 1.280E-13 | 1.280E-13 | 1.280E-13 |
| **pt193** | 1.992E-14 | 1.865E-14 | 1.859E-14 | 1.833E-14 | 1.808E-14 |
| **pt194** | 3.816E-13 | 3.816E-13 | 3.816E-13 | 3.816E-13 | 3.816E-13 |
| **pt195** | 3.520E-15 | 3.520E-15 | 3.520E-15 | 3.520E-15 | 3.520E-15 |
| **pt196** | 6.198E-16 | 6.198E-16 | 6.198E-16 | 6.198E-16 | 6.198E-16 |
| **pu236** | 1.041E-03 | 3.293E-04 | 3.095E-04 | 2.429E-04 | 1.906E-04 |
| **pu237** | 1.103E-05 | 4.092E-17 | 9.966E-18 | 3.900E-20 | 1.526E-22 |
| **pu238** | 1.928E+02 | 2.021E+02 | 2.017E+02 | 2.001E+02 | 1.986E+02 |
| **pu239** | 1.027E+04 | 1.027E+04 | 1.027E+04 | 1.027E+04 | 1.027E+04 |
| **pu240** | 5.657E+03 | 5.686E+03 | 5.687E+03 | 5.693E+03 | 5.698E+03 |
| **pu241** | 3.516E+03 | 2.793E+03 | 2.758E+03 | 2.628E+03 | 2.504E+03 |
| **pu242** | 1.446E+03 | 1.446E+03 | 1.446E+03 | 1.446E+03 | 1.446E+03 |
| **pu243** | 1.166E-12 | 1.166E-12 | 1.166E-12 | 1.166E-12 | 1.166E-12 |
| **pu244** | 1.496E-01 | 1.496E-01 | 1.496E-01 | 1.496E-01 | 1.496E-01 |
| **pu246** | 2.402E-16 | 2.401E-16 | 2.401E-16 | 2.401E-16 | 2.400E-16 |
| **ra223** | 8.865E-13 | 4.024E-12 | 4.108E-12 | 4.835E-12 | 5.482E-12 |
| **ra224** | 1.954E-08 | 1.166E-07 | 1.209E-07 | 1.353E-07 | 1.475E-07 |
| **ra225** | 2.208E-12 | 2.274E-12 | 2.278E-12 | 2.297E-12 | 2.318E-12 |
| **ra226** | 1.349E-09 | 8.456E-09 | 9.083E-09 | 1.185E-08 | 1.510E-08 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra228** | 4.291E-14 | 7.137E-14 | 7.275E-14 | 7.803E-14 | 8.317E-14 |
| **rb 83** | 5.247E-08 | 4.654E-14 | 2.203E-14 | 1.171E-15 | 6.219E-17 |
| **rb 84** | 6.066E-08 | 7.717E-24 | 1.082E-24 | 4.859E-28 | 2.181E-31 |
| **rb 85** | 6.807E+01 | 7.242E+01 | 7.262E+01 | 7.341E+01 | 7.407E+01 |
| **rb 86** | 1.193E-06 | 1.189E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.601E+02 | 1.601E+02 | 1.601E+02 | 1.601E+02 | 1.601E+02 |
| **re185** | 5.330E-14 | 5.343E-14 | 5.343E-14 | 5.343E-14 | 5.343E-14 |
| **re186m** | 1.816E-16 | 1.816E-16 | 1.816E-16 | 1.816E-16 | 1.816E-16 |
| **re187** | 3.451E-13 | 3.451E-13 | 3.451E-13 | 3.451E-13 | 3.451E-13 |
| **rh101** | 5.049E-07 | 1.863E-07 | 1.766E-07 | 1.432E-07 | 1.161E-07 |
| **rh102** | 7.170E-04 | 2.487E-06 | 1.890E-06 | 7.143E-07 | 3.408E-07 |
| **rh102m** | 1.770E-03 | 7.348E-04 | 7.011E-04 | 5.827E-04 | 4.842E-04 |
| **rh103** | 7.691E+02 | 7.697E+02 | 7.697E+02 | 7.697E+02 | 7.697E+02 |
| **rh103m** | 5.190E-04 | 2.647E-17 | 5.122E-18 | 8.126E-21 | 1.289E-23 |
| **rh106** | 1.831E-04 | 7.236E-06 | 6.085E-06 | 3.081E-06 | 1.560E-06 |
| **rn220** | 3.375E-12 | 2.014E-11 | 2.088E-11 | 2.338E-11 | 2.547E-11 |
| **rn222** | 8.601E-15 | 5.434E-14 | 5.838E-14 | 7.612E-14 | 9.703E-14 |
| **ru 96** | 1.714E-13 | 1.714E-13 | 1.714E-13 | 1.714E-13 | 1.714E-13 |
| **ru 98** | 1.751E-06 | 1.759E-06 | 1.760E-06 | 1.761E-06 | 1.763E-06 |
| **ru 99** | 3.797E-02 | 5.169E-02 | 5.243E-02 | 5.532E-02 | 5.821E-02 |
| **ru100** | 1.614E+02 | 1.614E+02 | 1.614E+02 | 1.614E+02 | 1.614E+02 |
| **ru101** | 9.670E+02 | 9.670E+02 | 9.670E+02 | 9.670E+02 | 9.670E+02 |
| **ru102** | 1.131E+03 | 1.131E+03 | 1.131E+03 | 1.131E+03 | 1.131E+03 |
| **ru103** | 5.285E-01 | 2.695E-14 | 5.215E-15 | 8.271E-18 | 1.312E-20 |
| **ru104** | 1.055E+03 | 1.055E+03 | 1.055E+03 | 1.055E+03 | 1.055E+03 |
| **ru106** | 1.956E+02 | 7.730E+00 | 6.500E+00 | 3.291E+00 | 1.667E+00 |
| **s 32** | 5.765E-14 | 5.765E-14 | 5.765E-14 | 5.765E-14 | 5.765E-14 |
| **s 33** | 5.921E-14 | 5.921E-14 | 5.921E-14 | 5.921E-14 | 5.921E-14 |
| **s 34** | 6.142E-14 | 6.142E-14 | 6.142E-14 | 6.142E-14 | 6.142E-14 |
| **s 36** | 6.493E-14 | 6.493E-14 | 6.493E-14 | 6.493E-14 | 6.493E-14 |
| **sb121** | 7.592E+00 | 7.638E+00 | 7.638E+00 | 7.651E+00 | 7.658E+00 |
| **sb123** | 1.001E+01 | 1.007E+01 | 1.007E+01 | 1.007E+01 | 1.007E+01 |
| **sb124** | 3.517E-03 | 7.592E-12 | 2.601E-12 | 3.890E-14 | 5.818E-16 |
| **sb125** | 1.262E+01 | 3.831E+00 | 3.593E+00 | 2.795E+00 | 2.175E+00 |
| **sb126** | 7.816E-07 | 7.777E-07 | 7.777E-07 | 7.777E-07 | 7.777E-07 |
| **sb126m** | 5.980E-09 | 5.980E-09 | 5.980E-09 | 5.980E-09 | 5.980E-09 |
| **sc 45** | 7.777E-14 | 7.777E-14 | 7.777E-14 | 7.777E-14 | 7.777E-14 |
| **sc 46** | 4.601E-17 | 2.733E-23 | 1.266E-23 | 6.183E-25 | 3.019E-26 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **se 74** | 3.477E-07 | 3.477E-07 | 3.477E-07 | 3.477E-07 | 3.477E-07 |
| **se 75** | 7.803E-09 | 3.447E-13 | 2.012E-13 | 2.435E-14 | 2.946E-15 |
| **se 76** | 8.087E-03 | 8.087E-03 | 8.087E-03 | 8.087E-03 | 8.087E-03 |
| **se 77** | 8.100E-01 | 8.100E-01 | 8.100E-01 | 8.100E-01 | 8.100E-01 |
| **se 78** | 2.360E+00 | 2.360E+00 | 2.360E+00 | 2.360E+00 | 2.360E+00 |
| **se 79** | 4.961E+00 | 4.961E+00 | 4.961E+00 | 4.961E+00 | 4.961E+00 |
| **se 80** | 1.152E+01 | 1.152E+01 | 1.152E+01 | 1.152E+01 | 1.152E+01 |
| **se 82** | 3.048E+01 | 3.048E+01 | 3.048E+01 | 3.048E+01 | 3.048E+01 |
| **si 28** | 5.052E-14 | 5.052E-14 | 5.052E-14 | 5.052E-14 | 5.052E-14 |
| **si 29** | 5.238E-14 | 5.238E-14 | 5.238E-14 | 5.238E-14 | 5.238E-14 |
| **si 30** | 5.446E-14 | 5.446E-14 | 5.446E-14 | 5.446E-14 | 5.446E-14 |
| **sm144** | 5.355E-11 | 5.355E-11 | 5.355E-11 | 5.355E-11 | 5.355E-11 |
| **sm145** | 2.690E-07 | 7.862E-09 | 6.502E-09 | 3.090E-09 | 1.468E-09 |
| **sm146** | 2.925E-03 | 2.971E-03 | 2.973E-03 | 2.979E-03 | 2.985E-03 |
| **sm147** | 9.966E+01 | 2.053E+02 | 2.080E+02 | 2.171E+02 | 2.242E+02 |
| **sm148** | 1.811E+02 | 1.812E+02 | 1.812E+02 | 1.812E+02 | 1.812E+02 |
| **sm149** | 4.663E+00 | 4.663E+00 | 4.663E+00 | 4.663E+00 | 4.663E+00 |
| **sm150** | 3.766E+02 | 3.766E+02 | 3.766E+02 | 3.766E+02 | 3.766E+02 |
| **sm151** | 1.963E+01 | 1.892E+01 | 1.888E+01 | 1.875E+01 | 1.860E+01 |
| **sm152** | 1.282E+02 | 1.282E+02 | 1.282E+02 | 1.282E+02 | 1.282E+02 |
| **sm154** | 7.308E+01 | 7.308E+01 | 7.308E+01 | 7.308E+01 | 7.308E+01 |
| **sn112** | 2.504E-09 | 2.504E-09 | 2.504E-09 | 2.504E-09 | 2.504E-09 |
| **sn113** | 5.579E-11 | 1.636E-15 | 9.340E-16 | 1.037E-16 | 1.151E-17 |
| **sn114** | 1.290E-04 | 1.292E-04 | 1.292E-04 | 1.292E-04 | 1.292E-04 |
| **sn115** | 4.525E-01 | 4.525E-01 | 4.525E-01 | 4.525E-01 | 4.525E-01 |
| **sn116** | 3.941E+00 | 3.941E+00 | 3.941E+00 | 3.941E+00 | 3.941E+00 |
| **sn117** | 9.122E+00 | 9.122E+00 | 9.122E+00 | 9.122E+00 | 9.122E+00 |
| **sn117m** | 2.326E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn118** | 8.205E+00 | 8.205E+00 | 8.205E+00 | 8.205E+00 | 8.205E+00 |
| **sn119** | 7.770E+00 | 7.829E+00 | 7.829E+00 | 7.829E+00 | 7.829E+00 |
| **sn119m** | 5.866E-02 | 9.722E-04 | 7.803E-04 | 3.291E-04 | 1.388E-04 |
| **sn120** | 7.889E+00 | 7.889E+00 | 7.889E+00 | 7.889E+00 | 7.889E+00 |
| **sn121** | 3.668E-05 | 3.403E-05 | 3.390E-05 | 3.336E-05 | 3.284E-05 |
| **sn121m** | 6.728E-01 | 6.243E-01 | 6.218E-01 | 6.120E-01 | 6.025E-01 |
| **sn122** | 1.036E+01 | 1.036E+01 | 1.036E+01 | 1.036E+01 | 1.036E+01 |
| **sn123** | 6.274E-02 | 5.750E-06 | 3.491E-06 | 4.927E-07 | 6.952E-08 |
| **sn124** | 1.638E+01 | 1.638E+01 | 1.638E+01 | 1.638E+01 | 1.638E+01 |
| **sn125** | 6.163E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sn126** | 3.777E+01 | 3.777E+01 | 3.777E+01 | 3.777E+01 | 3.777E+01 |
| **sr 84** | 7.922E-06 | 7.922E-06 | 7.922E-06 | 7.922E-06 | 7.922E-06 |
| **sr 85** | 1.336E-08 | 1.202E-16 | 4.447E-17 | 8.984E-19 | 1.815E-20 |
| **sr 86** | 4.905E-01 | 4.905E-01 | 4.905E-01 | 4.905E-01 | 4.905E-01 |
| **sr 87** | 4.930E-03 | 4.930E-03 | 4.930E-03 | 4.930E-03 | 4.930E-03 |
| **sr 88** | 2.127E+02 | 2.127E+02 | 2.127E+02 | 2.127E+02 | 2.127E+02 |
| **sr 89** | 4.384E-01 | 2.077E-11 | 5.800E-12 | 3.881E-14 | 2.597E-16 |
| **sr 90** | 3.264E+02 | 2.912E+02 | 2.894E+02 | 2.826E+02 | 2.758E+02 |
| **ta180m** | 2.065E-17 | 2.065E-17 | 2.065E-17 | 2.065E-17 | 2.065E-17 |
| **ta181** | 1.680E-13 | 1.680E-13 | 1.680E-13 | 1.680E-13 | 1.680E-13 |
| **ta182** | 5.749E-16 | 1.638E-20 | 9.360E-21 | 1.079E-21 | 1.658E-22 |
| **tb157** | 6.146E-07 | 5.868E-07 | 5.853E-07 | 5.796E-07 | 5.740E-07 |
| **tb158** | 8.990E-05 | 8.825E-05 | 8.819E-05 | 8.779E-05 | 8.746E-05 |
| **tb159** | 6.372E+00 | 6.372E+00 | 6.372E+00 | 6.372E+00 | 6.372E+00 |
| **tb160** | 1.622E-02 | 9.874E-10 | 4.048E-10 | 1.224E-11 | 3.696E-13 |
| **tb161** | 6.327E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 4.804E-18 | 1.347E-26 | 4.681E-27 | 7.394E-29 | 0.000E+00 |
| **tc 95m** | 8.937E-15 | 2.506E-23 | 8.713E-24 | 1.377E-25 | 2.175E-27 |
| **tc 97** | 9.775E-06 | 9.848E-06 | 9.848E-06 | 9.848E-06 | 9.848E-06 |
| **tc 97m** | 8.100E-08 | 1.498E-13 | 7.374E-14 | 4.575E-15 | 2.838E-16 |
| **tc 98** | 1.012E-02 | 1.012E-02 | 1.012E-02 | 1.012E-02 | 1.012E-02 |
| **tc 99** | 8.812E+02 | 8.812E+02 | 8.812E+02 | 8.812E+02 | 8.812E+02 |
| **te120** | 2.553E-09 | 2.553E-09 | 2.553E-09 | 2.553E-09 | 2.553E-09 |
| **te121** | 3.339E-08 | 2.220E-11 | 1.499E-11 | 3.212E-12 | 6.880E-13 |
| **te121m** | 2.850E-07 | 1.896E-10 | 1.280E-10 | 2.742E-11 | 5.874E-12 |
| **te122** | 7.631E-01 | 7.631E-01 | 7.631E-01 | 7.631E-01 | 7.631E-01 |
| **te123** | 9.815E-03 | 1.027E-02 | 1.027E-02 | 1.027E-02 | 1.027E-02 |
| **te123m** | 4.505E-04 | 1.893E-08 | 1.102E-08 | 1.320E-09 | 1.580E-10 |
| **te124** | 5.471E-01 | 5.506E-01 | 5.506E-01 | 5.506E-01 | 5.506E-01 |
| **te125** | 9.083E+00 | 1.799E+01 | 1.824E+01 | 1.904E+01 | 1.968E+01 |
| **te125m** | 1.753E-01 | 5.344E-02 | 5.013E-02 | 3.900E-02 | 3.033E-02 |
| **te126** | 9.426E-01 | 9.432E-01 | 9.432E-01 | 9.432E-01 | 9.432E-01 |
| **te127** | 7.368E-04 | 1.206E-08 | 6.675E-09 | 6.551E-10 | 6.431E-11 |
| **te127m** | 2.105E-01 | 3.444E-06 | 1.906E-06 | 1.871E-07 | 1.837E-08 |
| **te128** | 1.468E+02 | 1.468E+02 | 1.468E+02 | 1.468E+02 | 1.468E+02 |
| **te129** | 5.944E-06 | 1.768E-21 | 2.596E-22 | 1.394E-25 | 7.486E-29 |
| **te129m** | 6.549E-03 | 1.948E-18 | 2.861E-19 | 1.536E-22 | 8.245E-26 |
| **te130** | 4.955E+02 | 4.955E+02 | 4.955E+02 | 4.955E+02 | 4.955E+02 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2/15** | **1/22/2016** |
| **th227** | 1.489E-12 | 6.603E-12 | 6.781E-12 | 7.935E-12 | 8.997E-12 |
| **th228** | 3.846E-06 | 2.256E-05 | 2.337E-05 | 2.620E-05 | 2.855E-05 |
| **th229** | 4.043E-07 | 4.165E-07 | 4.173E-07 | 4.208E-07 | 4.244E-07 |
| **th230** | 8.113E-05 | 2.673E-04 | 2.801E-04 | 3.331E-04 | 3.903E-04 |
| **th231** | 2.951E-09 | 2.956E-09 | 2.957E-09 | 2.958E-09 | 2.959E-09 |
| **th232** | 2.446E-04 | 2.895E-04 | 2.919E-04 | 3.014E-04 | 3.110E-04 |
| **th234** | 1.359E-05 | 1.360E-05 | 1.359E-05 | 1.359E-05 | 1.359E-05 |
| **ti 46** | 8.647E-14 | 8.647E-14 | 8.647E-14 | 8.647E-14 | 8.647E-14 |
| **ti 47** | 8.469E-14 | 8.469E-14 | 8.469E-14 | 8.469E-14 | 8.469E-14 |
| **ti 48** | 8.581E-14 | 8.581E-14 | 8.581E-14 | 8.581E-14 | 8.581E-14 |
| **ti 49** | 8.944E-14 | 8.944E-14 | 8.944E-14 | 8.944E-14 | 8.944E-14 |
| **ti 50** | 9.050E-14 | 9.050E-14 | 9.050E-14 | 9.050E-14 | 9.050E-14 |
| **tl203** | 3.657E-15 | 3.662E-15 | 3.662E-15 | 3.662E-15 | 3.662E-15 |
| **tl204** | 8.364E-17 | 3.506E-17 | 3.346E-17 | 2.786E-17 | 2.320E-17 |
| **tl205** | 1.592E-15 | 1.592E-15 | 1.592E-15 | 1.592E-15 | 1.592E-15 |
| **tl207** | 2.378E-16 | 1.080E-15 | 1.102E-15 | 1.297E-15 | 1.471E-15 |
| **tl208** | 3.779E-12 | 2.254E-11 | 2.337E-11 | 2.617E-11 | 2.851E-11 |
| **tm168** | 8.627E-10 | 2.150E-15 | 1.076E-15 | 7.104E-17 | 4.690E-18 |
| **tm169** | 9.195E-04 | 9.195E-04 | 9.195E-04 | 9.195E-04 | 9.195E-04 |
| **tm170** | 5.103E-05 | 4.479E-09 | 2.713E-09 | 3.793E-10 | 5.304E-11 |
| **tm171** | 1.745E-04 | 3.146E-05 | 2.870E-05 | 2.001E-05 | 1.394E-05 |
| **u230** | 2.560E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 4.959E-04 | 1.153E-03 | 1.169E-03 | 1.222E-03 | 1.261E-03 |
| **u233** | 4.479E-04 | 7.618E-04 | 7.777E-04 | 8.476E-04 | 9.182E-04 |
| **u234** | 1.040E+01 | 1.791E+01 | 1.830E+01 | 1.987E+01 | 2.142E+01 |
| **u235** | 7.256E+02 | 7.269E+02 | 7.269E+02 | 7.275E+02 | 7.275E+02 |
| **u236** | 3.243E+02 | 3.271E+02 | 3.272E+02 | 3.278E+02 | 3.284E+02 |
| **u237** | 1.097E-04 | 8.713E-05 | 8.608E-05 | 8.199E-05 | 7.810E-05 |
| **u238** | 9.360E+05 | 9.360E+05 | 9.360E+05 | 9.360E+05 | 9.360E+05 |
| **u240** | 2.914E-12 | 2.914E-12 | 2.914E-12 | 2.914E-12 | 2.914E-12 |
| **v 50** | 6.103E-17 | 6.103E-17 | 6.103E-17 | 6.103E-17 | 6.103E-17 |
| **v 51** | 2.440E-15 | 2.440E-15 | 2.440E-15 | 2.440E-15 | 2.440E-15 |
| **w182** | 2.384E-13 | 2.390E-13 | 2.390E-13 | 2.390E-13 | 2.390E-13 |
| **w183** | 6.550E-13 | 6.550E-13 | 6.550E-13 | 6.550E-13 | 6.550E-13 |
| **w184** | 6.019E-13 | 6.019E-13 | 6.019E-13 | 6.019E-13 | 6.019E-13 |
| **w185** | 1.278E-16 | 1.446E-23 | 6.129E-24 | 2.110E-25 | 7.262E-27 |
| **w186** | 1.963E-13 | 1.963E-13 | 1.963E-13 | 1.963E-13 | 1.963E-13 |
| **xe124** | 1.778E-13 | 1.778E-13 | 1.778E-13 | 1.778E-13 | 1.778E-13 |

| Table C-2. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **xe126** | 2.917E-04 | 2.917E-04 | 2.917E-04 | 2.917E-04 | 2.917E-04 |
| **xe127** | 4.680E-08 | 2.178E-22 | 3.707E-23 | 3.551E-26 | 3.402E-29 |
| **xe128** | 7.572E+00 | 7.572E+00 | 7.572E+00 | 7.572E+00 | 7.572E+00 |
| **xe129** | 5.827E-02 | 5.833E-02 | 5.833E-02 | 5.834E-02 | 5.835E-02 |
| **xe129m** | 2.597E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe130** | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 |
| **xe131** | 5.246E+02 | 5.246E+02 | 5.246E+02 | 5.246E+02 | 5.246E+02 |
| **xe131m** | 7.935E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe132** | 1.456E+03 | 1.456E+03 | 1.456E+03 | 1.456E+03 | 1.456E+03 |
| **xe133** | 8.139E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe134** | 1.749E+03 | 1.749E+03 | 1.749E+03 | 1.749E+03 | 1.749E+03 |
| **xe136** | 2.756E+03 | 2.756E+03 | 2.756E+03 | 2.756E+03 | 2.756E+03 |
| **y 88** | 2.481E-05 | 3.178E-10 | 1.736E-10 | 1.619E-11 | 1.509E-12 |
| **y 89** | 2.802E+02 | 2.807E+02 | 2.807E+02 | 2.807E+02 | 2.807E+02 |
| **y 89m** | 1.516E-10 | 7.183E-21 | 2.006E-21 | 1.342E-23 | 8.984E-26 |
| **y 90** | 8.278E-02 | 7.387E-02 | 7.341E-02 | 7.170E-02 | 6.998E-02 |
| **y 91** | 1.227E+00 | 1.487E-09 | 4.943E-10 | 6.547E-12 | 8.674E-14 |
| **yb168** | 1.822E-12 | 1.908E-12 | 1.908E-12 | 1.908E-12 | 1.908E-12 |
| **yb169** | 3.324E-12 | 1.691E-28 | 2.257E-29 | 8.350E-33 | 0.000E+00 |
| **yb170** | 7.031E-04 | 7.539E-04 | 7.539E-04 | 7.539E-04 | 7.539E-04 |
| **yb171** | 2.286E-04 | 3.716E-04 | 3.744E-04 | 3.831E-04 | 3.891E-04 |
| **yb172** | 4.828E-04 | 4.828E-04 | 4.828E-04 | 4.828E-04 | 4.828E-04 |
| **yb176** | 1.336E-16 | 1.336E-16 | 1.336E-16 | 1.336E-16 | 1.336E-16 |
| **zn 64** | 5.306E-16 | 5.306E-16 | 5.306E-16 | 5.306E-16 | 5.306E-16 |
| **zn 66** | 1.549E-04 | 1.549E-04 | 1.549E-04 | 1.549E-04 | 1.549E-04 |
| **zn 67** | 4.368E-04 | 4.368E-04 | 4.368E-04 | 4.368E-04 | 4.368E-04 |
| **zn 68** | 8.482E-04 | 8.482E-04 | 8.482E-04 | 8.482E-04 | 8.482E-04 |
| **zn 70** | 3.686E-03 | 3.686E-03 | 3.686E-03 | 3.686E-03 | 3.686E-03 |
| **zr 88** | 5.158E-12 | 2.866E-18 | 1.323E-18 | 6.369E-20 | 3.066E-21 |
| **zr 90** | 1.878E+01 | 5.403E+01 | 5.581E+01 | 6.269E+01 | 6.939E+01 |
| **zr 91** | 4.072E+02 | 4.084E+02 | 4.084E+02 | 4.084E+02 | 4.084E+02 |
| **zr 92** | 4.919E+02 | 4.919E+02 | 4.919E+02 | 4.919E+02 | 4.919E+02 |
| **zr 93** | 6.035E+02 | 6.035E+02 | 6.035E+02 | 6.035E+02 | 6.035E+02 |
| **zr 94** | 6.899E+02 | 6.899E+02 | 6.899E+02 | 6.899E+02 | 6.899E+02 |
| **zr 95** | 3.320E+00 | 2.365E-08 | 8.641E-09 | 1.662E-10 | 3.196E-12 |
| **zr 96** | 8.073E+02 | 8.073E+02 | 8.073E+02 | 8.073E+02 | 8.073E+02 |
| **Total** | **1.1339E+06** | **1.1339E+06** | **1.1339E+06** | **1.1339E+06** | **1.1339E+06** |

| Table C-3. MOX Fuel Rod Cl (medium Pu): Nuclide mass in grams per MTIHM | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ac225** | 1.319E-12 | 1.363E-12 | 1.365E-12 | 1.379E-12 | 1.393E-12 |
| **ac227** | 7.086E-10 | 2.991E-09 | 3.115E-09 | 3.601E-09 | 4.089E-09 |
| **ag105** | 8.136E-15 | 1.887E-27 | 3.960E-28 | 8.641E-31 | 1.886E-33 |
| **ag107** | 1.368E-04 | 4.360E-04 | 4.521E-04 | 5.151E-04 | 5.782E-04 |
| **ag108** | 6.262E-13 | 6.214E-13 | 6.212E-13 | 6.202E-13 | 6.192E-13 |
| **ag108m** | 6.959E-04 | 6.906E-04 | 6.906E-04 | 6.893E-04 | 6.886E-04 |
| **ag109** | 1.993E+02 | 1.993E+02 | 1.993E+02 | 1.993E+02 | 1.993E+02 |
| **ag109m** | 2.046E-10 | 1.514E-11 | 1.317E-11 | 7.611E-12 | 4.398E-12 |
| **ag110** | 2.104E-08 | 1.715E-10 | 1.325E-10 | 4.812E-11 | 1.748E-11 |
| **ag110m** | 1.357E+00 | 1.106E-02 | 8.548E-03 | 3.104E-03 | 1.127E-03 |
| **ag111** | 1.442E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **al 27** | 4.908E-14 | 4.908E-14 | 4.908E-14 | 4.908E-14 | 4.908E-14 |
| **am241** | 3.407E+02 | 1.189E+03 | 1.229E+03 | 1.381E+03 | 1.526E+03 |
| **am242** | 4.416E-05 | 4.315E-05 | 4.309E-05 | 4.288E-05 | 4.267E-05 |
| **am242m** | 3.423E+00 | 3.344E+00 | 3.339E+00 | 3.324E+00 | 3.307E+00 |
| **am243** | 4.006E+02 | 4.004E+02 | 4.004E+02 | 4.004E+02 | 4.003E+02 |
| **am244** | 5.450E-15 | 3.781E-15 | 3.707E-15 | 3.433E-15 | 3.178E-15 |
| **am245** | 5.730E-14 | 1.342E-15 | 1.097E-15 | 4.977E-16 | 2.257E-16 |
| **ar 36** | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 | 6.478E-14 |
| **ar 38** | 6.906E-14 | 6.906E-14 | 6.906E-14 | 6.906E-14 | 6.906E-14 |
| **ar 39** | 1.251E-16 | 1.236E-16 | 1.235E-16 | 1.232E-16 | 1.228E-16 |
| **ar 40** | 7.312E-14 | 7.312E-14 | 7.312E-14 | 7.312E-14 | 7.312E-14 |
| **as 73** | 1.270E-10 | 4.048E-17 | 1.814E-17 | 7.764E-19 | 3.326E-20 |
| **as 74** | 1.637E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **as 75** | 1.658E-01 | 1.658E-01 | 1.658E-01 | 1.658E-01 | 1.658E-01 |
| **au197** | 2.057E-13 | 2.057E-13 | 2.057E-13 | 2.057E-13 | 2.057E-13 |
| **b 10** | 6.460E-11 | 3.500E-10 | 3.653E-10 | 4.254E-10 | 4.856E-10 |
| **b 11** | 7.471E-08 | 7.471E-08 | 7.471E-08 | 7.471E-08 | 7.471E-08 |
| **ba130** | 1.872E-13 | 1.872E-13 | 1.872E-13 | 1.872E-13 | 1.872E-13 |
| **ba131** | 4.133E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba132** | 2.987E-04 | 2.987E-04 | 2.987E-04 | 2.987E-04 | 2.987E-04 |
| **ba133** | 2.097E-04 | 1.534E-04 | 1.508E-04 | 1.412E-04 | 1.322E-04 |
| **ba134** | 1.150E+02 | 2.348E+02 | 2.373E+02 | 2.453E+02 | 2.511E+02 |
| **ba135** | 5.465E-01 | 5.475E-01 | 5.476E-01 | 5.478E-01 | 5.480E-01 |
| **ba136** | 4.371E+01 | 4.371E+01 | 4.371E+01 | 4.371E+01 | 4.371E+01 |
| **ba136m** | 2.898E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137** | 8.196E+01 | 2.404E+02 | 2.485E+02 | 2.795E+02 | 3.099E+02 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ba137m** | 2.338E-04 | 2.096E-04 | 2.083E-04 | 2.036E-04 | 1.989E-04 |
| **ba138** | 1.531E+03 | 1.531E+03 | 1.531E+03 | 1.531E+03 | 1.531E+03 |
| **ba140** | 1.297E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 9** | 2.467E-06 | 2.467E-06 | 2.467E-06 | 2.467E-06 | 2.467E-06 |
| **be 10** | 1.310E-04 | 1.310E-04 | 1.310E-04 | 1.310E-04 | 1.310E-04 |
| **bi208** | 1.304E-15 | 1.304E-15 | 1.304E-15 | 1.304E-15 | 1.304E-15 |
| **bi209** | 1.191E-10 | 2.685E-10 | 2.766E-10 | 3.089E-10 | 3.415E-10 |
| **bi210** | 3.256E-14 | 3.300E-14 | 3.331E-14 | 3.493E-14 | 3.725E-14 |
| **bi210m** | 1.820E-15 | 1.820E-15 | 1.820E-15 | 1.820E-15 | 1.820E-15 |
| **bi211** | 1.143E-16 | 5.207E-16 | 5.318E-16 | 6.267E-16 | 7.119E-16 |
| **bi212** | 1.958E-10 | 1.198E-09 | 1.243E-09 | 1.393E-09 | 1.520E-09 |
| **bi213** | 3.952E-15 | 4.087E-15 | 4.092E-15 | 4.134E-15 | 4.175E-15 |
| **bk247** | 1.064E-12 | 1.062E-12 | 1.062E-12 | 1.061E-12 | 1.061E-12 |
| **bk248** | 4.323E-11 | 2.999E-11 | 2.941E-11 | 2.723E-11 | 2.521E-11 |
| **bk249** | 1.504E-05 | 3.524E-07 | 2.881E-07 | 1.307E-07 | 5.926E-08 |
| **bk250** | 7.458E-15 | 9.638E-17 | 7.644E-17 | 3.100E-17 | 1.285E-17 |
| **br 79** | 2.923E-03 | 2.983E-03 | 2.987E-03 | 2.999E-03 | 3.012E-03 |
| **br 81** | 2.256E+01 | 2.256E+01 | 2.256E+01 | 2.256E+01 | 2.256E+01 |
| **c 12** | 7.930E-02 | 7.930E-02 | 7.930E-02 | 7.930E-02 | 7.930E-02 |
| **c 13** | 1.250E+01 | 1.250E+01 | 1.250E+01 | 1.250E+01 | 1.250E+01 |
| **c 14** | 3.937E-04 | 3.934E-04 | 3.934E-04 | 3.934E-04 | 3.934E-04 |
| **ca 40** | 7.252E-14 | 7.252E-14 | 7.252E-14 | 7.252E-14 | 7.252E-14 |
| **ca 41** | 4.767E-17 | 4.767E-17 | 4.767E-17 | 4.767E-17 | 4.767E-17 |
| **ca 42** | 7.657E-14 | 7.657E-14 | 7.657E-14 | 7.657E-14 | 7.657E-14 |
| **ca 43** | 7.691E-14 | 7.691E-14 | 7.691E-14 | 7.691E-14 | 7.691E-14 |
| **ca 44** | 8.129E-14 | 8.129E-14 | 8.129E-14 | 8.129E-14 | 8.129E-14 |
| **ca 46** | 8.355E-14 | 8.355E-14 | 8.355E-14 | 8.355E-14 | 8.355E-14 |
| **ca 48** | 8.714E-14 | 8.714E-14 | 8.714E-14 | 8.714E-14 | 8.714E-14 |
| **cd106** | 2.993E-13 | 2.993E-13 | 2.993E-13 | 2.993E-13 | 2.993E-13 |
| **cd108** | 1.465E-03 | 1.466E-03 | 1.466E-03 | 1.466E-03 | 1.466E-03 |
| **cd109** | 2.060E-04 | 1.524E-05 | 1.325E-05 | 7.657E-06 | 4.427E-06 |
| **cd110** | 1.436E+02 | 1.450E+02 | 1.450E+02 | 1.450E+02 | 1.450E+02 |
| **cd111** | 6.503E+01 | 6.503E+01 | 6.503E+01 | 6.503E+01 | 6.503E+01 |
| **cd112** | 3.075E+01 | 3.075E+01 | 3.075E+01 | 3.075E+01 | 3.075E+01 |
| **cd113** | 3.128E-01 | 3.128E-01 | 3.128E-01 | 3.128E-01 | 3.128E-01 |
| **cd113m** | 4.495E-03 | 3.560E-03 | 3.516E-03 | 3.347E-03 | 3.187E-03 |
| **cd114** | 3.281E+01 | 3.281E+01 | 3.281E+01 | 3.281E+01 | 3.281E+01 |
| **cd115m** | 6.174E-04 | 1.210E-15 | 2.849E-16 | 9.745E-19 | 3.335E-21 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cd116** | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 | 1.086E+01 |
| **ce136** | 2.269E-13 | 2.269E-13 | 2.269E-13 | 2.269E-13 | 2.269E-13 |
| **ce138** | 1.052E-05 | 1.052E-05 | 1.052E-05 | 1.052E-05 | 1.052E-05 |
| **ce139** | 1.426E-03 | 2.311E-07 | 1.447E-07 | 2.303E-08 | 3.663E-09 |
| **ce140** | 1.457E+03 | 1.457E+03 | 1.457E+03 | 1.457E+03 | 1.457E+03 |
| **ce141** | 1.911E-01 | 1.711E-17 | 2.355E-18 | 9.818E-22 | 4.093E-25 |
| **ce142** | 1.262E+03 | 1.262E+03 | 1.262E+03 | 1.262E+03 | 1.262E+03 |
| **ce144** | 1.823E+02 | 2.690E+00 | 2.146E+00 | 8.827E-01 | 3.633E-01 |
| **cf248** | 2.856E-11 | 7.784E-13 | 6.418E-13 | 3.006E-13 | 1.408E-13 |
| **cf249** | 1.623E-05 | 3.066E-05 | 3.072E-05 | 3.081E-05 | 3.082E-05 |
| **cf250** | 8.455E-06 | 6.575E-06 | 6.487E-06 | 6.152E-06 | 5.835E-06 |
| **cf251** | 4.302E-06 | 4.286E-06 | 4.285E-06 | 4.282E-06 | 4.279E-06 |
| **cf252** | 1.539E-06 | 4.438E-07 | 4.152E-07 | 3.195E-07 | 2.459E-07 |
| **cf253** | 9.299E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 5.200E-12 | 1.239E-20 | 4.269E-21 | 6.518E-23 | 9.951E-25 |
| **cl 35** | 5.998E-14 | 5.998E-14 | 5.998E-14 | 5.998E-14 | 5.998E-14 |
| **cl 36** | 3.901E-15 | 3.901E-15 | 3.901E-15 | 3.901E-15 | 3.901E-15 |
| **cl 37** | 6.793E-14 | 6.793E-14 | 6.793E-14 | 6.793E-14 | 6.793E-14 |
| **cm240** | 1.669E-11 | 7.957E-31 | 7.305E-32 | 0.000E+00 | 0.000E+00 |
| **cm241** | 2.345E-08 | 2.917E-24 | 4.088E-25 | 1.827E-28 | 8.163E-32 |
| **cm242** | 1.922E+01 | 2.080E-02 | 1.684E-02 | 1.039E-02 | 8.993E-03 |
| **cm243** | 1.728E+00 | 1.543E+00 | 1.533E+00 | 1.498E+00 | 1.462E+00 |
| **cm244** | 1.718E+02 | 1.432E+02 | 1.419E+02 | 1.365E+02 | 1.314E+02 |
| **cm245** | 1.722E+01 | 1.721E+01 | 1.721E+01 | 1.721E+01 | 1.720E+01 |
| **cm246** | 1.364E+00 | 1.363E+00 | 1.363E+00 | 1.363E+00 | 1.363E+00 |
| **cm247** | 2.249E-02 | 2.249E-02 | 2.249E-02 | 2.249E-02 | 2.249E-02 |
| **cm248** | 1.628E-03 | 1.629E-03 | 1.629E-03 | 1.629E-03 | 1.629E-03 |
| **cm250** | 2.200E-10 | 2.200E-10 | 2.200E-10 | 2.200E-10 | 2.200E-10 |
| **co 59** | 1.079E-13 | 1.079E-13 | 1.079E-13 | 1.079E-13 | 1.079E-13 |
| **co 60** | 1.121E-14 | 6.009E-15 | 5.812E-15 | 5.096E-15 | 4.468E-15 |
| **cr 50** | 8.880E-14 | 8.880E-14 | 8.880E-14 | 8.880E-14 | 8.880E-14 |
| **cr 52** | 9.445E-14 | 9.445E-14 | 9.445E-14 | 9.445E-14 | 9.445E-14 |
| **cr 53** | 9.399E-14 | 9.399E-14 | 9.399E-14 | 9.399E-14 | 9.399E-14 |
| **cr 54** | 1.007E-13 | 1.007E-13 | 1.007E-13 | 1.007E-13 | 1.007E-13 |
| **cs131** | 1.699E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 1.477E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs133** | 1.384E+03 | 1.384E+03 | 1.384E+03 | 1.384E+03 | 1.384E+03 |
| **cs134** | 1.504E+02 | 3.059E+01 | 2.808E+01 | 2.008E+01 | 1.436E+01 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cs135** | 6.807E+02 | 6.807E+02 | 6.807E+02 | 6.807E+02 | 6.807E+02 |
| **cs136** | 9.651E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.530E+03 | 1.372E+03 | 1.364E+03 | 1.333E+03 | 1.302E+03 |
| **cu 63** | 1.133E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 |
| **cu 65** | 4.610E-07 | 4.610E-07 | 4.610E-07 | 4.610E-07 | 4.610E-07 |
| **dy156** | 3.193E-12 | 3.193E-12 | 3.193E-12 | 3.193E-12 | 3.193E-12 |
| **dy158** | 1.287E-07 | 4.251E-07 | 4.408E-07 | 5.024E-07 | 5.639E-07 |
| **dy159** | 2.515E-07 | 6.132E-11 | 3.924E-11 | 6.807E-12 | 1.180E-12 |
| **dy160** | 9.080E-01 | 9.253E-01 | 9.253E-01 | 9.253E-01 | 9.253E-01 |
| **dy161** | 1.145E+00 | 1.145E+00 | 1.145E+00 | 1.145E+00 | 1.145E+00 |
| **dy162** | 7.126E-01 | 7.126E-01 | 7.126E-01 | 7.126E-01 | 7.126E-01 |
| **dy163** | 6.081E-01 | 6.081E-01 | 6.081E-01 | 6.081E-01 | 6.081E-01 |
| **dy164** | 2.356E-01 | 2.356E-01 | 2.356E-01 | 2.356E-01 | 2.356E-01 |
| **er162** | 3.476E-12 | 3.476E-12 | 3.476E-12 | 3.476E-12 | 3.476E-12 |
| **er164** | 3.092E-06 | 3.092E-06 | 3.092E-06 | 3.092E-06 | 3.092E-06 |
| **er166** | 8.515E-02 | 8.515E-02 | 8.515E-02 | 8.515E-02 | 8.515E-02 |
| **er167** | 3.982E-03 | 3.982E-03 | 3.982E-03 | 3.982E-03 | 3.982E-03 |
| **er168** | 1.288E-02 | 1.288E-02 | 1.288E-02 | 1.288E-02 | 1.288E-02 |
| **er169** | 1.083E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **er170** | 6.476E-04 | 6.477E-04 | 6.477E-04 | 6.477E-04 | 6.477E-04 |
| **es252** | 4.044E-15 | 3.168E-16 | 2.763E-16 | 1.616E-16 | 9.452E-17 |
| **es253** | 2.239E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 1.560E-11 | 1.999E-13 | 1.583E-13 | 6.322E-14 | 2.525E-14 |
| **es255** | 2.672E-14 | 2.085E-27 | 4.127E-28 | 7.159E-31 | 1.242E-33 |
| **eu147** | 2.747E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 5.484E-11 | 1.367E-16 | 6.840E-17 | 4.515E-18 | 2.982E-19 |
| **eu151** | 1.589E-01 | 9.651E-01 | 1.008E+00 | 1.173E+00 | 1.338E+00 |
| **eu152** | 2.894E-02 | 2.270E-02 | 2.241E-02 | 2.129E-02 | 2.023E-02 |
| **eu153** | 1.937E+02 | 1.937E+02 | 1.937E+02 | 1.937E+02 | 1.937E+02 |
| **eu154** | 5.540E+01 | 3.780E+01 | 3.703E+01 | 3.417E+01 | 3.152E+01 |
| **eu155** | 1.375E+01 | 6.886E+00 | 6.632E+00 | 5.733E+00 | 4.955E+00 |
| **eu156** | 3.926E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **f 19** | 1.200E-13 | 1.200E-13 | 1.200E-13 | 1.200E-13 | 1.200E-13 |
| **fe 54** | 9.771E-14 | 9.771E-14 | 9.771E-14 | 9.771E-14 | 9.771E-14 |
| **fe 55** | 2.164E-16 | 6.525E-17 | 6.119E-17 | 4.754E-17 | 3.693E-17 |
| **fe 56** | 1.075E-13 | 1.075E-13 | 1.075E-13 | 1.075E-13 | 1.075E-13 |
| **fe 57** | 1.036E-13 | 1.036E-13 | 1.036E-13 | 1.036E-13 | 1.036E-13 |
| **fe 58** | 3.025E-13 | 3.025E-13 | 3.025E-13 | 3.025E-13 | 3.025E-13 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **fr221** | 4.408E-16 | 4.557E-16 | 4.564E-16 | 4.610E-16 | 4.656E-16 |
| **ga 69** | 1.612E-03 | 1.612E-03 | 1.612E-03 | 1.612E-03 | 1.612E-03 |
| **ga 71** | 7.033E-03 | 7.033E-03 | 7.033E-03 | 7.033E-03 | 7.033E-03 |
| **gd151** | 6.389E-08 | 3.965E-12 | 2.358E-12 | 3.065E-13 | 3.984E-14 |
| **gd152** | 6.192E-02 | 6.366E-02 | 6.374E-02 | 6.405E-02 | 6.435E-02 |
| **gd153** | 2.466E-03 | 1.666E-05 | 1.275E-05 | 4.450E-06 | 1.553E-06 |
| **gd154** | 8.581E+00 | 2.618E+01 | 2.695E+01 | 2.982E+01 | 3.246E+01 |
| **gd155** | 1.731E+00 | 8.595E+00 | 8.847E+00 | 9.751E+00 | 1.053E+01 |
| **gd156** | 1.638E+02 | 1.638E+02 | 1.638E+02 | 1.638E+02 | 1.638E+02 |
| **gd157** | 3.288E-01 | 3.288E-01 | 3.288E-01 | 3.288E-01 | 3.288E-01 |
| **gd158** | 4.551E+01 | 4.551E+01 | 4.551E+01 | 4.551E+01 | 4.551E+01 |
| **gd160** | 3.038E+00 | 3.038E+00 | 3.038E+00 | 3.038E+00 | 3.038E+00 |
| **ge 70** | 2.041E-05 | 2.041E-05 | 2.041E-05 | 2.041E-05 | 2.041E-05 |
| **ge 71** | 4.671E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 72** | 1.721E-02 | 1.721E-02 | 1.721E-02 | 1.721E-02 | 1.721E-02 |
| **ge 73** | 3.536E-02 | 3.536E-02 | 3.536E-02 | 3.536E-02 | 3.536E-02 |
| **ge 73m** | 9.140E-18 | 2.911E-24 | 1.305E-24 | 5.586E-26 | 2.392E-27 |
| **ge 74** | 8.375E-02 | 8.375E-02 | 8.375E-02 | 8.375E-02 | 8.375E-02 |
| **ge 76** | 3.750E-01 | 3.750E-01 | 3.750E-01 | 3.750E-01 | 3.750E-01 |
| **h 1** | 6.640E-03 | 6.640E-03 | 6.640E-03 | 6.640E-03 | 6.640E-03 |
| **h 2** | 1.420E-03 | 1.420E-03 | 1.420E-03 | 1.420E-03 | 1.420E-03 |
| **h3** | 7.185E-02 | 5.501E-02 | 5.422E-02 | 5.126E-02 | 4.846E-02 |
| **he3** | 4.310E-03 | 2.114E-02 | 2.192E-02 | 2.489E-02 | 2.769E-02 |
| **he4** | 7.879E+00 | 8.987E+00 | 9.031E+00 | 9.199E+00 | 9.369E+00 |
| **hf174** | 1.296E-13 | 1.296E-13 | 1.296E-13 | 1.296E-13 | 1.296E-13 |
| **hf175** | 9.153E-16 | 3.226E-23 | 1.285E-23 | 3.460E-25 | 9.319E-27 |
| **hf176** | 3.314E-13 | 3.314E-13 | 3.314E-13 | 3.314E-13 | 3.314E-13 |
| **hf177** | 4.699E-14 | 4.700E-14 | 4.700E-14 | 4.700E-14 | 4.700E-14 |
| **hf178** | 3.042E-13 | 3.042E-13 | 3.042E-13 | 3.042E-13 | 3.042E-13 |
| **hf179** | 7.804E-13 | 7.804E-13 | 7.804E-13 | 7.804E-13 | 7.804E-13 |
| **hf180** | 6.265E-13 | 6.265E-13 | 6.265E-13 | 6.265E-13 | 6.265E-13 |
| **hf181** | 2.578E-17 | 1.272E-29 | 2.779E-30 | 7.112E-33 | 0.000E+00 |
| **hf182** | 1.247E-15 | 1.247E-15 | 1.247E-15 | 1.247E-15 | 1.247E-15 |
| **hg196** | 1.451E-14 | 1.451E-14 | 1.451E-14 | 1.451E-14 | 1.451E-14 |
| **hg198** | 6.700E-13 | 6.700E-13 | 6.700E-13 | 6.700E-13 | 6.700E-13 |
| **hg199** | 9.612E-14 | 9.612E-14 | 9.612E-14 | 9.612E-14 | 9.612E-14 |
| **hg200** | 8.183E-13 | 8.183E-13 | 8.183E-13 | 8.183E-13 | 8.183E-13 |
| **hg201** | 3.519E-13 | 3.519E-13 | 3.519E-13 | 3.519E-13 | 3.519E-13 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hg202** | 3.809E-13 | 3.809E-13 | 3.809E-13 | 3.809E-13 | 3.809E-13 |
| **hg204** | 3.694E-13 | 3.694E-13 | 3.694E-13 | 3.694E-13 | 3.694E-13 |
| **ho163** | 1.984E-07 | 1.983E-07 | 1.983E-07 | 1.983E-07 | 1.982E-07 |
| **ho165** | 2.627E-01 | 2.627E-01 | 2.627E-01 | 2.627E-01 | 2.627E-01 |
| **ho166m** | 6.331E-04 | 6.314E-04 | 6.313E-04 | 6.309E-04 | 6.306E-04 |
| **i125** | 9.558E-10 | 1.577E-18 | 5.327E-19 | 7.531E-21 | 1.064E-22 |
| **i126** | 1.638E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i127** | 8.661E+01 | 8.681E+01 | 8.681E+01 | 8.681E+01 | 8.681E+01 |
| **i129** | 2.769E+02 | 2.769E+02 | 2.769E+02 | 2.769E+02 | 2.769E+02 |
| **i131** | 1.100E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113** | 7.099E-04 | 1.644E-03 | 1.688E-03 | 1.856E-03 | 2.017E-03 |
| **in113m** | 3.766E-14 | 1.104E-18 | 6.305E-19 | 6.999E-20 | 7.770E-21 |
| **in114** | 3.953E-12 | 1.148E-22 | 3.121E-23 | 1.884E-25 | 1.137E-27 |
| **in114m** | 2.431E-07 | 7.059E-18 | 1.920E-18 | 1.159E-20 | 6.993E-23 |
| **in115** | 3.023E+00 | 3.024E+00 | 3.024E+00 | 3.024E+00 | 3.024E+00 |
| **in115m** | 2.751E-10 | 5.395E-22 | 1.270E-22 | 4.345E-25 | 1.486E-27 |
| **ir191** | 6.886E-15 | 6.886E-15 | 6.886E-15 | 6.886E-15 | 6.886E-15 |
| **ir192** | 1.492E-16 | 1.281E-23 | 5.349E-24 | 1.738E-25 | 5.645E-27 |
| **ir193** | 1.630E-13 | 1.643E-13 | 1.644E-13 | 1.646E-13 | 1.648E-13 |
| **k 39** | 7.053E-14 | 7.053E-14 | 7.053E-14 | 7.053E-14 | 7.053E-14 |
| **k 40** | 6.946E-14 | 6.946E-14 | 6.946E-14 | 6.946E-14 | 6.946E-14 |
| **k 41** | 7.737E-14 | 7.737E-14 | 7.737E-14 | 7.737E-14 | 7.737E-14 |
| **kr 78** | 1.864E-13 | 1.864E-13 | 1.864E-13 | 1.864E-13 | 1.864E-13 |
| **kr 80** | 4.987E-04 | 4.987E-04 | 4.987E-04 | 4.987E-04 | 4.987E-04 |
| **kr 81** | 4.268E-05 | 4.268E-05 | 4.268E-05 | 4.268E-05 | 4.268E-05 |
| **kr 82** | 9.432E-01 | 9.432E-01 | 9.432E-01 | 9.432E-01 | 9.432E-01 |
| **kr 83** | 3.681E+01 | 3.681E+01 | 3.681E+01 | 3.681E+01 | 3.681E+01 |
| **kr 83m** | 3.873E-11 | 3.435E-17 | 1.626E-17 | 8.641E-19 | 4.590E-20 |
| **kr 84** | 8.674E+01 | 8.674E+01 | 8.674E+01 | 8.674E+01 | 8.674E+01 |
| **kr 85** | 1.761E+01 | 1.297E+01 | 1.276E+01 | 1.196E+01 | 1.121E+01 |
| **kr 86** | 1.285E+02 | 1.285E+02 | 1.285E+02 | 1.285E+02 | 1.285E+02 |
| **la137** | 4.646E-04 | 4.646E-04 | 4.646E-04 | 4.646E-04 | 4.646E-04 |
| **la138** | 2.667E-02 | 2.667E-02 | 2.667E-02 | 2.667E-02 | 2.667E-02 |
| **la139** | 1.420E+03 | 1.420E+03 | 1.420E+03 | 1.420E+03 | 1.420E+03 |
| **la140** | 1.969E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **li6** | 2.598E-10 | 2.598E-10 | 2.598E-10 | 2.598E-10 | 2.598E-10 |
| **li7** | 2.849E-11 | 2.849E-11 | 2.849E-11 | 2.849E-11 | 2.849E-11 |
| **lu175** | 2.971E-13 | 2.981E-13 | 2.981E-13 | 2.981E-13 | 2.981E-13 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu176** | 6.589E-15 | 6.589E-15 | 6.589E-15 | 6.589E-15 | 6.589E-15 |
| **mg 24** | 4.366E-14 | 4.366E-14 | 4.366E-14 | 4.366E-14 | 4.366E-14 |
| **mg 25** | 4.543E-14 | 4.543E-14 | 4.543E-14 | 4.543E-14 | 4.543E-14 |
| **mg 26** | 4.729E-14 | 4.729E-14 | 4.729E-14 | 4.729E-14 | 4.729E-14 |
| **mn 54** | 2.259E-17 | 4.810E-19 | 3.912E-19 | 1.739E-19 | 7.731E-20 |
| **mn 55** | 9.758E-14 | 9.771E-14 | 9.771E-14 | 9.771E-14 | 9.778E-14 |
| **mo 92** | 6.275E-12 | 6.275E-12 | 6.275E-12 | 6.275E-12 | 6.275E-12 |
| **mo 93** | 4.301E-07 | 4.297E-07 | 4.297E-07 | 4.297E-07 | 4.296E-07 |
| **mo 94** | 1.435E-02 | 1.435E-02 | 1.435E-02 | 1.435E-02 | 1.435E-02 |
| **mo 95** | 7.624E+02 | 7.704E+02 | 7.704E+02 | 7.704E+02 | 7.704E+02 |
| **mo 96** | 4.608E+01 | 4.608E+01 | 4.608E+01 | 4.608E+01 | 4.608E+01 |
| **mo 97** | 9.279E+02 | 9.279E+02 | 9.279E+02 | 9.279E+02 | 9.279E+02 |
| **mo 98** | 1.016E+03 | 1.016E+03 | 1.016E+03 | 1.016E+03 | 1.016E+03 |
| **mo100** | 1.196E+03 | 1.196E+03 | 1.196E+03 | 1.196E+03 | 1.196E+03 |
| **n 14** | 4.846E-06 | 5.073E-06 | 5.085E-06 | 5.133E-06 | 5.181E-06 |
| **n 15** | 1.170E-02 | 1.170E-02 | 1.170E-02 | 1.170E-02 | 1.170E-02 |
| **na 23** | 4.178E-14 | 4.178E-14 | 4.178E-14 | 4.178E-14 | 4.178E-14 |
| **nb 91** | 9.798E-09 | 9.751E-09 | 9.745E-09 | 9.738E-09 | 9.725E-09 |
| **nb 91m** | 6.219E-15 | 1.666E-23 | 5.778E-24 | 9.047E-26 | 1.416E-27 |
| **nb 92** | 8.488E-07 | 8.488E-07 | 8.488E-07 | 8.488E-07 | 8.488E-07 |
| **nb 92m** | 1.644E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93** | 1.037E-04 | 3.791E-04 | 4.000E-04 | 4.874E-04 | 5.833E-04 |
| **nb 93m** | 6.143E-04 | 1.713E-03 | 1.766E-03 | 1.968E-03 | 2.162E-03 |
| **nb 94** | 3.143E-03 | 3.143E-03 | 3.143E-03 | 3.143E-03 | 3.143E-03 |
| **nb 95** | 4.196E+00 | 3.159E-08 | 1.153E-08 | 2.285E-10 | 4.400E-12 |
| **nb 95m** | 2.370E-03 | 1.688E-11 | 6.168E-12 | 1.186E-13 | 2.281E-15 |
| **nd142** | 2.137E+01 | 2.137E+01 | 2.137E+01 | 2.137E+01 | 2.137E+01 |
| **nd143** | 9.193E+02 | 9.193E+02 | 9.193E+02 | 9.193E+02 | 9.193E+02 |
| **nd144** | 1.072E+03 | 1.252E+03 | 1.252E+03 | 1.254E+03 | 1.254E+03 |
| **nd145** | 7.079E+02 | 7.079E+02 | 7.079E+02 | 7.079E+02 | 7.079E+02 |
| **nd146** | 7.923E+02 | 7.923E+02 | 7.923E+02 | 7.923E+02 | 7.923E+02 |
| **nd147** | 4.452E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd148** | 4.616E+02 | 4.616E+02 | 4.616E+02 | 4.616E+02 | 4.616E+02 |
| **nd150** | 2.715E+02 | 2.715E+02 | 2.715E+02 | 2.715E+02 | 2.715E+02 |
| **ni 58** | 1.046E-13 | 1.046E-13 | 1.046E-13 | 1.046E-13 | 1.046E-13 |
| **ni 59** | 8.242E-14 | 8.242E-14 | 8.242E-14 | 8.242E-14 | 8.242E-14 |
| **ni 60** | 1.339E-13 | 1.391E-13 | 1.393E-13 | 1.401E-13 | 1.407E-13 |
| **ni 61** | 1.110E-13 | 1.110E-13 | 1.110E-13 | 1.110E-13 | 1.110E-13 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ni 62** | 1.110E-13 | 1.110E-13 | 1.110E-13 | 1.110E-13 | 1.110E-13 |
| **ni 63** | 2.211E-15 | 2.140E-15 | 2.136E-15 | 2.122E-15 | 2.107E-15 |
| **ni 64** | 1.169E-13 | 1.169E-13 | 1.169E-13 | 1.169E-13 | 1.169E-13 |
| **np235** | 2.315E-06 | 1.116E-07 | 9.485E-08 | 5.009E-08 | 2.645E-08 |
| **np236** | 3.378E-04 | 3.378E-04 | 3.378E-04 | 3.378E-04 | 3.378E-04 |
| **np237** | 1.870E+02 | 1.928E+02 | 1.934E+02 | 1.954E+02 | 1.977E+02 |
| **np238** | 6.352E-07 | 6.206E-07 | 6.198E-07 | 6.167E-07 | 6.137E-07 |
| **np239** | 3.448E-04 | 3.446E-04 | 3.446E-04 | 3.446E-04 | 3.446E-04 |
| **np240** | 2.222E-16 | 2.222E-16 | 2.222E-16 | 2.222E-16 | 2.222E-16 |
| **np240m** | 2.160E-14 | 2.160E-14 | 2.160E-14 | 2.160E-14 | 2.160E-14 |
| **o 16** | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 |
| **o 17** | 3.796E-02 | 3.796E-02 | 3.796E-02 | 3.796E-02 | 3.796E-02 |
| **o 18** | 1.683E-07 | 1.683E-07 | 1.683E-07 | 1.683E-07 | 1.683E-07 |
| **os186** | 2.138E-13 | 2.138E-13 | 2.138E-13 | 2.138E-13 | 2.138E-13 |
| **os187** | 3.740E-14 | 3.740E-14 | 3.740E-14 | 3.740E-14 | 3.740E-14 |
| **os188** | 1.473E-13 | 1.473E-13 | 1.473E-13 | 1.473E-13 | 1.473E-13 |
| **os189** | 1.027E-14 | 1.027E-14 | 1.027E-14 | 1.027E-14 | 1.027E-14 |
| **os190** | 2.901E-15 | 2.901E-15 | 2.901E-15 | 2.901E-15 | 2.901E-15 |
| **os192** | 8.435E-15 | 8.448E-15 | 8.448E-15 | 8.448E-15 | 8.448E-15 |
| **p 31** | 5.639E-14 | 5.639E-14 | 5.639E-14 | 5.639E-14 | 5.639E-14 |
| **pa230** | 1.024E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 2.402E-05 | 2.791E-05 | 2.812E-05 | 2.893E-05 | 2.976E-05 |
| **pa232** | 1.569E-14 | 1.569E-14 | 1.569E-14 | 1.569E-14 | 1.569E-14 |
| **pa233** | 6.331E-06 | 6.525E-06 | 6.541E-06 | 6.618E-06 | 6.694E-06 |
| **pa234** | 2.502E-10 | 2.503E-10 | 2.502E-10 | 2.502E-10 | 2.502E-10 |
| **pa234m** | 4.509E-10 | 4.511E-10 | 4.509E-10 | 4.509E-10 | 4.509E-10 |
| **pb204** | 3.696E-13 | 3.696E-13 | 3.696E-13 | 3.696E-13 | 3.696E-13 |
| **pb205** | 1.320E-15 | 1.321E-15 | 1.321E-15 | 1.321E-15 | 1.321E-15 |
| **pb206** | 1.967E-12 | 9.412E-12 | 9.824E-12 | 1.147E-11 | 1.321E-11 |
| **pb207** | 6.727E-11 | 3.178E-10 | 3.401E-10 | 4.367E-10 | 5.476E-10 |
| **pb208** | 9.392E-07 | 2.081E-05 | 2.265E-05 | 3.042E-05 | 3.902E-05 |
| **pb209** | 1.660E-14 | 1.717E-14 | 1.719E-14 | 1.737E-14 | 1.754E-14 |
| **pb210** | 5.266E-11 | 5.336E-11 | 5.386E-11 | 5.647E-11 | 6.023E-11 |
| **pb211** | 1.928E-15 | 8.787E-15 | 8.973E-15 | 1.058E-14 | 1.200E-14 |
| **pb212** | 2.064E-09 | 1.264E-08 | 1.310E-08 | 1.469E-08 | 1.602E-08 |
| **pd102** | 9.126E-04 | 1.087E-03 | 1.087E-03 | 1.087E-03 | 1.088E-03 |
| **pd103** | 2.909E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd104** | 4.052E+02 | 4.052E+02 | 4.052E+02 | 4.052E+02 | 4.052E+02 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pd105** | 9.067E+02 | 9.067E+02 | 9.067E+02 | 9.067E+02 | 9.067E+02 |
| **pd106** | 7.345E+02 | 9.386E+02 | 9.399E+02 | 9.439E+02 | 9.452E+02 |
| **pd107** | 5.915E+02 | 5.915E+02 | 5.915E+02 | 5.915E+02 | 5.915E+02 |
| **pd108** | 4.110E+02 | 4.110E+02 | 4.110E+02 | 4.110E+02 | 4.110E+02 |
| **pd110** | 1.355E+02 | 1.355E+02 | 1.355E+02 | 1.355E+02 | 1.355E+02 |
| **pm143** | 1.597E-12 | 1.716E-14 | 1.345E-14 | 5.179E-15 | 1.993E-15 |
| **pm144** | 4.839E-10 | 1.769E-11 | 1.481E-11 | 7.378E-12 | 3.674E-12 |
| **pm145** | 3.457E-05 | 2.896E-05 | 2.868E-05 | 2.758E-05 | 2.652E-05 |
| **pm146** | 3.623E-04 | 1.999E-04 | 1.936E-04 | 1.708E-04 | 1.507E-04 |
| **pm147** | 1.631E+02 | 4.654E+01 | 4.351E+01 | 3.341E+01 | 2.566E+01 |
| **pm148** | 1.831E-04 | 4.245E-17 | 8.907E-18 | 1.944E-20 | 4.242E-23 |
| **pm148m** | 2.917E-02 | 6.760E-15 | 1.419E-15 | 3.098E-18 | 6.760E-21 |
| **po210** | 7.870E-13 | 8.860E-13 | 8.920E-13 | 9.279E-13 | 9.811E-13 |
| **po216** | 7.963E-15 | 4.874E-14 | 5.054E-14 | 5.665E-14 | 6.178E-14 |
| **pr141** | 1.292E+03 | 1.292E+03 | 1.292E+03 | 1.292E+03 | 1.292E+03 |
| **pr143** | 2.947E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 7.677E-03 | 1.133E-04 | 9.040E-05 | 3.718E-05 | 1.530E-05 |
| **pr144m** | 3.055E-05 | 4.508E-07 | 3.595E-07 | 1.479E-07 | 6.087E-08 |
| **pt192** | 1.427E-13 | 1.428E-13 | 1.428E-13 | 1.428E-13 | 1.428E-13 |
| **pt193** | 2.026E-14 | 1.897E-14 | 1.890E-14 | 1.864E-14 | 1.839E-14 |
| **pt194** | 3.564E-13 | 3.564E-13 | 3.564E-13 | 3.564E-13 | 3.564E-13 |
| **pt195** | 3.070E-15 | 3.071E-15 | 3.071E-15 | 3.071E-15 | 3.071E-15 |
| **pt196** | 5.021E-16 | 5.021E-16 | 5.021E-16 | 5.021E-16 | 5.021E-16 |
| **pu236** | 9.957E-04 | 3.149E-04 | 2.961E-04 | 2.324E-04 | 1.823E-04 |
| **pu237** | 1.135E-05 | 4.214E-17 | 1.026E-17 | 4.017E-20 | 1.572E-22 |
| **pu238** | 1.944E+02 | 2.055E+02 | 2.051E+02 | 2.035E+02 | 2.019E+02 |
| **pu239** | 1.202E+04 | 1.202E+04 | 1.202E+04 | 1.202E+04 | 1.202E+04 |
| **pu240** | 7.066E+03 | 7.092E+03 | 7.092E+03 | 7.099E+03 | 7.099E+03 |
| **pu241** | 4.156E+03 | 3.302E+03 | 3.261E+03 | 3.106E+03 | 2.959E+03 |
| **pu242** | 1.471E+03 | 1.471E+03 | 1.471E+03 | 1.471E+03 | 1.471E+03 |
| **pu243** | 8.016E-13 | 8.016E-13 | 8.016E-13 | 8.016E-13 | 8.016E-13 |
| **pu244** | 1.299E-01 | 1.299E-01 | 1.299E-01 | 1.299E-01 | 1.299E-01 |
| **pu246** | 1.394E-16 | 1.393E-16 | 1.393E-16 | 1.393E-16 | 1.393E-16 |
| **ra223** | 9.293E-13 | 4.233E-12 | 4.323E-12 | 5.095E-12 | 5.784E-12 |
| **ra224** | 1.801E-08 | 1.102E-07 | 1.143E-07 | 1.281E-07 | 1.397E-07 |
| **ra225** | 1.964E-12 | 2.031E-12 | 2.035E-12 | 2.055E-12 | 2.076E-12 |
| **ra226** | 1.407E-09 | 8.761E-09 | 9.406E-09 | 1.225E-08 | 1.561E-08 |
| **ra228** | 3.758E-14 | 6.464E-14 | 6.595E-14 | 7.099E-14 | 7.591E-14 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **rb 83** | 5.890E-08 | 5.224E-14 | 2.473E-14 | 1.314E-15 | 6.979E-17 |
| **rb 84** | 6.561E-08 | 8.349E-24 | 1.171E-24 | 5.255E-28 | 2.359E-31 |
| **rb 85** | 7.185E+01 | 7.651E+01 | 7.671E+01 | 7.750E+01 | 7.824E+01 |
| **rb 86** | 1.272E-06 | 1.268E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.684E+02 | 1.684E+02 | 1.684E+02 | 1.684E+02 | 1.684E+02 |
| **re185** | 5.988E-14 | 6.000E-14 | 6.000E-14 | 6.000E-14 | 6.000E-14 |
| **re186m** | 1.912E-16 | 1.912E-16 | 1.912E-16 | 1.912E-16 | 1.912E-16 |
| **re187** | 3.520E-13 | 3.520E-13 | 3.520E-13 | 3.520E-13 | 3.520E-13 |
| **rh101** | 5.473E-07 | 2.020E-07 | 1.915E-07 | 1.552E-07 | 1.258E-07 |
| **rh102** | 7.943E-04 | 2.749E-06 | 2.088E-06 | 7.863E-07 | 3.735E-07 |
| **rh102m** | 1.924E-03 | 7.990E-04 | 7.624E-04 | 6.335E-04 | 5.264E-04 |
| **rh103** | 8.482E+02 | 8.488E+02 | 8.488E+02 | 8.488E+02 | 8.488E+02 |
| **rh103m** | 5.748E-04 | 2.931E-17 | 5.672E-18 | 9.000E-21 | 1.427E-23 |
| **rh106** | 1.988E-04 | 7.857E-06 | 6.606E-06 | 3.345E-06 | 1.694E-06 |
| **rn220** | 3.109E-12 | 1.903E-11 | 1.974E-11 | 2.212E-11 | 2.413E-11 |
| **rn222** | 8.967E-15 | 5.629E-14 | 6.045E-14 | 7.877E-14 | 1.003E-13 |
| **ru 96** | 1.729E-13 | 1.729E-13 | 1.729E-13 | 1.729E-13 | 1.729E-13 |
| **ru 98** | 1.781E-06 | 1.790E-06 | 1.790E-06 | 1.792E-06 | 1.794E-06 |
| **ru 99** | 4.039E-02 | 5.512E-02 | 5.591E-02 | 5.901E-02 | 6.211E-02 |
| **ru100** | 1.623E+02 | 1.623E+02 | 1.623E+02 | 1.623E+02 | 1.623E+02 |
| **ru101** | 1.032E+03 | 1.032E+03 | 1.032E+03 | 1.032E+03 | 1.032E+03 |
| **ru102** | 1.199E+03 | 1.199E+03 | 1.199E+03 | 1.199E+03 | 1.199E+03 |
| **ru103** | 5.852E-01 | 2.985E-14 | 5.775E-15 | 9.160E-18 | 1.453E-20 |
| **ru104** | 1.126E+03 | 1.126E+03 | 1.126E+03 | 1.126E+03 | 1.126E+03 |
| **ru106** | 2.124E+02 | 8.395E+00 | 7.059E+00 | 3.573E+00 | 1.809E+00 |
| **s 32** | 5.810E-14 | 5.810E-14 | 5.810E-14 | 5.810E-14 | 5.810E-14 |
| **s 33** | 5.969E-14 | 5.969E-14 | 5.969E-14 | 5.969E-14 | 5.969E-14 |
| **s 34** | 6.188E-14 | 6.188E-14 | 6.188E-14 | 6.188E-14 | 6.188E-14 |
| **s 36** | 6.543E-14 | 6.543E-14 | 6.543E-14 | 6.543E-14 | 6.543E-14 |
| **sb121** | 7.990E+00 | 8.043E+00 | 8.050E+00 | 8.056E+00 | 8.070E+00 |
| **sb123** | 1.054E+01 | 1.060E+01 | 1.060E+01 | 1.060E+01 | 1.060E+01 |
| **sb124** | 3.720E-03 | 8.030E-12 | 2.751E-12 | 4.115E-14 | 6.154E-16 |
| **sb125** | 1.358E+01 | 4.121E+00 | 3.866E+00 | 3.008E+00 | 2.340E+00 |
| **sb126** | 8.409E-07 | 8.362E-07 | 8.362E-07 | 8.362E-07 | 8.362E-07 |
| **sb126m** | 6.432E-09 | 6.432E-09 | 6.432E-09 | 6.432E-09 | 6.432E-09 |
| **sc 45** | 7.883E-14 | 7.883E-14 | 7.883E-14 | 7.883E-14 | 7.883E-14 |
| **sc 46** | 4.386E-17 | 2.606E-23 | 1.207E-23 | 5.895E-25 | 2.878E-26 |
| **se 74** | 3.756E-07 | 3.756E-07 | 3.756E-07 | 3.756E-07 | 3.756E-07 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **se 75** | 8.342E-09 | 3.683E-13 | 2.150E-13 | 2.602E-14 | 3.148E-15 |
| **se 76** | 8.282E-03 | 8.282E-03 | 8.282E-03 | 8.282E-03 | 8.282E-03 |
| **se 77** | 8.741E-01 | 8.741E-01 | 8.741E-01 | 8.741E-01 | 8.741E-01 |
| **se 78** | 2.519E+00 | 2.519E+00 | 2.519E+00 | 2.519E+00 | 2.519E+00 |
| **se 79** | 5.350E+00 | 5.350E+00 | 5.350E+00 | 5.350E+00 | 5.350E+00 |
| **se 80** | 1.233E+01 | 1.233E+01 | 1.233E+01 | 1.233E+01 | 1.233E+01 |
| **se 82** | 3.244E+01 | 3.244E+01 | 3.244E+01 | 3.244E+01 | 3.244E+01 |
| **si 28** | 5.091E-14 | 5.091E-14 | 5.091E-14 | 5.091E-14 | 5.091E-14 |
| **si 29** | 5.278E-14 | 5.278E-14 | 5.278E-14 | 5.278E-14 | 5.278E-14 |
| **si 30** | 5.486E-14 | 5.486E-14 | 5.486E-14 | 5.486E-14 | 5.486E-14 |
| **sm144** | 5.679E-11 | 5.679E-11 | 5.679E-11 | 5.679E-11 | 5.679E-11 |
| **sm145** | 2.983E-07 | 8.714E-09 | 7.212E-09 | 3.426E-09 | 1.628E-09 |
| **sm146** | 3.169E-03 | 3.224E-03 | 3.226E-03 | 3.234E-03 | 3.240E-03 |
| **sm147** | 1.093E+02 | 2.258E+02 | 2.289E+02 | 2.390E+02 | 2.467E+02 |
| **sm148** | 1.898E+02 | 1.898E+02 | 1.898E+02 | 1.898E+02 | 1.898E+02 |
| **sm149** | 5.346E+00 | 5.346E+00 | 5.346E+00 | 5.346E+00 | 5.346E+00 |
| **sm150** | 3.945E+02 | 3.945E+02 | 3.945E+02 | 3.945E+02 | 3.945E+02 |
| **sm151** | 2.247E+01 | 2.166E+01 | 2.162E+01 | 2.146E+01 | 2.129E+01 |
| **sm152** | 1.412E+02 | 1.412E+02 | 1.412E+02 | 1.412E+02 | 1.412E+02 |
| **sm154** | 7.731E+01 | 7.731E+01 | 7.731E+01 | 7.731E+01 | 7.731E+01 |
| **sn112** | 2.852E-09 | 2.852E-09 | 2.852E-09 | 2.852E-09 | 2.852E-09 |
| **sn113** | 6.269E-11 | 1.838E-15 | 1.050E-15 | 1.165E-16 | 1.294E-17 |
| **sn114** | 1.490E-04 | 1.493E-04 | 1.493E-04 | 1.493E-04 | 1.493E-04 |
| **sn115** | 4.766E-01 | 4.766E-01 | 4.766E-01 | 4.766E-01 | 4.766E-01 |
| **sn116** | 4.047E+00 | 4.047E+00 | 4.047E+00 | 4.047E+00 | 4.047E+00 |
| **sn117** | 9.665E+00 | 9.665E+00 | 9.665E+00 | 9.665E+00 | 9.665E+00 |
| **sn117m** | 2.517E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn118** | 8.555E+00 | 8.555E+00 | 8.555E+00 | 8.555E+00 | 8.555E+00 |
| **sn119** | 8.129E+00 | 8.189E+00 | 8.189E+00 | 8.189E+00 | 8.189E+00 |
| **sn119m** | 6.246E-02 | 1.036E-03 | 8.309E-04 | 3.504E-04 | 1.478E-04 |
| **sn120** | 8.222E+00 | 8.222E+00 | 8.222E+00 | 8.222E+00 | 8.222E+00 |
| **sn121** | 3.909E-05 | 3.627E-05 | 3.612E-05 | 3.555E-05 | 3.500E-05 |
| **sn121m** | 7.172E-01 | 6.654E-01 | 6.626E-01 | 6.523E-01 | 6.420E-01 |
| **sn122** | 1.090E+01 | 1.090E+01 | 1.090E+01 | 1.090E+01 | 1.090E+01 |
| **sn123** | 7.026E-02 | 6.438E-06 | 3.909E-06 | 5.516E-07 | 7.784E-08 |
| **sn124** | 1.742E+01 | 1.742E+01 | 1.742E+01 | 1.742E+01 | 1.742E+01 |
| **sn125** | 6.827E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 4.063E+01 | 4.063E+01 | 4.063E+01 | 4.063E+01 | 4.063E+01 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sr 84** | 8.103E-06 | 8.109E-06 | 8.109E-06 | 8.109E-06 | 8.109E-06 |
| **sr 85** | 1.399E-08 | 1.258E-16 | 4.656E-17 | 9.406E-19 | 1.900E-20 |
| **sr 86** | 4.913E-01 | 4.913E-01 | 4.913E-01 | 4.913E-01 | 4.913E-01 |
| **sr 87** | 5.154E-03 | 5.154E-03 | 5.154E-03 | 5.154E-03 | 5.154E-03 |
| **sr 88** | 2.237E+02 | 2.237E+02 | 2.237E+02 | 2.237E+02 | 2.237E+02 |
| **sr 89** | 4.822E-01 | 2.285E-11 | 6.381E-12 | 4.270E-14 | 2.857E-16 |
| **sr 90** | 3.435E+02 | 3.064E+02 | 3.046E+02 | 2.973E+02 | 2.902E+02 |
| **ta180m** | 2.048E-17 | 2.048E-17 | 2.048E-17 | 2.048E-17 | 2.048E-17 |
| **ta181** | 1.751E-13 | 1.751E-13 | 1.751E-13 | 1.751E-13 | 1.751E-13 |
| **ta182** | 6.353E-16 | 1.809E-20 | 1.033E-20 | 1.178E-21 | 1.690E-22 |
| **tb157** | 7.112E-07 | 6.793E-07 | 6.773E-07 | 6.707E-07 | 6.644E-07 |
| **tb158** | 9.858E-05 | 9.685E-05 | 9.671E-05 | 9.632E-05 | 9.598E-05 |
| **tb159** | 6.714E+00 | 6.714E+00 | 6.714E+00 | 6.714E+00 | 6.714E+00 |
| **tb160** | 1.705E-02 | 1.038E-09 | 4.255E-10 | 1.286E-11 | 3.885E-13 |
| **tb161** | 6.866E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 5.342E-18 | 1.498E-26 | 5.205E-27 | 8.229E-29 | 0.000E+00 |
| **tc 95m** | 9.937E-15 | 2.786E-23 | 9.685E-24 | 1.531E-25 | 2.419E-27 |
| **tc 97** | 1.024E-05 | 1.032E-05 | 1.032E-05 | 1.032E-05 | 1.032E-05 |
| **tc 97m** | 8.854E-08 | 1.638E-13 | 8.063E-14 | 5.003E-15 | 3.103E-16 |
| **tc 98** | 1.058E-02 | 1.058E-02 | 1.058E-02 | 1.058E-02 | 1.058E-02 |
| **tc 99** | 9.452E+02 | 9.452E+02 | 9.452E+02 | 9.452E+02 | 9.452E+02 |
| **te120** | 2.511E-09 | 2.511E-09 | 2.511E-09 | 2.511E-09 | 2.511E-09 |
| **te121** | 3.326E-08 | 2.211E-11 | 1.493E-11 | 3.199E-12 | 6.853E-13 |
| **te121m** | 2.839E-07 | 1.888E-10 | 1.275E-10 | 2.731E-11 | 5.850E-12 |
| **te122** | 7.618E-01 | 7.618E-01 | 7.618E-01 | 7.618E-01 | 7.618E-01 |
| **te123** | 9.612E-03 | 1.006E-02 | 1.006E-02 | 1.006E-02 | 1.006E-02 |
| **te123m** | 4.461E-04 | 1.874E-08 | 1.091E-08 | 1.307E-09 | 1.565E-10 |
| **te124** | 5.458E-01 | 5.495E-01 | 5.495E-01 | 5.495E-01 | 5.495E-01 |
| **te125** | 9.645E+00 | 1.923E+01 | 1.949E+01 | 2.036E+01 | 2.104E+01 |
| **te125m** | 1.886E-01 | 5.750E-02 | 5.393E-02 | 4.196E-02 | 3.264E-02 |
| **te126** | 1.000E+00 | 1.000E+00 | 1.001E+00 | 1.001E+00 | 1.001E+00 |
| **te127** | 8.395E-04 | 1.374E-08 | 7.604E-09 | 7.465E-10 | 7.332E-11 |
| **te127m** | 2.399E-01 | 3.925E-06 | 2.173E-06 | 2.133E-07 | 2.094E-08 |
| **te128** | 1.573E+02 | 1.573E+02 | 1.573E+02 | 1.573E+02 | 1.573E+02 |
| **te129** | 6.615E-06 | 1.968E-21 | 2.889E-22 | 1.551E-25 | 8.329E-29 |
| **te129m** | 7.292E-03 | 2.169E-18 | 3.184E-19 | 1.710E-22 | 9.180E-26 |
| **te130** | 5.286E+02 | 5.286E+02 | 5.286E+02 | 5.286E+02 | 5.286E+02 |
| **th227** | 1.560E-12 | 6.946E-12 | 7.139E-12 | 8.362E-12 | 9.492E-12 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **th228** | 3.544E-06 | 2.133E-05 | 2.209E-05 | 2.480E-05 | 2.705E-05 |
| **th229** | 3.596E-07 | 3.720E-07 | 3.728E-07 | 3.764E-07 | 3.801E-07 |
| **th230** | 8.442E-05 | 2.758E-04 | 2.889E-04 | 3.432E-04 | 4.018E-04 |
| **th231** | 3.419E-09 | 3.425E-09 | 3.426E-09 | 3.427E-09 | 3.429E-09 |
| **th232** | 2.243E-04 | 2.675E-04 | 2.699E-04 | 2.790E-04 | 2.883E-04 |
| **th234** | 1.350E-05 | 1.351E-05 | 1.350E-05 | 1.350E-05 | 1.350E-05 |
| **ti 46** | 8.661E-14 | 8.668E-14 | 8.668E-14 | 8.668E-14 | 8.668E-14 |
| **ti 47** | 8.535E-14 | 8.535E-14 | 8.535E-14 | 8.535E-14 | 8.535E-14 |
| **ti 48** | 8.661E-14 | 8.661E-14 | 8.661E-14 | 8.661E-14 | 8.661E-14 |
| **ti 49** | 9.000E-14 | 9.000E-14 | 9.000E-14 | 9.000E-14 | 9.000E-14 |
| **ti 50** | 9.113E-14 | 9.113E-14 | 9.113E-14 | 9.113E-14 | 9.113E-14 |
| **tl203** | 3.232E-15 | 3.237E-15 | 3.237E-15 | 3.237E-15 | 3.237E-15 |
| **tl204** | 6.827E-17 | 2.861E-17 | 2.731E-17 | 2.274E-17 | 1.893E-17 |
| **tl205** | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 | 1.470E-15 |
| **tl207** | 2.493E-16 | 1.135E-15 | 1.160E-15 | 1.367E-15 | 1.552E-15 |
| **tl208** | 3.481E-12 | 2.131E-11 | 2.209E-11 | 2.477E-11 | 2.701E-11 |
| **tm168** | 9.180E-10 | 2.287E-15 | 1.145E-15 | 7.558E-17 | 4.991E-18 |
| **tm169** | 9.425E-04 | 9.425E-04 | 9.425E-04 | 9.425E-04 | 9.425E-04 |
| **tm170** | 5.204E-05 | 4.567E-09 | 2.766E-09 | 3.869E-10 | 5.409E-11 |
| **tm171** | 1.719E-04 | 3.100E-05 | 2.828E-05 | 1.972E-05 | 1.375E-05 |
| **u230** | 2.749E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 4.638E-04 | 1.093E-03 | 1.108E-03 | 1.159E-03 | 1.196E-03 |
| **u233** | 4.656E-04 | 7.704E-04 | 7.857E-04 | 8.541E-04 | 9.233E-04 |
| **u234** | 1.073E+01 | 1.836E+01 | 1.876E+01 | 2.035E+01 | 2.193E+01 |
| **u235** | 8.409E+02 | 8.422E+02 | 8.428E+02 | 8.428E+02 | 8.435E+02 |
| **u236** | 3.117E+02 | 3.152E+02 | 3.154E+02 | 3.161E+02 | 3.169E+02 |
| **u237** | 1.297E-04 | 1.030E-04 | 1.018E-04 | 9.691E-05 | 9.233E-05 |
| **u238** | 9.299E+05 | 9.299E+05 | 9.299E+05 | 9.299E+05 | 9.299E+05 |
| **u240** | 2.531E-12 | 2.531E-12 | 2.531E-12 | 2.531E-12 | 2.531E-12 |
| **v 50** | 5.954E-17 | 5.954E-17 | 5.954E-17 | 5.954E-17 | 5.954E-17 |
| **v 51** | 2.121E-15 | 2.121E-15 | 2.121E-15 | 2.121E-15 | 2.121E-15 |
| **w182** | 2.588E-13 | 2.594E-13 | 2.594E-13 | 2.594E-13 | 2.594E-13 |
| **w183** | 6.561E-13 | 6.561E-13 | 6.561E-13 | 6.561E-13 | 6.561E-13 |
| **w184** | 5.841E-13 | 5.841E-13 | 5.841E-13 | 5.841E-13 | 5.841E-13 |
| **w185** | 1.238E-16 | 1.400E-23 | 5.934E-24 | 2.043E-25 | 7.033E-27 |
| **w186** | 2.055E-13 | 2.055E-13 | 2.055E-13 | 2.055E-13 | 2.055E-13 |
| **xe124** | 1.972E-13 | 1.972E-13 | 1.972E-13 | 1.972E-13 | 1.972E-13 |
| **xe126** | 3.184E-04 | 3.184E-04 | 3.184E-04 | 3.184E-04 | 3.184E-04 |

| Table C-3. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **xe127** | 4.963E-08 | 2.310E-22 | 3.931E-23 | 3.766E-26 | 3.608E-29 |
| **xe128** | 7.830E+00 | 7.830E+00 | 7.830E+00 | 7.830E+00 | 7.830E+00 |
| **xe129** | 5.578E-02 | 5.584E-02 | 5.585E-02 | 5.586E-02 | 5.587E-02 |
| **xe129m** | 2.664E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe130** | 1.067E+01 | 1.067E+01 | 1.067E+01 | 1.067E+01 | 1.067E+01 |
| **xe131** | 5.788E+02 | 5.788E+02 | 5.788E+02 | 5.788E+02 | 5.788E+02 |
| **xe131m** | 8.787E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe132** | 1.593E-14 | 1.593E-14 | 1.593E-14 | 1.593E-14 | 1.593E-14 |
| **xe132** | 1.535E+03 | 1.535E+03 | 1.535E+03 | 1.535E+03 | 1.535E+03 |
| **xe133** | 8.993E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe134** | 1.858E+03 | 1.858E+03 | 1.858E+03 | 1.858E+03 | 1.858E+03 |
| **xe136** | 2.852E+03 | 2.852E+03 | 2.852E+03 | 2.852E+03 | 2.852E+03 |
| **y 88** | 2.632E-05 | 3.371E-10 | 1.841E-10 | 1.717E-11 | 1.601E-12 |
| **y 89** | 2.945E+02 | 2.950E+02 | 2.950E+02 | 2.950E+02 | 2.950E+02 |
| **y 89m** | 1.668E-10 | 7.903E-21 | 2.207E-21 | 1.477E-23 | 9.884E-26 |
| **y 90** | 8.714E-02 | 7.770E-02 | 7.724E-02 | 7.544E-02 | 7.365E-02 |
| **y 91** | 1.350E+00 | 1.637E-09 | 5.439E-10 | 7.205E-12 | 9.545E-14 |
| **yb168** | 1.899E-12 | 1.991E-12 | 1.991E-12 | 1.991E-12 | 1.991E-12 |
| **yb169** | 3.315E-12 | 1.686E-28 | 2.251E-29 | 8.335E-33 | 0.000E+00 |
| **yb170** | 6.880E-04 | 7.405E-04 | 7.405E-04 | 7.405E-04 | 7.405E-04 |
| **yb171** | 2.190E-04 | 3.599E-04 | 3.627E-04 | 3.712E-04 | 3.772E-04 |
| **yb172** | 4.573E-04 | 4.573E-04 | 4.573E-04 | 4.573E-04 | 4.573E-04 |
| **yb176** | 1.252E-16 | 1.252E-16 | 1.252E-16 | 1.252E-16 | 1.252E-16 |
| **zn 64** | 4.771E-16 | 4.771E-16 | 4.771E-16 | 4.771E-16 | 4.771E-16 |
| **zn 66** | 1.508E-04 | 1.508E-04 | 1.508E-04 | 1.508E-04 | 1.508E-04 |
| **zn 67** | 4.236E-04 | 4.236E-04 | 4.236E-04 | 4.236E-04 | 4.236E-04 |
| **zn 68** | 8.315E-04 | 8.315E-04 | 8.315E-04 | 8.315E-04 | 8.315E-04 |
| **zn 70** | 3.798E-03 | 3.798E-03 | 3.798E-03 | 3.798E-03 | 3.798E-03 |
| **zr 88** | 5.792E-12 | 3.218E-18 | 1.486E-18 | 7.152E-20 | 3.442E-21 |
| **zr 90** | 1.947E+01 | 5.656E+01 | 5.843E+01 | 6.567E+01 | 7.272E+01 |
| **zr 91** | 4.287E+02 | 4.300E+02 | 4.300E+02 | 4.300E+02 | 4.300E+02 |
| **zr 92** | 5.191E+02 | 5.191E+02 | 5.191E+02 | 5.191E+02 | 5.191E+02 |
| **zr 93** | 6.393E+02 | 6.393E+02 | 6.392E+02 | 6.392E+02 | 6.392E+02 |
| **zr 94** | 7.325E+02 | 7.325E+02 | 7.325E+02 | 7.325E+02 | 7.325E+02 |
| **zr 95** | 3.672E+00 | 2.616E-08 | 9.558E-09 | 1.838E-10 | 3.535E-12 |
| **zr 96** | 8.561E+02 | 8.561E+02 | 8.561E+02 | 8.561E+02 | 8.561E+02 |
| **Total** | **1.1344E+06** | **1.1344E+06** | **1.1344E+06** | **1.1344E+06** | **1.1344E+06** |

**Table C-4. MOX Fuel Rod B14 (high Pu): Nuclide mass in grams per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 1.174E-12 | 1.220E-12 | 1.222E-12 | 1.236E-12 | 1.250E-12 |
| **ac227** | 7.363E-10 | 3.120E-09 | 3.251E-09 | 3.763E-09 | 4.280E-09 |
| **ag105** | 9.544E-15 | 2.214E-27 | 4.646E-28 | 1.014E-30 | 2.212E-33 |
| **ag107** | 1.542E-04 | 4.956E-04 | 5.139E-04 | 5.858E-04 | 6.577E-04 |
| **ag108** | 7.211E-13 | 7.158E-13 | 7.151E-13 | 7.145E-13 | 7.131E-13 |
| **ag108m** | 8.013E-04 | 7.953E-04 | 7.953E-04 | 7.940E-04 | 7.927E-04 |
| **ag109** | 2.311E+02 | 2.311E+02 | 2.311E+02 | 2.311E+02 | 2.311E+02 |
| **ag109m** | 2.202E-10 | 1.630E-11 | 1.417E-11 | 8.192E-12 | 4.733E-12 |
| **ag110** | 2.332E-08 | 1.901E-10 | 1.469E-10 | 5.333E-11 | 1.937E-11 |
| **ag110m** | 1.504E+00 | 1.226E-02 | 9.471E-03 | 3.440E-03 | 1.249E-03 |
| **ag111** | 1.709E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **al 27** | 4.893E-14 | 4.893E-14 | 4.893E-14 | 4.893E-14 | 4.893E-14 |
| **am241** | 4.289E+02 | 1.489E+03 | 1.539E+03 | 1.729E+03 | 1.910E+03 |
| **am242** | 5.610E-05 | 5.480E-05 | 5.474E-05 | 5.447E-05 | 5.420E-05 |
| **am242m** | 4.348E+00 | 4.248E+00 | 4.242E+00 | 4.222E+00 | 4.201E+00 |
| **am243** | 3.875E+02 | 3.874E+02 | 3.874E+02 | 3.873E+02 | 3.873E+02 |
| **am244** | 3.014E-15 | 2.091E-15 | 2.051E-15 | 1.899E-15 | 1.758E-15 |
| **am245** | 3.250E-14 | 7.615E-16 | 6.225E-16 | 2.823E-16 | 1.280E-16 |
| **ar 36** | 6.467E-14 | 6.467E-14 | 6.467E-14 | 6.467E-14 | 6.467E-14 |
| **ar 38** | 6.886E-14 | 6.886E-14 | 6.886E-14 | 6.886E-14 | 6.886E-14 |
| **ar 39** | 1.208E-16 | 1.194E-16 | 1.193E-16 | 1.190E-16 | 1.186E-16 |
| **ar 40** | 7.284E-14 | 7.284E-14 | 7.284E-14 | 7.284E-14 | 7.284E-14 |
| **as 73** | 1.562E-10 | 4.977E-17 | 2.230E-17 | 9.551E-19 | 4.090E-20 |
| **as 74** | 1.962E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **as 75** | 1.895E-01 | 1.895E-01 | 1.895E-01 | 1.895E-01 | 1.895E-01 |
| **au197** | 2.289E-13 | 2.289E-13 | 2.289E-13 | 2.289E-13 | 2.289E-13 |
| **b 10** | 6.137E-11 | 3.294E-10 | 3.438E-10 | 4.002E-10 | 4.567E-10 |
| **b 11** | 6.986E-08 | 6.986E-08 | 6.986E-08 | 6.986E-08 | 6.986E-08 |
| **ba130** | 1.901E-13 | 1.901E-13 | 1.901E-13 | 1.901E-13 | 1.901E-13 |
| **ba131** | 4.781E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba132** | 9.292E-17 | 9.292E-17 | 9.292E-17 | 9.292E-17 | 9.292E-17 |
| **ba132** | 3.315E-04 | 3.315E-04 | 3.315E-04 | 3.315E-04 | 3.315E-04 |
| **ba133** | 2.115E-04 | 1.547E-04 | 1.521E-04 | 1.424E-04 | 1.334E-04 |
| **ba134** | 1.192E+02 | 2.477E+02 | 2.504E+02 | 2.589E+02 | 2.651E+02 |
| **ba135** | 5.302E-01 | 5.313E-01 | 5.314E-01 | 5.317E-01 | 5.319E-01 |
| **ba136** | 5.184E+01 | 5.184E+01 | 5.184E+01 | 5.184E+01 | 5.184E+01 |
| **ba136m** | 3.633E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137** | 9.126E+01 | 2.703E+02 | 2.794E+02 | 3.145E+02 | 3.488E+02 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ba137m** | 2.641E-04 | 2.368E-04 | 2.354E-04 | 2.300E-04 | 2.248E-04 |
| **ba138** | 1.725E+03 | 1.725E+03 | 1.725E+03 | 1.725E+03 | 1.725E+03 |
| **ba140** | 1.536E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 9** | 2.375E-06 | 2.375E-06 | 2.375E-06 | 2.375E-06 | 2.375E-06 |
| **be 10** | 1.231E-04 | 1.231E-04 | 1.231E-04 | 1.231E-04 | 1.231E-04 |
| **bi208** | 1.129E-15 | 1.129E-15 | 1.129E-15 | 1.129E-15 | 1.129E-15 |
| **bi209** | 1.031E-10 | 2.365E-10 | 2.438E-10 | 2.727E-10 | 3.018E-10 |
| **bi210** | 3.259E-14 | 3.322E-14 | 3.355E-14 | 3.526E-14 | 3.770E-14 |
| **bi210m** | 1.506E-15 | 1.506E-15 | 1.506E-15 | 1.506E-15 | 1.506E-15 |
| **bi211** | 1.188E-16 | 5.432E-16 | 5.548E-16 | 6.551E-16 | 7.450E-16 |
| **bi212** | 1.819E-10 | 1.147E-09 | 1.190E-09 | 1.335E-09 | 1.457E-09 |
| **bi213** | 3.518E-15 | 3.657E-15 | 3.662E-15 | 3.705E-15 | 3.747E-15 |
| **bk247** | 5.780E-13 | 5.766E-13 | 5.765E-13 | 5.762E-13 | 5.760E-13 |
| **bk248** | 2.391E-11 | 1.659E-11 | 1.626E-11 | 1.506E-11 | 1.394E-11 |
| **bk249** | 8.530E-06 | 1.999E-07 | 1.634E-07 | 7.410E-08 | 3.362E-08 |
| **bk250** | 2.851E-15 | 3.694E-17 | 2.933E-17 | 1.196E-17 | 5.024E-18 |
| **br 79** | 3.352E-03 | 3.420E-03 | 3.423E-03 | 3.438E-03 | 3.452E-03 |
| **br 81** | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 | 2.588E+01 |
| **c 12** | 7.668E-02 | 7.668E-02 | 7.668E-02 | 7.668E-02 | 7.668E-02 |
| **c 13** | 1.212E+01 | 1.212E+01 | 1.212E+01 | 1.212E+01 | 1.212E+01 |
| **c 14** | 3.716E-04 | 3.714E-04 | 3.714E-04 | 3.714E-04 | 3.713E-04 |
| **ca 40** | 7.231E-14 | 7.231E-14 | 7.231E-14 | 7.231E-14 | 7.231E-14 |
| **ca 41** | 4.046E-17 | 4.046E-17 | 4.046E-17 | 4.046E-17 | 4.046E-17 |
| **ca 42** | 7.629E-14 | 7.629E-14 | 7.629E-14 | 7.629E-14 | 7.629E-14 |
| **ca 43** | 7.688E-14 | 7.688E-14 | 7.688E-14 | 7.688E-14 | 7.688E-14 |
| **ca 44** | 8.086E-14 | 8.086E-14 | 8.086E-14 | 8.086E-14 | 8.086E-14 |
| **ca 46** | 8.331E-14 | 8.331E-14 | 8.331E-14 | 8.331E-14 | 8.331E-14 |
| **ca 48** | 8.689E-14 | 8.689E-14 | 8.689E-14 | 8.689E-14 | 8.689E-14 |
| **cd106** | 3.089E-13 | 3.089E-13 | 3.089E-13 | 3.089E-13 | 3.089E-13 |
| **cd108** | 1.645E-03 | 1.645E-03 | 1.645E-03 | 1.646E-03 | 1.646E-03 |
| **cd109** | 2.217E-04 | 1.640E-05 | 1.426E-05 | 8.245E-06 | 4.764E-06 |
| **cd110** | 1.531E+02 | 1.546E+02 | 1.546E+02 | 1.546E+02 | 1.546E+02 |
| **cd111** | 7.277E+01 | 7.277E+01 | 7.277E+01 | 7.277E+01 | 7.277E+01 |
| **cd112** | 3.425E+01 | 3.425E+01 | 3.425E+01 | 3.425E+01 | 3.425E+01 |
| **cd113** | 3.940E-01 | 3.940E-01 | 3.940E-01 | 3.940E-01 | 3.940E-01 |
| **cd113m** | 5.587E-03 | 4.424E-03 | 4.369E-03 | 4.160E-03 | 3.960E-03 |
| **cd114** | 3.651E+01 | 3.651E+01 | 3.651E+01 | 3.651E+01 | 3.651E+01 |
| **cd115m** | 7.131E-04 | 1.399E-15 | 3.293E-16 | 1.127E-18 | 3.854E-21 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cd116** | 1.219E+01 | 1.219E+01 | 1.219E+01 | 1.219E+01 | 1.219E+01 |
| **ce136** | 2.279E-13 | 2.279E-13 | 2.279E-13 | 2.279E-13 | 2.279E-13 |
| **ce138** | 1.165E-05 | 1.165E-05 | 1.165E-05 | 1.165E-05 | 1.165E-05 |
| **ce139** | 1.644E-03 | 2.664E-07 | 1.668E-07 | 2.654E-08 | 4.223E-09 |
| **ce140** | 1.636E+03 | 1.636E+03 | 1.636E+03 | 1.636E+03 | 1.636E+03 |
| **ce141** | 2.269E-01 | 2.031E-17 | 2.796E-18 | 1.166E-21 | 4.859E-25 |
| **ce142** | 1.422E+03 | 1.422E+03 | 1.422E+03 | 1.422E+03 | 1.422E+03 |
| **ce144** | 2.101E+02 | 3.100E+00 | 2.472E+00 | 1.017E+00 | 4.186E-01 |
| **cf248** | 1.540E-11 | 4.199E-13 | 3.462E-13 | 1.621E-13 | 7.589E-14 |
| **cf249** | 9.113E-06 | 1.730E-05 | 1.732E-05 | 1.738E-05 | 1.738E-05 |
| **cf250** | 4.356E-06 | 3.387E-06 | 3.342E-06 | 3.170E-06 | 3.006E-06 |
| **cf251** | 2.160E-06 | 2.152E-06 | 2.151E-06 | 2.150E-06 | 2.148E-06 |
| **cf252** | 6.634E-07 | 1.913E-07 | 1.790E-07 | 1.378E-07 | 1.060E-07 |
| **cf253** | 3.871E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.958E-12 | 4.665E-21 | 1.607E-21 | 2.454E-23 | 3.748E-25 |
| **cl 35** | 6.039E-14 | 6.039E-14 | 6.039E-14 | 6.039E-14 | 6.039E-14 |
| **cl 36** | 3.296E-15 | 3.296E-15 | 3.296E-15 | 3.296E-15 | 3.296E-15 |
| **cl 37** | 6.767E-14 | 6.767E-14 | 6.767E-14 | 6.767E-14 | 6.767E-14 |
| **cm240** | 1.972E-11 | 9.398E-31 | 8.629E-32 | 0.000E+00 | 0.000E+00 |
| **cm241** | 2.808E-08 | 3.493E-24 | 4.895E-25 | 2.186E-28 | 9.769E-32 |
| **cm242** | 2.206E+01 | 2.493E-02 | 2.039E-02 | 1.299E-02 | 1.138E-02 |
| **cm243** | 1.874E+00 | 1.674E+00 | 1.664E+00 | 1.625E+00 | 1.587E+00 |
| **cm244** | 1.500E+02 | 1.251E+02 | 1.238E+02 | 1.192E+02 | 1.147E+02 |
| **cm245** | 1.430E+01 | 1.429E+01 | 1.429E+01 | 1.429E+01 | 1.429E+01 |
| **cm246** | 9.597E-01 | 9.590E-01 | 9.584E-01 | 9.584E-01 | 9.584E-01 |
| **cm247** | 1.463E-02 | 1.463E-02 | 1.463E-02 | 1.463E-02 | 1.463E-02 |
| **cm248** | 9.411E-04 | 9.418E-04 | 9.418E-04 | 9.418E-04 | 9.418E-04 |
| **cm250** | 1.163E-10 | 1.162E-10 | 1.162E-10 | 1.162E-10 | 1.162E-10 |
| **co 59** | 1.069E-13 | 1.069E-13 | 1.069E-13 | 1.069E-13 | 1.069E-13 |
| **co 60** | 9.915E-15 | 5.313E-15 | 5.138E-15 | 4.506E-15 | 3.950E-15 |
| **cr 50** | 8.888E-14 | 8.888E-14 | 8.888E-14 | 8.888E-14 | 8.888E-14 |
| **cr 52** | 9.418E-14 | 9.418E-14 | 9.418E-14 | 9.418E-14 | 9.418E-14 |
| **cr 53** | 9.411E-14 | 9.411E-14 | 9.411E-14 | 9.411E-14 | 9.411E-14 |
| **cr 54** | 1.000E-13 | 1.001E-13 | 1.001E-13 | 1.001E-13 | 1.001E-13 |
| **cs131** | 2.041E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 1.768E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs133** | 3.474E-17 | 3.554E-17 | 3.558E-17 | 3.572E-17 | 3.585E-17 |
| **cs133** | 1.584E+03 | 1.584E+03 | 1.584E+03 | 1.584E+03 | 1.584E+03 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cs134** | 1.614E+02 | 3.283E+01 | 3.014E+01 | 2.155E+01 | 1.541E+01 |
| **cs135** | 8.715E+02 | 8.715E+02 | 8.715E+02 | 8.715E+02 | 8.715E+02 |
| **cs136** | 1.210E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.729E+03 | 1.550E+03 | 1.541E+03 | 1.506E+03 | 1.471E+03 |
| **cu 63** | 1.131E-13 | 1.132E-13 | 1.132E-13 | 1.132E-13 | 1.132E-13 |
| **cu 65** | 2.368E-16 | 2.369E-16 | 2.369E-16 | 2.369E-16 | 2.369E-16 |
| **cu 65** | 4.410E-07 | 4.410E-07 | 4.410E-07 | 4.410E-07 | 4.410E-07 |
| **dy156** | 4.022E-12 | 4.022E-12 | 4.022E-12 | 4.022E-12 | 4.022E-12 |
| **dy158** | 1.497E-07 | 5.017E-07 | 5.204E-07 | 5.936E-07 | 6.668E-07 |
| **dy159** | 2.941E-07 | 7.171E-11 | 4.591E-11 | 7.960E-12 | 1.381E-12 |
| **dy160** | 9.643E-01 | 9.836E-01 | 9.836E-01 | 9.836E-01 | 9.836E-01 |
| **dy161** | 1.300E+00 | 1.300E+00 | 1.300E+00 | 1.300E+00 | 1.300E+00 |
| **dy162** | 7.993E-01 | 7.993E-01 | 7.993E-01 | 7.993E-01 | 7.993E-01 |
| **dy163** | 6.661E-01 | 6.661E-01 | 6.661E-01 | 6.661E-01 | 6.661E-01 |
| **dy164** | 2.700E-01 | 2.700E-01 | 2.700E-01 | 2.700E-01 | 2.700E-01 |
| **er162** | 4.638E-12 | 4.638E-12 | 4.638E-12 | 4.638E-12 | 4.638E-12 |
| **er164** | 3.235E-06 | 3.235E-06 | 3.235E-06 | 3.235E-06 | 3.235E-06 |
| **er166** | 8.450E-02 | 8.450E-02 | 8.450E-02 | 8.450E-02 | 8.450E-02 |
| **er167** | 4.233E-03 | 4.233E-03 | 4.233E-03 | 4.233E-03 | 4.233E-03 |
| **er168** | 1.332E-02 | 1.332E-02 | 1.332E-02 | 1.332E-02 | 1.332E-02 |
| **er169** | 1.175E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **er170** | 6.573E-04 | 6.573E-04 | 6.573E-04 | 6.573E-04 | 6.573E-04 |
| **es252** | 1.671E-15 | 1.309E-16 | 1.141E-16 | 6.674E-17 | 3.905E-17 |
| **es253** | 9.312E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 5.963E-12 | 7.642E-14 | 6.049E-14 | 2.416E-14 | 9.650E-15 |
| **es255** | 9.809E-15 | 7.655E-28 | 1.515E-28 | 2.629E-31 | 4.560E-34 |
| **eu147** | 3.292E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 7.860E-11 | 1.958E-16 | 9.796E-17 | 6.469E-18 | 4.272E-19 |
| **eu151** | 2.010E-01 | 1.202E+00 | 1.254E+00 | 1.460E+00 | 1.664E+00 |
| **eu152** | 4.136E-02 | 3.244E-02 | 3.202E-02 | 3.042E-02 | 2.890E-02 |
| **eu153** | 2.179E+02 | 2.179E+02 | 2.179E+02 | 2.179E+02 | 2.179E+02 |
| **eu154** | 6.265E+01 | 4.274E+01 | 4.187E+01 | 3.863E+01 | 3.564E+01 |
| **eu155** | 1.521E+01 | 7.615E+00 | 7.337E+00 | 6.341E+00 | 5.481E+00 |
| **eu156** | 4.252E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **f 19** | 9.259E-14 | 9.259E-14 | 9.259E-14 | 9.259E-14 | 9.259E-14 |
| **fe 54** | 9.749E-14 | 9.749E-14 | 9.749E-14 | 9.749E-14 | 9.749E-14 |
| **fe 55** | 1.872E-16 | 5.645E-17 | 5.294E-17 | 4.113E-17 | 3.195E-17 |
| **fe 56** | 1.065E-13 | 1.065E-13 | 1.065E-13 | 1.065E-13 | 1.065E-13 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **fe 57** | 1.033E-13 | 1.033E-13 | 1.033E-13 | 1.033E-13 | 1.033E-13 |
| **fe 58** | 3.039E-13 | 3.039E-13 | 3.039E-13 | 3.039E-13 | 3.039E-13 |
| **fr221** | 3.923E-16 | 4.078E-16 | 4.085E-16 | 4.132E-16 | 4.179E-16 |
| **ga 69** | 1.682E-03 | 1.682E-03 | 1.682E-03 | 1.682E-03 | 1.682E-03 |
| **ga 71** | 7.662E-03 | 7.662E-03 | 7.662E-03 | 7.662E-03 | 7.662E-03 |
| **gd151** | 9.153E-08 | 5.682E-12 | 3.378E-12 | 4.392E-13 | 5.708E-14 |
| **gd152** | 8.490E-02 | 8.742E-02 | 8.755E-02 | 8.795E-02 | 8.841E-02 |
| **gd153** | 3.430E-03 | 2.318E-05 | 1.773E-05 | 6.190E-06 | 2.161E-06 |
| **gd154** | 9.325E+00 | 2.923E+01 | 3.010E+01 | 3.334E+01 | 3.633E+01 |
| **gd155** | 1.929E+00 | 9.524E+00 | 9.802E+00 | 1.080E+01 | 1.166E+01 |
| **gd156** | 1.669E+02 | 1.669E+02 | 1.669E+02 | 1.669E+02 | 1.669E+02 |
| **gd157** | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 | 3.924E-01 |
| **gd158** | 4.942E+01 | 4.942E+01 | 4.942E+01 | 4.942E+01 | 4.942E+01 |
| **gd160** | 3.421E+00 | 3.421E+00 | 3.421E+00 | 3.421E+00 | 3.421E+00 |
| **ge 70** | 1.989E-05 | 1.989E-05 | 1.989E-05 | 1.989E-05 | 1.989E-05 |
| **ge 71** | 4.906E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 72** | 1.939E-02 | 1.939E-02 | 1.939E-02 | 1.939E-02 | 1.939E-02 |
| **ge 73** | 3.980E-02 | 3.980E-02 | 3.980E-02 | 3.980E-02 | 3.980E-02 |
| **ge 73m** | 1.123E-17 | 3.580E-24 | 1.604E-24 | 6.866E-26 | 2.941E-27 |
| **ge 74** | 9.524E-02 | 9.524E-02 | 9.524E-02 | 9.524E-02 | 9.524E-02 |
| **ge 76** | 4.278E-01 | 4.278E-01 | 4.278E-01 | 4.278E-01 | 4.278E-01 |
| **h1** | 6.424E-03 | 6.424E-03 | 6.424E-03 | 6.424E-03 | 6.424E-03 |
| **h2** | 1.373E-03 | 1.373E-03 | 1.373E-03 | 1.373E-03 | 1.373E-03 |
| **h3** | 8.144E-02 | 6.235E-02 | 6.147E-02 | 5.811E-02 | 5.493E-02 |
| **he3** | 4.987E-03 | 2.406E-02 | 2.495E-02 | 2.831E-02 | 3.149E-02 |
| **he4** | 8.179E+00 | 9.337E+00 | 9.382E+00 | 9.557E+00 | 9.733E+00 |
| **hf174** | 1.462E-13 | 1.462E-13 | 1.462E-13 | 1.462E-13 | 1.462E-13 |
| **hf175** | 9.696E-16 | 3.419E-23 | 1.361E-23 | 3.667E-25 | 9.875E-27 |
| **hf176** | 3.295E-13 | 3.295E-13 | 3.295E-13 | 3.295E-13 | 3.295E-13 |
| **hf177** | 5.304E-14 | 5.305E-14 | 5.305E-14 | 5.305E-14 | 5.305E-14 |
| **hf178** | 3.390E-13 | 3.390E-13 | 3.390E-13 | 3.390E-13 | 3.390E-13 |
| **hf179** | 7.602E-13 | 7.602E-13 | 7.602E-13 | 7.602E-13 | 7.602E-13 |
| **hf180** | 5.894E-13 | 5.894E-13 | 5.894E-13 | 5.894E-13 | 5.894E-13 |
| **hf181** | 2.358E-17 | 1.163E-29 | 2.542E-30 | 6.504E-33 | 0.000E+00 |
| **hf182** | 9.995E-16 | 9.995E-16 | 9.995E-16 | 9.995E-16 | 9.995E-16 |
| **hg196** | 2.578E-14 | 2.578E-14 | 2.578E-14 | 2.578E-14 | 2.578E-14 |
| **hg198** | 6.626E-13 | 6.626E-13 | 6.626E-13 | 6.626E-13 | 6.626E-13 |
| **hg199** | 1.134E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 | 1.134E-13 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hg200** | 7.688E-13 | 7.688E-13 | 7.688E-13 | 7.688E-13 | 7.688E-13 |
| **hg201** | 3.517E-13 | 3.517E-13 | 3.517E-13 | 3.517E-13 | 3.517E-13 |
| **hg202** | 3.789E-13 | 3.789E-13 | 3.789E-13 | 3.789E-13 | 3.789E-13 |
| **hg204** | 3.685E-13 | 3.685E-13 | 3.685E-13 | 3.685E-13 | 3.685E-13 |
| **ho163** | 2.454E-07 | 2.452E-07 | 2.452E-07 | 2.452E-07 | 2.452E-07 |
| **ho165** | 2.646E-01 | 2.646E-01 | 2.646E-01 | 2.646E-01 | 2.646E-01 |
| **ho166m** | 6.880E-04 | 6.860E-04 | 6.860E-04 | 6.853E-04 | 6.853E-04 |
| **i125** | 1.172E-09 | 1.933E-18 | 6.531E-19 | 9.232E-21 | 1.304E-22 |
| **i126** | 2.017E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i127** | 1.010E+02 | 1.013E+02 | 1.013E+02 | 1.013E+02 | 1.013E+02 |
| **i129** | 3.182E+02 | 3.182E+02 | 3.182E+02 | 3.182E+02 | 3.182E+02 |
| **i131** | 1.310E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113** | 9.484E-04 | 2.109E-03 | 2.164E-03 | 2.373E-03 | 2.572E-03 |
| **in113m** | 4.587E-14 | 1.345E-18 | 7.682E-19 | 8.523E-20 | 9.464E-21 |
| **in114** | 5.199E-12 | 1.510E-22 | 4.107E-23 | 2.478E-25 | 1.496E-27 |
| **in114m** | 3.197E-07 | 9.285E-18 | 2.525E-18 | 1.524E-20 | 9.199E-23 |
| **in115** | 3.565E+00 | 3.566E+00 | 3.566E+00 | 3.566E+00 | 3.566E+00 |
| **in115m** | 3.180E-10 | 6.235E-22 | 1.467E-22 | 5.021E-25 | 1.717E-27 |
| **ir191** | 1.074E-14 | 1.074E-14 | 1.074E-14 | 1.074E-14 | 1.074E-14 |
| **ir192** | 2.303E-16 | 1.977E-23 | 8.258E-24 | 2.682E-25 | 8.715E-27 |
| **ir193** | 1.762E-13 | 1.774E-13 | 1.775E-13 | 1.778E-13 | 1.780E-13 |
| **k 39** | 7.039E-14 | 7.039E-14 | 7.039E-14 | 7.039E-14 | 7.039E-14 |
| **k 40** | 6.979E-14 | 6.979E-14 | 6.979E-14 | 6.979E-14 | 6.979E-14 |
| **k 41** | 7.675E-14 | 7.675E-14 | 7.675E-14 | 7.675E-14 | 7.675E-14 |
| **kr 78** | 2.029E-13 | 2.029E-13 | 2.029E-13 | 2.029E-13 | 2.029E-13 |
| **kr 80** | 5.535E-04 | 5.535E-04 | 5.535E-04 | 5.535E-04 | 5.535E-04 |
| **kr 81** | 4.751E-05 | 4.751E-05 | 4.751E-05 | 4.751E-05 | 4.751E-05 |
| **kr 82** | 1.023E+00 | 1.023E+00 | 1.023E+00 | 1.023E+00 | 1.023E+00 |
| **kr 83** | 4.223E+01 | 4.223E+01 | 4.223E+01 | 4.223E+01 | 4.223E+01 |
| **kr 83m** | 4.775E-11 | 4.236E-17 | 2.005E-17 | 1.065E-18 | 5.660E-20 |
| **kr 84** | 9.551E+01 | 9.551E+01 | 9.551E+01 | 9.551E+01 | 9.551E+01 |
| **kr 85** | 1.976E+01 | 1.456E+01 | 1.432E+01 | 1.343E+01 | 1.259E+01 |
| **kr 86** | 1.426E+02 | 1.426E+02 | 1.426E+02 | 1.426E+02 | 1.426E+02 |
| **la137** | 5.518E-04 | 5.518E-04 | 5.518E-04 | 5.518E-04 | 5.518E-04 |
| **la138** | 3.028E-02 | 3.028E-02 | 3.028E-02 | 3.028E-02 | 3.028E-02 |
| **la139** | 1.599E+03 | 1.599E+03 | 1.599E+03 | 1.599E+03 | 1.599E+03 |
| **la140** | 2.333E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **li6** | 2.552E-10 | 2.552E-10 | 2.552E-10 | 2.552E-10 | 2.552E-10 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **li7** | 2.439E-11 | 2.439E-11 | 2.439E-11 | 2.439E-11 | 2.439E-11 |
| **lu175** | 2.977E-13 | 2.987E-13 | 2.987E-13 | 2.987E-13 | 2.987E-13 |
| **lu176** | 7.251E-15 | 7.251E-15 | 7.251E-15 | 7.251E-15 | 7.251E-15 |
| **mg 24** | 4.354E-14 | 4.354E-14 | 4.354E-14 | 4.354E-14 | 4.354E-14 |
| **mg 25** | 4.531E-14 | 4.531E-14 | 4.531E-14 | 4.531E-14 | 4.531E-14 |
| **mg 26** | 4.715E-14 | 4.715E-14 | 4.715E-14 | 4.715E-14 | 4.715E-14 |
| **mn 54** | 2.254E-17 | 4.799E-19 | 3.904E-19 | 1.735E-19 | 7.715E-20 |
| **mn 55** | 9.763E-14 | 9.776E-14 | 9.776E-14 | 9.776E-14 | 9.776E-14 |
| **mo 92** | 6.793E-12 | 6.793E-12 | 6.793E-12 | 6.793E-12 | 6.793E-12 |
| **mo 93** | 4.749E-07 | 4.745E-07 | 4.745E-07 | 4.745E-07 | 4.743E-07 |
| **mo 94** | 1.581E-02 | 1.581E-02 | 1.581E-02 | 1.581E-02 | 1.581E-02 |
| **mo 95** | 8.629E+02 | 8.722E+02 | 8.722E+02 | 8.722E+02 | 8.722E+02 |
| **mo 96** | 4.751E+01 | 4.751E+01 | 4.751E+01 | 4.751E+01 | 4.751E+01 |
| **mo 97** | 1.047E+03 | 1.047E+03 | 1.047E+03 | 1.047E+03 | 1.047E+03 |
| **mo 98** | 1.146E+03 | 1.146E+03 | 1.146E+03 | 1.146E+03 | 1.146E+03 |
| **mo100** | 1.351E+03 | 1.351E+03 | 1.351E+03 | 1.351E+03 | 1.351E+03 |
| **n 14** | 4.707E-06 | 4.921E-06 | 4.933E-06 | 4.978E-06 | 5.023E-06 |
| **n 15** | 1.131E-02 | 1.131E-02 | 1.131E-02 | 1.131E-02 | 1.131E-02 |
| **na 23** | 4.167E-14 | 4.167E-14 | 4.167E-14 | 4.167E-14 | 4.167E-14 |
| **nb 91** | 1.153E-08 | 1.148E-08 | 1.147E-08 | 1.146E-08 | 1.145E-08 |
| **nb 91m** | 7.569E-15 | 2.027E-23 | 7.032E-24 | 1.100E-25 | 1.723E-27 |
| **nb 92** | 1.002E-06 | 1.002E-06 | 1.002E-06 | 1.002E-06 | 1.002E-06 |
| **nb 92m** | 1.896E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93** | 1.180E-04 | 4.252E-04 | 4.486E-04 | 5.464E-04 | 6.537E-04 |
| **nb 93m** | 6.800E-04 | 1.915E-03 | 1.974E-03 | 2.201E-03 | 2.418E-03 |
| **nb 94** | 3.605E-03 | 3.605E-03 | 3.605E-03 | 3.605E-03 | 3.605E-03 |
| **nb 95** | 4.982E+00 | 3.750E-08 | 1.368E-08 | 2.713E-10 | 5.223E-12 |
| **nb 95m** | 2.813E-03 | 2.004E-11 | 7.324E-12 | 1.408E-13 | 2.709E-15 |
| **nd142** | 2.157E+01 | 2.157E+01 | 2.157E+01 | 2.157E+01 | 2.157E+01 |
| **nd143** | 1.066E+03 | 1.066E+03 | 1.066E+03 | 1.066E+03 | 1.066E+03 |
| **nd144** | 1.161E+03 | 1.368E+03 | 1.369E+03 | 1.370E+03 | 1.371E+03 |
| **nd145** | 8.020E+02 | 8.020E+02 | 8.020E+02 | 8.020E+02 | 8.020E+02 |
| **nd146** | 8.762E+02 | 8.762E+02 | 8.762E+02 | 8.762E+02 | 8.762E+02 |
| **nd147** | 5.259E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd148** | 5.164E+02 | 5.164E+02 | 5.164E+02 | 5.164E+02 | 5.164E+02 |
| **nd150** | 3.046E+02 | 3.046E+02 | 3.046E+02 | 3.046E+02 | 3.046E+02 |
| **ni 58** | 1.044E-13 | 1.044E-13 | 1.044E-13 | 1.044E-13 | 1.044E-13 |
| **ni 59** | 8.470E-14 | 8.470E-14 | 8.470E-14 | 8.470E-14 | 8.470E-14 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ni 60** | 1.309E-13 | 1.355E-13 | 1.357E-13 | 1.363E-13 | 1.369E-13 |
| **ni 61** | 1.106E-13 | 1.106E-13 | 1.106E-13 | 1.106E-13 | 1.106E-13 |
| **ni 62** | 1.109E-13 | 1.109E-13 | 1.109E-13 | 1.109E-13 | 1.109E-13 |
| **ni 63** | 1.862E-15 | 1.802E-15 | 1.799E-15 | 1.787E-15 | 1.774E-15 |
| **ni 64** | 1.165E-13 | 1.165E-13 | 1.165E-13 | 1.165E-13 | 1.165E-13 |
| **np235** | 2.251E-06 | 1.085E-07 | 9.219E-08 | 4.869E-08 | 2.572E-08 |
| **np236** | 3.541E-04 | 3.541E-04 | 3.541E-04 | 3.541E-04 | 3.541E-04 |
| **np237** | 1.813E+02 | 1.886E+02 | 1.892E+02 | 1.918E+02 | 1.947E+02 |
| **np238** | 8.066E-07 | 7.880E-07 | 7.874E-07 | 7.834E-07 | 7.794E-07 |
| **np239** | 3.336E-04 | 3.334E-04 | 3.334E-04 | 3.334E-04 | 3.334E-04 |
| **np240** | 1.921E-16 | 1.921E-16 | 1.921E-16 | 1.921E-16 | 1.921E-16 |
| **np240m** | 1.868E-14 | 1.868E-14 | 1.868E-14 | 1.868E-14 | 1.868E-14 |
| **o 16** | 1.343E+05 | 1.343E+05 | 1.343E+05 | 1.343E+05 | 1.343E+05 |
| **o 17** | 3.187E-02 | 3.187E-02 | 3.187E-02 | 3.187E-02 | 3.187E-02 |
| **o 18** | 1.241E-07 | 1.241E-07 | 1.241E-07 | 1.241E-07 | 1.241E-07 |
| **os186** | 2.122E-13 | 2.122E-13 | 2.122E-13 | 2.122E-13 | 2.122E-13 |
| **os187** | 3.350E-14 | 3.350E-14 | 3.350E-14 | 3.350E-14 | 3.350E-14 |
| **os188** | 1.323E-13 | 1.323E-13 | 1.323E-13 | 1.323E-13 | 1.323E-13 |
| **os189** | 8.616E-15 | 8.616E-15 | 8.616E-15 | 8.616E-15 | 8.616E-15 |
| **os190** | 2.234E-15 | 2.234E-15 | 2.234E-15 | 2.234E-15 | 2.234E-15 |
| **os192** | 9.140E-15 | 9.153E-15 | 9.153E-15 | 9.153E-15 | 9.153E-15 |
| **p 31** | 5.623E-14 | 5.623E-14 | 5.623E-14 | 5.623E-14 | 5.623E-14 |
| **pa230** | 1.110E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 2.487E-05 | 2.933E-05 | 2.958E-05 | 3.051E-05 | 3.146E-05 |
| **pa232** | 1.645E-14 | 1.644E-14 | 1.644E-14 | 1.644E-14 | 1.644E-14 |
| **pa233** | 6.136E-06 | 6.379E-06 | 6.399E-06 | 6.495E-06 | 6.593E-06 |
| **pa234** | 2.466E-10 | 2.468E-10 | 2.466E-10 | 2.466E-10 | 2.466E-10 |
| **pa234m** | 4.444E-10 | 4.446E-10 | 4.444E-10 | 4.444E-10 | 4.444E-10 |
| **pb204** | 1.689E-17 | 4.698E-17 | 4.797E-17 | 5.144E-17 | 5.433E-17 |
| **pb204** | 3.686E-13 | 3.686E-13 | 3.686E-13 | 3.686E-13 | 3.686E-13 |
| **pb205** | 1.196E-15 | 1.197E-15 | 1.197E-15 | 1.197E-15 | 1.198E-15 |
| **pb206** | 1.905E-12 | 9.358E-12 | 9.776E-12 | 1.144E-11 | 1.319E-11 |
| **pb207** | 6.426E-11 | 3.250E-10 | 3.482E-10 | 4.491E-10 | 5.651E-10 |
| **pb208** | 8.556E-07 | 1.976E-05 | 2.152E-05 | 2.896E-05 | 3.721E-05 |
| **pb209** | 1.478E-14 | 1.536E-14 | 1.538E-14 | 1.556E-14 | 1.574E-14 |
| **pb210** | 5.270E-11 | 5.370E-11 | 5.424E-11 | 5.701E-11 | 6.096E-11 |
| **pb211** | 2.005E-15 | 9.166E-15 | 9.358E-15 | 1.105E-14 | 1.257E-14 |
| **pb212** | 1.918E-09 | 1.209E-08 | 1.254E-08 | 1.407E-08 | 1.536E-08 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pd102** | 1.040E-03 | 1.249E-03 | 1.249E-03 | 1.249E-03 | 1.250E-03 |
| **pd103** | 3.128E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd104** | 4.189E+02 | 4.189E+02 | 4.189E+02 | 4.189E+02 | 4.189E+02 |
| **pd105** | 1.043E+03 | 1.043E+03 | 1.043E+03 | 1.043E+03 | 1.043E+03 |
| **pd106** | 8.139E+02 | 1.050E+03 | 1.051E+03 | 1.056E+03 | 1.058E+03 |
| **pd107** | 6.747E+02 | 6.747E+02 | 6.747E+02 | 6.747E+02 | 6.747E+02 |
| **pd108** | 4.669E+02 | 4.669E+02 | 4.669E+02 | 4.669E+02 | 4.669E+02 |
| **pd110** | 1.527E+02 | 1.527E+02 | 1.527E+02 | 1.527E+02 | 1.527E+02 |
| **pm143** | 1.817E-12 | 1.953E-14 | 1.532E-14 | 5.895E-15 | 2.269E-15 |
| **pm144** | 5.556E-10 | 2.031E-11 | 1.700E-11 | 8.470E-12 | 4.218E-12 |
| **pm145** | 3.955E-05 | 3.314E-05 | 3.281E-05 | 3.156E-05 | 3.035E-05 |
| **pm146** | 4.856E-04 | 2.680E-04 | 2.595E-04 | 2.290E-04 | 2.020E-04 |
| **pm147** | 1.929E+02 | 5.506E+01 | 5.148E+01 | 3.953E+01 | 3.036E+01 |
| **pm148** | 2.248E-04 | 5.212E-17 | 1.094E-17 | 2.387E-20 | 5.209E-23 |
| **pm148m** | 3.582E-02 | 8.305E-15 | 1.743E-15 | 3.804E-18 | 8.298E-21 |
| **po210** | 7.821E-13 | 8.908E-13 | 8.974E-13 | 9.358E-13 | 9.915E-13 |
| **po216** | 7.397E-15 | 4.662E-14 | 4.836E-14 | 5.427E-14 | 5.925E-14 |
| **pr141** | 1.459E+03 | 1.460E+03 | 1.460E+03 | 1.460E+03 | 1.460E+03 |
| **pr143** | 3.491E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 8.848E-03 | 1.306E-04 | 1.041E-04 | 4.285E-05 | 1.763E-05 |
| **pr144m** | 3.521E-05 | 5.195E-07 | 4.143E-07 | 1.705E-07 | 7.012E-08 |
| **pt192** | 1.570E-13 | 1.572E-13 | 1.572E-13 | 1.572E-13 | 1.572E-13 |
| **pt193** | 1.996E-14 | 1.869E-14 | 1.862E-14 | 1.837E-14 | 1.811E-14 |
| **pt194** | 3.232E-13 | 3.232E-13 | 3.232E-13 | 3.232E-13 | 3.232E-13 |
| **pt195** | 2.574E-15 | 2.574E-15 | 2.574E-15 | 2.574E-15 | 2.574E-15 |
| **pt196** | 3.861E-16 | 3.861E-16 | 3.861E-16 | 3.861E-16 | 3.861E-16 |
| **pu236** | 9.650E-04 | 3.053E-04 | 2.870E-04 | 2.252E-04 | 1.768E-04 |
| **pu237** | 1.237E-05 | 4.592E-17 | 1.118E-17 | 4.376E-20 | 1.713E-22 |
| **pu238** | 2.004E+02 | 2.141E+02 | 2.137E+02 | 2.120E+02 | 2.104E+02 |
| **pu239** | 1.580E+04 | 1.580E+04 | 1.580E+04 | 1.580E+04 | 1.580E+04 |
| **pu240** | 9.882E+03 | 9.902E+03 | 9.902E+03 | 9.908E+03 | 9.908E+03 |
| **pu241** | 5.194E+03 | 4.126E+03 | 4.075E+03 | 3.883E+03 | 3.699E+03 |
| **pu242** | 1.523E+03 | 1.523E+03 | 1.523E+03 | 1.523E+03 | 1.523E+03 |
| **pu243** | 5.217E-13 | 5.217E-13 | 5.217E-13 | 5.217E-13 | 5.217E-13 |
| **pu244** | 1.123E-01 | 1.123E-01 | 1.123E-01 | 1.123E-01 | 1.123E-01 |
| **ra223** | 9.663E-13 | 4.415E-12 | 4.510E-12 | 5.325E-12 | 6.054E-12 |
| **ra224** | 1.674E-08 | 1.054E-07 | 1.094E-07 | 1.227E-07 | 1.340E-07 |
| **ra225** | 1.748E-12 | 1.818E-12 | 1.821E-12 | 1.842E-12 | 1.863E-12 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra226** | 1.464E-09 | 9.093E-09 | 9.769E-09 | 1.272E-08 | 1.620E-08 |
| **ra228** | 3.209E-14 | 5.711E-14 | 5.833E-14 | 6.302E-14 | 6.760E-14 |
| **rb 83** | 7.264E-08 | 6.442E-14 | 3.049E-14 | 1.620E-15 | 8.609E-17 |
| **rb 84** | 7.615E-08 | 9.690E-24 | 1.359E-24 | 6.103E-28 | 2.739E-31 |
| **rb 85** | 8.033E+01 | 8.550E+01 | 8.576E+01 | 8.662E+01 | 8.749E+01 |
| **rb 86** | 1.428E-06 | 1.424E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.871E+02 | 1.871E+02 | 1.871E+02 | 1.871E+02 | 1.871E+02 |
| **re185** | 6.727E-14 | 6.740E-14 | 6.740E-14 | 6.740E-14 | 6.740E-14 |
| **re186m** | 1.996E-16 | 1.996E-16 | 1.996E-16 | 1.996E-16 | 1.996E-16 |
| **re187** | 3.550E-13 | 3.550E-13 | 3.550E-13 | 3.550E-13 | 3.550E-13 |
| **rh101** | 6.366E-07 | 2.350E-07 | 2.228E-07 | 1.805E-07 | 1.464E-07 |
| **rh102** | 9.504E-04 | 3.279E-06 | 2.489E-06 | 9.332E-07 | 4.409E-07 |
| **rh102m** | 2.250E-03 | 9.345E-04 | 8.914E-04 | 7.410E-04 | 6.156E-04 |
| **rh103** | 1.002E+03 | 1.003E+03 | 1.003E+03 | 1.003E+03 | 1.003E+03 |
| **rh103m** | 6.840E-04 | 3.490E-17 | 6.754E-18 | 1.071E-20 | 1.699E-23 |
| **rh106** | 2.304E-04 | 9.107E-06 | 7.655E-06 | 3.876E-06 | 1.962E-06 |
| **rn220** | 2.890E-12 | 1.821E-11 | 1.889E-11 | 2.120E-11 | 2.314E-11 |
| **rn222** | 9.332E-15 | 5.846E-14 | 6.278E-14 | 8.179E-14 | 1.041E-13 |
| **ru 96** | 1.726E-13 | 1.726E-13 | 1.726E-13 | 1.726E-13 | 1.726E-13 |
| **ru 98** | 1.926E-06 | 1.935E-06 | 1.936E-06 | 1.938E-06 | 1.940E-06 |
| **ru 99** | 4.561E-02 | 6.240E-02 | 6.330E-02 | 6.681E-02 | 7.039E-02 |
| **ru100** | 1.696E+02 | 1.696E+02 | 1.696E+02 | 1.696E+02 | 1.696E+02 |
| **ru101** | 1.168E+03 | 1.168E+03 | 1.168E+03 | 1.168E+03 | 1.168E+03 |
| **ru102** | 1.347E+03 | 1.347E+03 | 1.347E+03 | 1.347E+03 | 1.347E+03 |
| **ru103** | 6.966E-01 | 3.553E-14 | 6.873E-15 | 1.090E-17 | 1.730E-20 |
| **ru104** | 1.275E+03 | 1.275E+03 | 1.275E+03 | 1.275E+03 | 1.275E+03 |
| **ru106** | 2.461E+02 | 9.723E+00 | 8.179E+00 | 4.140E+00 | 2.096E+00 |
| **s 32** | 5.794E-14 | 5.794E-14 | 5.794E-14 | 5.794E-14 | 5.794E-14 |
| **s 33** | 5.954E-14 | 5.954E-14 | 5.954E-14 | 5.954E-14 | 5.954E-14 |
| **s 34** | 6.168E-14 | 6.168E-14 | 6.168E-14 | 6.168E-14 | 6.168E-14 |
| **s 36** | 6.525E-14 | 6.525E-14 | 6.525E-14 | 6.525E-14 | 6.525E-14 |
| **sb121** | 8.894E+00 | 8.954E+00 | 8.954E+00 | 8.967E+00 | 8.981E+00 |
| **sb123** | 1.172E+01 | 1.181E+01 | 1.181E+01 | 1.181E+01 | 1.181E+01 |
| **sb124** | 4.124E-03 | 8.901E-12 | 3.051E-12 | 4.563E-14 | 6.827E-16 |
| **sb125** | 1.558E+01 | 4.728E+00 | 4.435E+00 | 3.450E+00 | 2.684E+00 |
| **sb126** | 9.630E-07 | 9.577E-07 | 9.577E-07 | 9.577E-07 | 9.577E-07 |
| **sb126m** | 7.370E-09 | 7.370E-09 | 7.370E-09 | 7.370E-09 | 7.370E-09 |
| **sc 45** | 7.907E-14 | 7.907E-14 | 7.907E-14 | 7.907E-14 | 7.907E-14 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sc 46** | 4.065E-17 | 2.415E-23 | 1.119E-23 | 5.464E-25 | 2.668E-26 |
| **se 74** | 4.360E-07 | 4.360E-07 | 4.360E-07 | 4.360E-07 | 4.360E-07 |
| **se 75** | 9.471E-09 | 4.183E-13 | 2.442E-13 | 2.955E-14 | 3.575E-15 |
| **se 76** | 8.868E-03 | 8.868E-03 | 8.868E-03 | 8.868E-03 | 8.868E-03 |
| **se 77** | 1.005E+00 | 1.005E+00 | 1.005E+00 | 1.005E+00 | 1.005E+00 |
| **se 78** | 2.857E+00 | 2.857E+00 | 2.857E+00 | 2.857E+00 | 2.857E+00 |
| **se 79** | 6.143E+00 | 6.143E+00 | 6.143E+00 | 6.143E+00 | 6.143E+00 |
| **se 80** | 1.404E+01 | 1.404E+01 | 1.404E+01 | 1.404E+01 | 1.404E+01 |
| **se 82** | 3.663E+01 | 3.663E+01 | 3.663E+01 | 3.663E+01 | 3.663E+01 |
| **si 28** | 5.077E-14 | 5.077E-14 | 5.077E-14 | 5.077E-14 | 5.077E-14 |
| **si 29** | 5.264E-14 | 5.264E-14 | 5.264E-14 | 5.264E-14 | 5.264E-14 |
| **si 30** | 5.469E-14 | 5.469E-14 | 5.469E-14 | 5.469E-14 | 5.469E-14 |
| **sm144** | 6.476E-11 | 6.476E-11 | 6.476E-11 | 6.476E-11 | 6.476E-11 |
| **sm145** | 3.547E-07 | 1.037E-08 | 8.570E-09 | 4.073E-09 | 1.935E-09 |
| **sm146** | 3.670E-03 | 3.745E-03 | 3.747E-03 | 3.758E-03 | 3.767E-03 |
| **sm147** | 1.279E+02 | 2.657E+02 | 2.693E+02 | 2.812E+02 | 2.904E+02 |
| **sm148** | 2.082E+02 | 2.082E+02 | 2.082E+02 | 2.082E+02 | 2.082E+02 |
| **sm149** | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 | 6.576E+00 |
| **sm150** | 4.358E+02 | 4.358E+02 | 4.358E+02 | 4.358E+02 | 4.358E+02 |
| **sm151** | 2.788E+01 | 2.688E+01 | 2.683E+01 | 2.662E+01 | 2.642E+01 |
| **sm152** | 1.681E+02 | 1.681E+02 | 1.681E+02 | 1.681E+02 | 1.681E+02 |
| **sm154** | 8.662E+01 | 8.662E+01 | 8.662E+01 | 8.662E+01 | 8.662E+01 |
| **sn112** | 3.639E-09 | 3.639E-09 | 3.639E-09 | 3.639E-09 | 3.639E-09 |
| **sn113** | 7.635E-11 | 2.240E-15 | 1.279E-15 | 1.420E-16 | 1.575E-17 |
| **sn114** | 1.858E-04 | 1.861E-04 | 1.861E-04 | 1.861E-04 | 1.861E-04 |
| **sn115** | 5.304E-01 | 5.304E-01 | 5.304E-01 | 5.304E-01 | 5.304E-01 |
| **sn116** | 4.348E+00 | 4.348E+00 | 4.348E+00 | 4.348E+00 | 4.348E+00 |
| **sn117** | 1.085E+01 | 1.085E+01 | 1.085E+01 | 1.085E+01 | 1.085E+01 |
| **sn117m** | 2.908E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn118** | 9.405E+00 | 9.405E+00 | 9.405E+00 | 9.405E+00 | 9.405E+00 |
| **sn119** | 8.974E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 |
| **sn119m** | 7.065E-02 | 1.171E-03 | 9.398E-04 | 3.962E-04 | 1.671E-04 |
| **sn120** | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 | 9.040E+00 |
| **sn121** | 4.422E-05 | 4.103E-05 | 4.087E-05 | 4.022E-05 | 3.959E-05 |
| **sn121m** | 8.112E-01 | 7.529E-01 | 7.496E-01 | 7.377E-01 | 7.264E-01 |
| **sn122** | 1.213E+01 | 1.213E+01 | 1.213E+01 | 1.213E+01 | 1.213E+01 |
| **sn123** | 8.583E-02 | 7.867E-06 | 4.777E-06 | 6.740E-07 | 9.511E-08 |
| **sn124** | 1.966E+01 | 1.966E+01 | 1.966E+01 | 1.966E+01 | 1.966E+01 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sn125** | 8.218E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 4.654E+01 | 4.654E+01 | 4.654E+01 | 4.654E+01 | 4.654E+01 |
| **sr 84** | 8.822E-06 | 8.822E-06 | 8.822E-06 | 8.822E-06 | 8.822E-06 |
| **sr 85** | 1.571E-08 | 1.414E-16 | 5.231E-17 | 1.056E-18 | 2.135E-20 |
| **sr 86** | 5.128E-01 | 5.128E-01 | 5.128E-01 | 5.128E-01 | 5.128E-01 |
| **sr 87** | 5.741E-03 | 5.741E-03 | 5.741E-03 | 5.741E-03 | 5.741E-03 |
| **sr 88** | 2.487E+02 | 2.487E+02 | 2.487E+02 | 2.487E+02 | 2.487E+02 |
| **sr 89** | 5.670E-01 | 2.687E-11 | 7.503E-12 | 5.020E-14 | 3.359E-16 |
| **sr 90** | 3.820E+02 | 3.408E+02 | 3.387E+02 | 3.307E+02 | 3.228E+02 |
| **ta180m** | 2.015E-17 | 2.015E-17 | 2.015E-17 | 2.015E-17 | 2.015E-17 |
| **ta181** | 1.815E-13 | 1.815E-13 | 1.815E-13 | 1.815E-13 | 1.815E-13 |
| **ta182** | 7.019E-16 | 1.996E-20 | 1.139E-20 | 1.288E-21 | 1.734E-22 |
| **tb157** | 9.113E-07 | 8.702E-07 | 8.682E-07 | 8.596E-07 | 8.510E-07 |
| **tb158** | 1.171E-04 | 1.150E-04 | 1.149E-04 | 1.145E-04 | 1.140E-04 |
| **tb159** | 7.489E+00 | 7.489E+00 | 7.489E+00 | 7.489E+00 | 7.489E+00 |
| **tb160** | 1.879E-02 | 1.144E-09 | 4.689E-10 | 1.417E-11 | 4.282E-13 |
| **tb161** | 7.914E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 6.188E-18 | 1.734E-26 | 6.029E-27 | 9.531E-29 | 0.000E+00 |
| **tc 95m** | 1.151E-14 | 3.228E-23 | 1.122E-23 | 1.773E-25 | 2.802E-27 |
| **tc 97** | 1.145E-05 | 1.155E-05 | 1.155E-05 | 1.155E-05 | 1.155E-05 |
| **tc 97m** | 1.043E-07 | 1.929E-13 | 9.498E-14 | 5.892E-15 | 3.655E-16 |
| **tc 98** | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 | 1.180E-02 |
| **tc 99** | 1.078E+03 | 1.078E+03 | 1.078E+03 | 1.078E+03 | 1.078E+03 |
| **te120** | 2.598E-09 | 2.598E-09 | 2.598E-09 | 2.598E-09 | 2.598E-09 |
| **te121** | 3.472E-08 | 2.309E-11 | 1.559E-11 | 3.340E-12 | 7.151E-13 |
| **te121m** | 2.964E-07 | 1.971E-10 | 1.332E-10 | 2.851E-11 | 6.108E-12 |
| **te122** | 7.894E-01 | 7.894E-01 | 7.894E-01 | 7.894E-01 | 7.894E-01 |
| **te123** | 9.670E-03 | 1.012E-02 | 1.012E-02 | 1.012E-02 | 1.012E-02 |
| **te123m** | 4.543E-04 | 1.909E-08 | 1.111E-08 | 1.331E-09 | 1.593E-10 |
| **te124** | 5.658E-01 | 5.700E-01 | 5.700E-01 | 5.700E-01 | 5.700E-01 |
| **te125** | 1.084E+01 | 2.185E+01 | 2.214E+01 | 2.314E+01 | 2.391E+01 |
| **te125m** | 2.163E-01 | 6.596E-02 | 6.187E-02 | 4.813E-02 | 3.745E-02 |
| **te126** | 1.127E+00 | 1.127E+00 | 1.127E+00 | 1.127E+00 | 1.127E+00 |
| **te127** | 1.045E-03 | 1.709E-08 | 9.464E-09 | 9.292E-10 | 9.120E-11 |
| **te127m** | 2.984E-01 | 4.883E-06 | 2.703E-06 | 2.653E-07 | 2.605E-08 |
| **te128** | 1.797E+02 | 1.797E+02 | 1.797E+02 | 1.797E+02 | 1.797E+02 |
| **te129** | 7.960E-06 | 2.367E-21 | 3.476E-22 | 1.866E-25 | 1.002E-28 |
| **te129m** | 8.768E-03 | 2.609E-18 | 3.830E-19 | 2.056E-22 | 1.104E-25 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **te130** | 5.991E+02 | 5.991E+02 | 5.991E+02 | 5.991E+02 | 5.991E+02 |
| **th227** | 1.622E-12 | 7.244E-12 | 7.450E-12 | 8.735E-12 | 9.935E-12 |
| **th228** | 3.295E-06 | 2.041E-05 | 2.114E-05 | 2.376E-05 | 2.593E-05 |
| **th229** | 3.201E-07 | 3.329E-07 | 3.338E-07 | 3.373E-07 | 3.411E-07 |
| **th230** | 8.782E-05 | 2.861E-04 | 2.998E-04 | 3.560E-04 | 4.169E-04 |
| **th231** | 3.920E-09 | 3.929E-09 | 3.929E-09 | 3.931E-09 | 3.933E-09 |
| **th232** | 2.003E-04 | 2.411E-04 | 2.434E-04 | 2.521E-04 | 2.608E-04 |
| **th234** | 1.331E-05 | 1.331E-05 | 1.331E-05 | 1.331E-05 | 1.331E-05 |
| **ti 46** | 8.590E-14 | 8.596E-14 | 8.596E-14 | 8.596E-14 | 8.596E-14 |
| **ti 47** | 8.510E-14 | 8.510E-14 | 8.510E-14 | 8.510E-14 | 8.510E-14 |
| **ti 48** | 8.649E-14 | 8.649E-14 | 8.649E-14 | 8.649E-14 | 8.649E-14 |
| **ti 49** | 8.961E-14 | 8.961E-14 | 8.961E-14 | 8.961E-14 | 8.961E-14 |
| **ti 50** | 9.087E-14 | 9.087E-14 | 9.087E-14 | 9.087E-14 | 9.087E-14 |
| **tl203** | 2.776E-15 | 2.781E-15 | 2.781E-15 | 2.781E-15 | 2.781E-15 |
| **tl204** | 5.336E-17 | 2.237E-17 | 2.135E-17 | 1.778E-17 | 1.481E-17 |
| **tl205** | 1.325E-15 | 1.325E-15 | 1.325E-15 | 1.325E-15 | 1.325E-15 |
| **tl207** | 2.591E-16 | 1.184E-15 | 1.210E-15 | 1.428E-15 | 1.624E-15 |
| **tl208** | 3.235E-12 | 2.039E-11 | 2.115E-11 | 2.373E-11 | 2.590E-11 |
| **tm168** | 1.055E-09 | 2.630E-15 | 1.316E-15 | 8.689E-17 | 5.738E-18 |
| **tm169** | 1.017E-03 | 1.017E-03 | 1.017E-03 | 1.017E-03 | 1.017E-03 |
| **tm170** | 5.542E-05 | 4.864E-09 | 2.947E-09 | 4.120E-10 | 5.761E-11 |
| **tm171** | 1.748E-04 | 3.152E-05 | 2.876E-05 | 2.005E-05 | 1.398E-05 |
| **u230** | 2.977E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 4.383E-04 | 1.049E-03 | 1.064E-03 | 1.113E-03 | 1.149E-03 |
| **u233** | 4.875E-04 | 7.841E-04 | 7.993E-04 | 8.662E-04 | 9.338E-04 |
| **u234** | 1.111E+01 | 1.904E+01 | 1.947E+01 | 2.112E+01 | 2.276E+01 |
| **u235** | 9.643E+02 | 9.663E+02 | 9.663E+02 | 9.670E+02 | 9.670E+02 |
| **u236** | 2.935E+02 | 2.984E+02 | 2.986E+02 | 2.997E+02 | 3.007E+02 |
| **u237** | 1.620E-04 | 1.287E-04 | 1.272E-04 | 1.212E-04 | 1.154E-04 |
| **u238** | 9.166E+05 | 9.166E+05 | 9.166E+05 | 9.166E+05 | 9.166E+05 |
| **u240** | 2.188E-12 | 2.188E-12 | 2.188E-12 | 2.188E-12 | 2.188E-12 |
| **v 50** | 5.799E-17 | 5.799E-17 | 5.799E-17 | 5.799E-17 | 5.799E-17 |
| **v 51** | 1.786E-15 | 1.786E-15 | 1.786E-15 | 1.786E-15 | 1.786E-15 |
| **w182** | 2.812E-13 | 2.819E-13 | 2.819E-13 | 2.819E-13 | 2.819E-13 |
| **w183** | 6.473E-13 | 6.473E-13 | 6.473E-13 | 6.473E-13 | 6.473E-13 |
| **w184** | 5.571E-13 | 5.571E-13 | 5.571E-13 | 5.571E-13 | 5.571E-13 |
| **w185** | 1.169E-16 | 1.322E-23 | 5.602E-24 | 1.929E-25 | 6.641E-27 |
| **w186** | 2.135E-13 | 2.135E-13 | 2.135E-13 | 2.135E-13 | 2.135E-13 |

| Table C-4. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **xe124** | 2.367E-13 | 2.367E-13 | 2.367E-13 | 2.367E-13 | 2.367E-13 |
| **xe126** | 3.735E-04 | 3.735E-04 | 3.735E-04 | 3.735E-04 | 3.735E-04 |
| **xe127** | 5.583E-08 | 2.599E-22 | 4.422E-23 | 4.237E-26 | 4.059E-29 |
| **xe128** | 8.477E+00 | 8.477E+00 | 8.477E+00 | 8.477E+00 | 8.477E+00 |
| **xe129** | 5.492E-02 | 5.498E-02 | 5.498E-02 | 5.500E-02 | 5.501E-02 |
| **xe129m** | 2.841E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe130** | 1.093E+01 | 1.093E+01 | 1.093E+01 | 1.093E+01 | 1.093E+01 |
| **xe131** | 6.853E+02 | 6.853E+02 | 6.853E+02 | 6.853E+02 | 6.853E+02 |
| **xe131m** | 1.047E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe132** | 1.709E+03 | 1.709E+03 | 1.709E+03 | 1.709E+03 | 1.709E+03 |
| **xe133** | 1.066E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe134** | 2.092E+03 | 2.092E+03 | 2.092E+03 | 2.092E+03 | 2.092E+03 |
| **xe136** | 3.112E+03 | 3.112E+03 | 3.112E+03 | 3.112E+03 | 3.112E+03 |
| **y 88** | 2.979E-05 | 3.816E-10 | 2.084E-10 | 1.943E-11 | 1.812E-12 |
| **y 89** | 3.271E+02 | 3.277E+02 | 3.277E+02 | 3.277E+02 | 3.277E+02 |
| **y 89m** | 1.961E-10 | 9.292E-21 | 2.595E-21 | 1.736E-23 | 1.162E-25 |
| **y 90** | 9.690E-02 | 8.643E-02 | 8.590E-02 | 8.391E-02 | 8.185E-02 |
| **y 91** | 1.589E+00 | 1.927E-09 | 6.401E-10 | 8.477E-12 | 1.123E-13 |
| **yb168** | 2.158E-12 | 2.263E-12 | 2.263E-12 | 2.263E-12 | 2.263E-12 |
| **yb169** | 3.487E-12 | 1.774E-28 | 2.368E-29 | 8.762E-33 | 0.000E+00 |
| **yb170** | 6.999E-04 | 7.556E-04 | 7.556E-04 | 7.556E-04 | 7.556E-04 |
| **yb171** | 2.157E-04 | 3.590E-04 | 3.618E-04 | 3.705E-04 | 3.766E-04 |
| **yb172** | 4.384E-04 | 4.384E-04 | 4.384E-04 | 4.384E-04 | 4.384E-04 |
| **yb176** | 1.145E-16 | 1.145E-16 | 1.145E-16 | 1.145E-16 | 1.145E-16 |
| **zn 64** | 4.177E-16 | 4.177E-16 | 4.177E-16 | 4.177E-16 | 4.177E-16 |
| **zn 66** | 1.489E-04 | 1.489E-04 | 1.489E-04 | 1.489E-04 | 1.489E-04 |
| **zn 67** | 4.158E-04 | 4.158E-04 | 4.158E-04 | 4.158E-04 | 4.158E-04 |
| **zn 68** | 8.324E-04 | 8.324E-04 | 8.324E-04 | 8.324E-04 | 8.324E-04 |
| **zn 70** | 4.106E-03 | 4.106E-03 | 4.106E-03 | 4.106E-03 | 4.106E-03 |
| **zr 88** | 7.138E-12 | 3.967E-18 | 1.831E-18 | 8.815E-20 | 4.244E-21 |
| **zr 90** | 2.124E+01 | 6.249E+01 | 6.457E+01 | 7.264E+01 | 8.053E+01 |
| **zr 91** | 4.771E+02 | 4.787E+02 | 4.787E+02 | 4.787E+02 | 4.787E+02 |
| **zr 92** | 5.797E+02 | 5.797E+02 | 5.797E+02 | 5.797E+02 | 5.797E+02 |
| **zr 93** | 7.171E+02 | 7.171E+02 | 7.171E+02 | 7.171E+02 | 7.171E+02 |
| **zr 94** | 8.238E+02 | 8.238E+02 | 8.238E+02 | 8.238E+02 | 8.238E+02 |
| **zr 95** | 4.359E+00 | 3.105E-08 | 1.135E-08 | 2.182E-10 | 4.197E-12 |
| **zr 96** | 9.610E+02 | 9.610E+02 | 9.610E+02 | 9.610E+02 | 9.610E+02 |
| **Total** | **1.1343E+06** | **1.1343E+06** | **1.1343E+06** | **1.1343E+06** | **1.1343E+06** |

**Table C-5. MOX Fuel Rod K5 (high Pu): Nuclide mass in grams per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 7.679E-13 | 8.117E-13 | 8.137E-13 | 8.263E-13 | 8.396E-13 |
| **ac227** | 7.620E-10 | 3.238E-09 | 3.375E-09 | 3.915E-09 | 4.462E-09 |
| **ag105** | 6.982E-15 | 1.619E-27 | 3.398E-28 | 7.414E-31 | 1.618E-33 |
| **ag107** | 1.295E-04 | 4.242E-04 | 4.400E-04 | 5.020E-04 | 5.641E-04 |
| **ag108** | 5.547E-13 | 5.506E-13 | 5.503E-13 | 5.494E-13 | 5.486E-13 |
| **ag108m** | 6.166E-04 | 6.120E-04 | 6.118E-04 | 6.108E-04 | 6.098E-04 |
| **ag109** | 2.052E+02 | 2.052E+02 | 2.052E+02 | 2.052E+02 | 2.052E+02 |
| **ag109m** | 1.476E-10 | 1.092E-11 | 9.498E-12 | 5.489E-12 | 3.172E-12 |
| **ag110** | 1.843E-08 | 1.502E-10 | 1.160E-10 | 4.213E-11 | 1.530E-11 |
| **ag110m** | 1.188E+00 | 9.684E-03 | 7.480E-03 | 2.717E-03 | 9.870E-04 |
| **ag111** | 1.570E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **al 27** | 4.901E-14 | 4.901E-14 | 4.901E-14 | 4.901E-14 | 4.901E-14 |
| **am241** | 4.091E+02 | 1.421E+03 | 1.469E+03 | 1.650E+03 | 1.823E+03 |
| **am242** | 5.285E-05 | 5.164E-05 | 5.157E-05 | 5.132E-05 | 5.107E-05 |
| **am242m** | 4.097E+00 | 4.002E+00 | 3.997E+00 | 3.978E+00 | 3.958E+00 |
| **am243** | 2.719E+02 | 2.718E+02 | 2.718E+02 | 2.717E+02 | 2.717E+02 |
| **am244** | 6.989E-16 | 4.849E-16 | 4.754E-16 | 4.402E-16 | 4.075E-16 |
| **am245** | 8.854E-15 | 2.075E-16 | 1.696E-16 | 7.693E-17 | 3.489E-17 |
| **ar 36** | 6.487E-14 | 6.487E-14 | 6.487E-14 | 6.487E-14 | 6.487E-14 |
| **ar 38** | 6.896E-14 | 6.896E-14 | 6.896E-14 | 6.896E-14 | 6.896E-14 |
| **ar 39** | 1.075E-16 | 1.062E-16 | 1.061E-16 | 1.059E-16 | 1.055E-16 |
| **ar 40** | 7.288E-14 | 7.288E-14 | 7.288E-14 | 7.288E-14 | 7.288E-14 |
| **as 73** | 1.553E-10 | 4.949E-17 | 2.218E-17 | 9.498E-19 | 4.066E-20 |
| **as 74** | 1.663E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **as 75** | 1.669E-01 | 1.669E-01 | 1.669E-01 | 1.669E-01 | 1.669E-01 |
| **au197** | 2.654E-13 | 2.654E-13 | 2.654E-13 | 2.654E-13 | 2.654E-13 |
| **b 10** | 4.441E-11 | 2.345E-10 | 2.447E-10 | 2.847E-10 | 3.248E-10 |
| **b 11** | 4.939E-08 | 4.939E-08 | 4.939E-08 | 4.939E-08 | 4.939E-08 |
| **ba130** | 1.971E-13 | 1.971E-13 | 1.971E-13 | 1.971E-13 | 1.971E-13 |
| **ba131** | 3.151E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba132** | 2.433E-04 | 2.433E-04 | 2.433E-04 | 2.433E-04 | 2.433E-04 |
| **ba133** | 1.285E-04 | 9.398E-05 | 9.239E-05 | 8.655E-05 | 8.104E-05 |
| **ba134** | 8.682E+01 | 1.853E+02 | 1.874E+02 | 1.939E+02 | 1.987E+02 |
| **ba135** | 3.224E-01 | 3.236E-01 | 3.236E-01 | 3.239E-01 | 3.241E-01 |
| **ba136** | 4.354E+01 | 4.354E+01 | 4.354E+01 | 4.354E+01 | 4.354E+01 |
| **ba136m** | 3.235E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137** | 7.633E+01 | 2.309E+02 | 2.387E+02 | 2.690E+02 | 2.986E+02 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ba137m** | 2.280E-04 | 2.044E-04 | 2.032E-04 | 1.986E-04 | 1.941E-04 |
| **ba138** | 1.485E+03 | 1.485E+03 | 1.485E+03 | 1.485E+03 | 1.485E+03 |
| **ba140** | 1.458E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 9** | 1.945E-06 | 1.945E-06 | 1.945E-06 | 1.945E-06 | 1.945E-06 |
| **be 10** | 8.728E-05 | 8.728E-05 | 8.728E-05 | 8.728E-05 | 8.728E-05 |
| **bi208** | 6.416E-16 | 6.416E-16 | 6.416E-16 | 6.416E-16 | 6.416E-16 |
| **bi209** | 6.509E-11 | 1.530E-10 | 1.579E-10 | 1.771E-10 | 1.967E-10 |
| **bi210** | 2.808E-14 | 2.964E-14 | 3.002E-14 | 3.193E-14 | 3.456E-14 |
| **bi210m** | 8.509E-16 | 8.509E-16 | 8.509E-16 | 8.509E-16 | 8.509E-16 |
| **bi211** | 1.231E-16 | 5.638E-16 | 5.759E-16 | 6.816E-16 | 7.766E-16 |
| **bi212** | 1.341E-10 | 8.735E-10 | 9.067E-10 | 1.018E-09 | 1.112E-09 |
| **bi213** | 2.302E-15 | 2.433E-15 | 2.438E-15 | 2.478E-15 | 2.516E-15 |
| **bk247** | 1.312E-13 | 1.309E-13 | 1.309E-13 | 1.308E-13 | 1.308E-13 |
| **bk248** | 5.544E-12 | 3.846E-12 | 3.771E-12 | 3.492E-12 | 3.233E-12 |
| **bk249** | 2.325E-06 | 5.447E-08 | 4.453E-08 | 2.020E-08 | 9.159E-09 |
| **bk250** | 4.029E-16 | 5.259E-18 | 4.182E-18 | 1.728E-18 | 7.474E-19 |
| **br 79** | 2.961E-03 | 3.021E-03 | 3.024E-03 | 3.037E-03 | 3.050E-03 |
| **br 81** | 2.275E+01 | 2.275E+01 | 2.275E+01 | 2.275E+01 | 2.275E+01 |
| **c 12** | 6.443E-02 | 6.443E-02 | 6.443E-02 | 6.443E-02 | 6.443E-02 |
| **c 13** | 1.021E+01 | 1.021E+01 | 1.021E+01 | 1.021E+01 | 1.021E+01 |
| **c 14** | 3.053E-04 | 3.051E-04 | 3.051E-04 | 3.051E-04 | 3.050E-04 |
| **ca 40** | 7.248E-14 | 7.248E-14 | 7.248E-14 | 7.248E-14 | 7.248E-14 |
| **ca 41** | 3.343E-17 | 3.343E-17 | 3.343E-17 | 3.343E-17 | 3.343E-17 |
| **ca 42** | 7.640E-14 | 7.640E-14 | 7.640E-14 | 7.640E-14 | 7.640E-14 |
| **ca 43** | 7.719E-14 | 7.719E-14 | 7.719E-14 | 7.719E-14 | 7.719E-14 |
| **ca 44** | 8.078E-14 | 8.078E-14 | 8.078E-14 | 8.078E-14 | 8.078E-14 |
| **ca 46** | 8.343E-14 | 8.343E-14 | 8.343E-14 | 8.343E-14 | 8.343E-14 |
| **ca 48** | 8.708E-14 | 8.708E-14 | 8.708E-14 | 8.708E-14 | 8.708E-14 |
| **cd106** | 2.653E-13 | 2.653E-13 | 2.653E-13 | 2.653E-13 | 2.653E-13 |
| **cd108** | 1.207E-03 | 1.207E-03 | 1.208E-03 | 1.208E-03 | 1.208E-03 |
| **cd109** | 1.485E-04 | 1.100E-05 | 9.564E-06 | 5.526E-06 | 3.193E-06 |
| **cd110** | 1.146E+02 | 1.158E+02 | 1.158E+02 | 1.158E+02 | 1.158E+02 |
| **cd111** | 6.118E+01 | 6.118E+01 | 6.118E+01 | 6.118E+01 | 6.118E+01 |
| **cd112** | 2.879E+01 | 2.879E+01 | 2.879E+01 | 2.879E+01 | 2.879E+01 |
| **cd113** | 4.198E-01 | 4.198E-01 | 4.198E-01 | 4.198E-01 | 4.198E-01 |
| **cd113m** | 5.719E-03 | 4.529E-03 | 4.473E-03 | 4.258E-03 | 4.054E-03 |
| **cd114** | 3.100E+01 | 3.100E+01 | 3.100E+01 | 3.100E+01 | 3.100E+01 |
| **cd115m** | 6.586E-04 | 1.292E-15 | 3.040E-16 | 1.040E-18 | 3.558E-21 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cd116** | 1.056E+01 | 1.056E+01 | 1.056E+01 | 1.056E+01 | 1.056E+01 |
| **ce136** | 2.310E-13 | 2.310E-13 | 2.310E-13 | 2.310E-13 | 2.310E-13 |
| **ce138** | 8.761E-06 | 8.761E-06 | 8.761E-06 | 8.761E-06 | 8.761E-06 |
| **ce139** | 1.262E-03 | 2.046E-07 | 1.281E-07 | 2.038E-08 | 3.242E-09 |
| **ce140** | 1.405E+03 | 1.405E+03 | 1.405E+03 | 1.405E+03 | 1.405E+03 |
| **ce141** | 2.164E-01 | 1.937E-17 | 2.667E-18 | 1.112E-21 | 4.635E-25 |
| **ce142** | 1.225E+03 | 1.225E+03 | 1.225E+03 | 1.225E+03 | 1.225E+03 |
| **ce144** | 1.908E+02 | 2.814E+00 | 2.244E+00 | 9.232E-01 | 3.800E-01 |
| **cf248** | 3.467E-12 | 9.458E-14 | 7.792E-14 | 3.650E-14 | 1.709E-14 |
| **cf249** | 2.467E-06 | 4.699E-06 | 4.706E-06 | 4.721E-06 | 4.723E-06 |
| **cf250** | 1.045E-06 | 8.131E-07 | 8.018E-07 | 7.606E-07 | 7.215E-07 |
| **cf251** | 4.843E-07 | 4.825E-07 | 4.823E-07 | 4.820E-07 | 4.816E-07 |
| **cf252** | 1.206E-07 | 3.479E-08 | 3.254E-08 | 2.504E-08 | 1.927E-08 |
| **cf253** | 6.211E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 2.666E-13 | 6.351E-22 | 2.188E-22 | 3.341E-24 | 5.103E-26 |
| **cl 35** | 6.102E-14 | 6.102E-14 | 6.102E-14 | 6.102E-14 | 6.102E-14 |
| **cl 36** | 2.729E-15 | 2.729E-15 | 2.729E-15 | 2.729E-15 | 2.729E-15 |
| **cl 37** | 6.763E-14 | 6.763E-14 | 6.763E-14 | 6.763E-14 | 6.763E-14 |
| **cm240** | 1.432E-11 | 6.823E-31 | 6.268E-32 | 0.000E+00 | 0.000E+00 |
| **cm241** | 2.085E-08 | 2.595E-24 | 3.635E-25 | 1.624E-28 | 7.255E-32 |
| **cm242** | 1.798E+01 | 2.173E-02 | 1.803E-02 | 1.199E-02 | 1.067E-02 |
| **cm243** | 1.361E+00 | 1.215E+00 | 1.208E+00 | 1.179E+00 | 1.152E+00 |
| **cm244** | 8.914E+01 | 7.434E+01 | 7.361E+01 | 7.089E+01 | 6.823E+01 |
| **cm245** | 7.460E+00 | 7.460E+00 | 7.460E+00 | 7.460E+00 | 7.454E+00 |
| **cm246** | 3.981E-01 | 3.978E-01 | 3.978E-01 | 3.978E-01 | 3.977E-01 |
| **cm247** | 5.214E-03 | 5.214E-03 | 5.214E-03 | 5.214E-03 | 5.214E-03 |
| **cm248** | 2.829E-04 | 2.830E-04 | 2.830E-04 | 2.830E-04 | 2.830E-04 |
| **cm250** | 2.696E-11 | 2.695E-11 | 2.695E-11 | 2.695E-11 | 2.695E-11 |
| **co 59** | 1.071E-13 | 1.071E-13 | 1.071E-13 | 1.071E-13 | 1.071E-13 |
| **co 60** | 8.277E-15 | 4.435E-15 | 4.289E-15 | 3.761E-15 | 3.297E-15 |
| **cr 50** | 8.927E-14 | 8.927E-14 | 8.927E-14 | 8.927E-14 | 8.927E-14 |
| **cr 52** | 9.432E-14 | 9.432E-14 | 9.432E-14 | 9.432E-14 | 9.432E-14 |
| **cr 53** | 9.458E-14 | 9.458E-14 | 9.458E-14 | 9.458E-14 | 9.458E-14 |
| **cr 54** | 9.982E-14 | 9.982E-14 | 9.982E-14 | 9.982E-14 | 9.982E-14 |
| **cs131** | 1.659E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 1.409E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs133** | 2.182E-17 | 2.231E-17 | 2.233E-17 | 2.241E-17 | 2.249E-17 |
| **cs133** | 1.402E+03 | 1.402E+03 | 1.402E+03 | 1.402E+03 | 1.402E+03 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cs134** | 1.237E+02 | 2.515E+01 | 2.309E+01 | 1.651E+01 | 1.181E+01 |
| **cs135** | 8.403E+02 | 8.403E+02 | 8.403E+02 | 8.403E+02 | 8.403E+02 |
| **cs136** | 1.077E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.493E+03 | 1.338E+03 | 1.330E+03 | 1.300E+03 | 1.270E+03 |
| **cu 63** | 1.135E-13 | 1.136E-13 | 1.136E-13 | 1.136E-13 | 1.136E-13 |
| **cu 65** | 1.951E-16 | 1.953E-16 | 1.953E-16 | 1.953E-16 | 1.953E-16 |
| **cu 65** | 3.729E-07 | 3.729E-07 | 3.729E-07 | 3.729E-07 | 3.729E-07 |
| **dy156** | 3.076E-12 | 3.076E-12 | 3.076E-12 | 3.076E-12 | 3.076E-12 |
| **dy158** | 1.164E-07 | 4.003E-07 | 4.154E-07 | 4.745E-07 | 5.333E-07 |
| **dy159** | 2.131E-07 | 5.197E-11 | 3.326E-11 | 5.767E-12 | 1.000E-12 |
| **dy160** | 7.201E-01 | 7.341E-01 | 7.341E-01 | 7.341E-01 | 7.341E-01 |
| **dy161** | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 | 1.102E+00 |
| **dy162** | 6.664E-01 | 6.664E-01 | 6.664E-01 | 6.664E-01 | 6.664E-01 |
| **dy163** | 5.379E-01 | 5.379E-01 | 5.379E-01 | 5.379E-01 | 5.379E-01 |
| **dy164** | 2.160E-01 | 2.160E-01 | 2.160E-01 | 2.160E-01 | 2.160E-01 |
| **er162** | 3.549E-12 | 3.549E-12 | 3.549E-12 | 3.549E-12 | 3.549E-12 |
| **er164** | 2.222E-06 | 2.222E-06 | 2.222E-06 | 2.222E-06 | 2.222E-06 |
| **er166** | 5.790E-02 | 5.790E-02 | 5.790E-02 | 5.790E-02 | 5.790E-02 |
| **er167** | 3.371E-03 | 3.371E-03 | 3.371E-03 | 3.371E-03 | 3.371E-03 |
| **er168** | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 | 1.008E-02 |
| **er169** | 9.724E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **er170** | 5.459E-04 | 5.459E-04 | 5.459E-04 | 5.459E-04 | 5.459E-04 |
| **es252** | 2.406E-16 | 1.885E-17 | 1.644E-17 | 9.617E-18 | 5.623E-18 |
| **es253** | 1.495E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 8.429E-13 | 1.080E-14 | 8.549E-15 | 3.415E-15 | 1.364E-15 |
| **es255** | 1.219E-15 | 9.505E-29 | 1.882E-29 | 3.266E-32 | 0.000E+00 |
| **eu147** | 2.448E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 8.197E-11 | 2.042E-16 | 1.021E-16 | 6.750E-18 | 4.456E-19 |
| **eu151** | 2.105E-01 | 1.223E+00 | 1.276E+00 | 1.484E+00 | 1.691E+00 |
| **eu152** | 4.898E-02 | 3.842E-02 | 3.792E-02 | 3.603E-02 | 3.424E-02 |
| **eu153** | 1.870E+02 | 1.870E+02 | 1.870E+02 | 1.870E+02 | 1.870E+02 |
| **eu154** | 5.042E+01 | 3.440E+01 | 3.370E+01 | 3.110E+01 | 2.869E+01 |
| **eu155** | 1.231E+01 | 6.164E+00 | 5.939E+00 | 5.134E+00 | 4.438E+00 |
| **eu156** | 3.184E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **f 19** | 6.790E-14 | 6.790E-14 | 6.790E-14 | 6.790E-14 | 6.790E-14 |
| **fe 54** | 9.770E-14 | 9.770E-14 | 9.770E-14 | 9.770E-14 | 9.770E-14 |
| **fe 55** | 1.567E-16 | 4.726E-17 | 4.432E-17 | 3.443E-17 | 2.675E-17 |
| **fe 56** | 1.059E-13 | 1.059E-13 | 1.059E-13 | 1.059E-13 | 1.059E-13 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **fe 57** | 1.035E-13 | 1.035E-13 | 1.035E-13 | 1.035E-13 | 1.035E-13 |
| **fe 58** | 3.064E-13 | 3.064E-13 | 3.064E-13 | 3.064E-13 | 3.064E-13 |
| **fr221** | 2.567E-16 | 2.713E-16 | 2.719E-16 | 2.763E-16 | 2.806E-16 |
| **ga 69** | 1.444E-03 | 1.444E-03 | 1.444E-03 | 1.444E-03 | 1.444E-03 |
| **ga 71** | 6.572E-03 | 6.572E-03 | 6.572E-03 | 6.572E-03 | 6.572E-03 |
| **gd151** | 8.582E-08 | 5.326E-12 | 3.167E-12 | 4.117E-13 | 5.352E-14 |
| **gd152** | 8.814E-02 | 9.113E-02 | 9.126E-02 | 9.179E-02 | 9.226E-02 |
| **gd153** | 3.435E-03 | 2.322E-05 | 1.775E-05 | 6.199E-06 | 2.164E-06 |
| **gd154** | 7.082E+00 | 2.310E+01 | 2.380E+01 | 2.641E+01 | 2.881E+01 |
| **gd155** | 1.580E+00 | 7.732E+00 | 7.951E+00 | 8.761E+00 | 9.458E+00 |
| **gd156** | 1.226E+02 | 1.226E+02 | 1.226E+02 | 1.226E+02 | 1.226E+02 |
| **gd157** | 3.585E-01 | 3.585E-01 | 3.585E-01 | 3.585E-01 | 3.585E-01 |
| **gd158** | 3.977E+01 | 3.977E+01 | 3.977E+01 | 3.977E+01 | 3.977E+01 |
| **gd160** | 2.893E+00 | 2.893E+00 | 2.893E+00 | 2.893E+00 | 2.893E+00 |
| **ge 70** | 1.443E-05 | 1.443E-05 | 1.443E-05 | 1.443E-05 | 1.443E-05 |
| **ge 71** | 3.573E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 72** | 1.688E-02 | 1.688E-02 | 1.688E-02 | 1.688E-02 | 1.688E-02 |
| **ge 73** | 3.491E-02 | 3.491E-02 | 3.491E-02 | 3.491E-02 | 3.491E-02 |
| **ge 73m** | 1.117E-17 | 3.560E-24 | 1.595E-24 | 6.830E-26 | 2.924E-27 |
| **ge 74** | 8.303E-02 | 8.303E-02 | 8.303E-02 | 8.303E-02 | 8.303E-02 |
| **ge 76** | 3.735E-01 | 3.735E-01 | 3.735E-01 | 3.735E-01 | 3.735E-01 |
| **h1** | 5.405E-03 | 5.405E-03 | 5.405E-03 | 5.405E-03 | 5.405E-03 |
| **h2** | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 | 1.154E-03 |
| **h3** | 7.013E-02 | 5.368E-02 | 5.291E-02 | 5.002E-02 | 4.729E-02 |
| **he3** | 4.444E-03 | 2.087E-02 | 2.163E-02 | 2.452E-02 | 2.726E-02 |
| **he4** | 6.746E+00 | 7.641E+00 | 7.675E+00 | 7.812E+00 | 7.951E+00 |
| **hf174** | 1.673E-13 | 1.673E-13 | 1.673E-13 | 1.673E-13 | 1.673E-13 |
| **hf175** | 9.730E-16 | 3.430E-23 | 1.366E-23 | 3.679E-25 | 9.909E-27 |
| **hf176** | 3.297E-13 | 3.297E-13 | 3.297E-13 | 3.297E-13 | 3.297E-13 |
| **hf177** | 6.421E-14 | 6.422E-14 | 6.422E-14 | 6.422E-14 | 6.422E-14 |
| **hf178** | 3.956E-13 | 3.956E-13 | 3.956E-13 | 3.956E-13 | 3.956E-13 |
| **hf179** | 7.268E-13 | 7.268E-13 | 7.268E-13 | 7.268E-13 | 7.268E-13 |
| **hf180** | 5.382E-13 | 5.382E-13 | 5.382E-13 | 5.382E-13 | 5.382E-13 |
| **hf181** | 1.928E-17 | 9.511E-30 | 2.079E-30 | 5.318E-33 | 0.000E+00 |
| **hf182** | 6.916E-16 | 6.916E-16 | 6.916E-16 | 6.916E-16 | 6.916E-16 |
| **hg196** | 4.202E-14 | 4.202E-14 | 4.202E-14 | 4.202E-14 | 4.202E-14 |
| **hg198** | 6.457E-13 | 6.457E-13 | 6.457E-13 | 6.457E-13 | 6.457E-13 |
| **hg199** | 1.310E-13 | 1.310E-13 | 1.310E-13 | 1.310E-13 | 1.310E-13 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hg200** | 7.175E-13 | 7.175E-13 | 7.175E-13 | 7.175E-13 | 7.175E-13 |
| **hg201** | 3.541E-13 | 3.541E-13 | 3.541E-13 | 3.541E-13 | 3.541E-13 |
| **hg202** | 3.775E-13 | 3.775E-13 | 3.775E-13 | 3.775E-13 | 3.775E-13 |
| **hg204** | 3.692E-13 | 3.692E-13 | 3.692E-13 | 3.692E-13 | 3.692E-13 |
| **ho163** | 2.203E-07 | 2.202E-07 | 2.202E-07 | 2.201E-07 | 2.201E-07 |
| **ho165** | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 | 1.839E-01 |
| **ho166m** | 4.904E-04 | 4.890E-04 | 4.889E-04 | 4.886E-04 | 4.884E-04 |
| **i125** | 1.006E-09 | 1.659E-18 | 5.605E-19 | 7.918E-21 | 1.120E-22 |
| **i126** | 1.674E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i127** | 9.000E+01 | 9.027E+01 | 9.027E+01 | 9.027E+01 | 9.027E+01 |
| **i129** | 2.784E+02 | 2.784E+02 | 2.784E+02 | 2.784E+02 | 2.784E+02 |
| **i131** | 1.255E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113** | 9.830E-04 | 2.171E-03 | 2.227E-03 | 2.442E-03 | 2.646E-03 |
| **in113m** | 3.522E-14 | 1.033E-18 | 5.899E-19 | 6.547E-20 | 7.268E-21 |
| **in114** | 4.858E-12 | 1.410E-22 | 3.836E-23 | 2.316E-25 | 1.398E-27 |
| **in114m** | 2.987E-07 | 8.675E-18 | 2.359E-18 | 1.424E-20 | 8.595E-23 |
| **in115** | 3.497E+00 | 3.497E+00 | 3.497E+00 | 3.497E+00 | 3.497E+00 |
| **in115m** | 2.936E-10 | 5.756E-22 | 1.355E-22 | 4.635E-25 | 1.586E-27 |
| **ir191** | 1.881E-14 | 1.881E-14 | 1.881E-14 | 1.881E-14 | 1.881E-14 |
| **ir192** | 3.793E-16 | 3.255E-23 | 1.359E-23 | 4.416E-25 | 1.434E-26 |
| **ir193** | 1.966E-13 | 1.977E-13 | 1.978E-13 | 1.980E-13 | 1.982E-13 |
| **k 39** | 7.055E-14 | 7.055E-14 | 7.055E-14 | 7.055E-14 | 7.055E-14 |
| **k 40** | 7.036E-14 | 7.036E-14 | 7.036E-14 | 7.036E-14 | 7.036E-14 |
| **k 41** | 7.640E-14 | 7.640E-14 | 7.640E-14 | 7.640E-14 | 7.640E-14 |
| **kr 78** | 1.863E-13 | 1.863E-13 | 1.863E-13 | 1.863E-13 | 1.863E-13 |
| **kr 80** | 4.318E-04 | 4.318E-04 | 4.318E-04 | 4.318E-04 | 4.318E-04 |
| **kr 81** | 3.781E-05 | 3.781E-05 | 3.781E-05 | 3.781E-05 | 3.781E-05 |
| **kr 82** | 7.779E-01 | 7.779E-01 | 7.779E-01 | 7.779E-01 | 7.779E-01 |
| **kr 83** | 3.781E+01 | 3.781E+01 | 3.781E+01 | 3.781E+01 | 3.781E+01 |
| **kr 83m** | 4.779E-11 | 4.239E-17 | 2.006E-17 | 1.066E-18 | 5.664E-20 |
| **kr 84** | 8.137E+01 | 8.137E+01 | 8.137E+01 | 8.137E+01 | 8.137E+01 |
| **kr 85** | 1.722E+01 | 1.268E+01 | 1.248E+01 | 1.170E+01 | 1.097E+01 |
| **kr 86** | 1.233E+02 | 1.233E+02 | 1.233E+02 | 1.233E+02 | 1.233E+02 |
| **la137** | 1.465E-14 | 1.465E-14 | 1.465E-14 | 1.465E-14 | 1.465E-14 |
| **la137** | 4.947E-04 | 4.947E-04 | 4.947E-04 | 4.947E-04 | 4.947E-04 |
| **la138** | 1.191E-15 | 1.191E-15 | 1.191E-15 | 1.191E-15 | 1.191E-15 |
| **la138** | 2.416E-02 | 2.416E-02 | 2.416E-02 | 2.416E-02 | 2.416E-02 |
| **la139** | 1.316E-16 | 1.316E-16 | 1.316E-16 | 1.316E-16 | 1.316E-16 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **la139** | 1.377E+03 | 1.377E+03 | 1.377E+03 | 1.377E+03 | 1.377E+03 |
| **la140** | 2.214E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **li 6** | 1.882E-10 | 1.882E-10 | 1.882E-10 | 1.882E-10 | 1.882E-10 |
| **li 7** | 1.495E-11 | 1.495E-11 | 1.495E-11 | 1.495E-11 | 1.495E-11 |
| **lu175** | 3.054E-13 | 3.064E-13 | 3.064E-13 | 3.064E-13 | 3.064E-13 |
| **lu176** | 8.522E-15 | 8.522E-15 | 8.522E-15 | 8.522E-15 | 8.522E-15 |
| **mg 24** | 4.359E-14 | 4.359E-14 | 4.359E-14 | 4.359E-14 | 4.359E-14 |
| **mg 25** | 4.537E-14 | 4.537E-14 | 4.537E-14 | 4.537E-14 | 4.537E-14 |
| **mg 26** | 4.722E-14 | 4.722E-14 | 4.722E-14 | 4.722E-14 | 4.722E-14 |
| **mn 54** | 1.984E-17 | 4.224E-19 | 3.435E-19 | 1.527E-19 | 6.790E-20 |
| **mn 55** | 9.810E-14 | 9.823E-14 | 9.823E-14 | 9.823E-14 | 9.823E-14 |
| **mo 92** | 4.300E-12 | 4.300E-12 | 4.300E-12 | 4.300E-12 | 4.300E-12 |
| **mo 93** | 3.432E-07 | 3.429E-07 | 3.429E-07 | 3.428E-07 | 3.427E-07 |
| **mo 94** | 1.143E-02 | 1.144E-02 | 1.144E-02 | 1.144E-02 | 1.144E-02 |
| **mo 95** | 7.520E+02 | 7.606E+02 | 7.606E+02 | 7.606E+02 | 7.606E+02 |
| **mo 96** | 3.449E+01 | 3.449E+01 | 3.449E+01 | 3.449E+01 | 3.449E+01 |
| **mo 97** | 9.053E+02 | 9.053E+02 | 9.053E+02 | 9.053E+02 | 9.053E+02 |
| **mo 98** | 9.890E+02 | 9.890E+02 | 9.890E+02 | 9.890E+02 | 9.890E+02 |
| **mo100** | 1.167E+03 | 1.167E+03 | 1.167E+03 | 1.167E+03 | 1.167E+03 |
| **n 14** | 4.028E-06 | 4.203E-06 | 4.213E-06 | 4.250E-06 | 4.287E-06 |
| **n 15** | 9.511E-03 | 9.511E-03 | 9.511E-03 | 9.511E-03 | 9.511E-03 |
| **na 23** | 4.174E-14 | 4.174E-14 | 4.174E-14 | 4.174E-14 | 4.174E-14 |
| **nb 91** | 1.017E-08 | 1.013E-08 | 1.013E-08 | 1.012E-08 | 1.010E-08 |
| **nb 91m** | 5.989E-15 | 1.605E-23 | 5.565E-24 | 8.708E-26 | 1.363E-27 |
| **nb 92** | 8.887E-07 | 8.887E-07 | 8.887E-07 | 8.887E-07 | 8.887E-07 |
| **nb 92m** | 1.420E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93** | 1.009E-04 | 3.641E-04 | 3.841E-04 | 4.683E-04 | 5.607E-04 |
| **nb 93m** | 5.717E-04 | 1.645E-03 | 1.696E-03 | 1.894E-03 | 2.083E-03 |
| **nb 94** | 2.997E-03 | 2.997E-03 | 2.996E-03 | 2.996E-03 | 2.996E-03 |
| **nb 95** | 4.766E+00 | 3.587E-08 | 1.309E-08 | 2.595E-10 | 4.997E-12 |
| **nb 95m** | 2.691E-03 | 1.917E-11 | 7.002E-12 | 1.347E-13 | 2.591E-15 |
| **nd142** | 1.539E+01 | 1.539E+01 | 1.539E+01 | 1.539E+01 | 1.539E+01 |
| **nd143** | 9.525E+02 | 9.525E+02 | 9.525E+02 | 9.525E+02 | 9.525E+02 |
| **nd144** | 9.544E+02 | 1.142E+03 | 1.143E+03 | 1.144E+03 | 1.145E+03 |
| **nd145** | 7.042E+02 | 7.042E+02 | 7.042E+02 | 7.042E+02 | 7.042E+02 |
| **nd146** | 7.387E+02 | 7.387E+02 | 7.387E+02 | 7.387E+02 | 7.387E+02 |
| **nd147** | 4.976E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd148** | 4.432E+02 | 4.432E+02 | 4.432E+02 | 4.432E+02 | 4.432E+02 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **nd150** | 2.617E+02 | 2.617E+02 | 2.617E+02 | 2.617E+02 | 2.617E+02 |
| **ni 58** | 1.047E-13 | 1.047E-13 | 1.047E-13 | 1.047E-13 | 1.047E-13 |
| **ni 59** | 8.821E-14 | 8.821E-14 | 8.821E-14 | 8.821E-14 | 8.821E-14 |
| **ni 60** | 1.276E-13 | 1.314E-13 | 1.316E-13 | 1.321E-13 | 1.326E-13 |
| **ni 61** | 1.108E-13 | 1.108E-13 | 1.108E-13 | 1.108E-13 | 1.108E-13 |
| **ni 62** | 1.114E-13 | 1.114E-13 | 1.114E-13 | 1.114E-13 | 1.114E-13 |
| **ni 63** | 1.539E-15 | 1.490E-15 | 1.487E-15 | 1.477E-15 | 1.467E-15 |
| **ni 64** | 1.166E-13 | 1.166E-13 | 1.166E-13 | 1.166E-13 | 1.166E-13 |
| **np235** | 1.746E-06 | 8.423E-08 | 7.155E-08 | 3.778E-08 | 1.995E-08 |
| **np236** | 3.017E-04 | 3.017E-04 | 3.017E-04 | 3.017E-04 | 3.017E-04 |
| **np237** | 1.598E+02 | 1.667E+02 | 1.673E+02 | 1.698E+02 | 1.726E+02 |
| **np238** | 7.600E-07 | 7.427E-07 | 7.420E-07 | 7.381E-07 | 7.347E-07 |
| **np239** | 2.340E-04 | 2.340E-04 | 2.340E-04 | 2.340E-04 | 2.339E-04 |
| **np240** | 1.124E-16 | 1.124E-16 | 1.124E-16 | 1.124E-16 | 1.124E-16 |
| **np240m** | 1.092E-14 | 1.092E-14 | 1.092E-14 | 1.092E-14 | 1.092E-14 |
| **o 16** | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 | 1.344E+05 |
| **o 17** | 2.620E-02 | 2.620E-02 | 2.620E-02 | 2.620E-02 | 2.620E-02 |
| **o 18** | 8.482E-08 | 8.482E-08 | 8.482E-08 | 8.482E-08 | 8.482E-08 |
| **os186** | 2.052E-13 | 2.052E-13 | 2.052E-13 | 2.052E-13 | 2.052E-13 |
| **os187** | 2.715E-14 | 2.715E-14 | 2.715E-14 | 2.715E-14 | 2.715E-14 |
| **os188** | 1.101E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 | 1.102E-13 |
| **os189** | 6.269E-15 | 6.269E-15 | 6.269E-15 | 6.269E-15 | 6.269E-15 |
| **os190** | 1.366E-15 | 1.366E-15 | 1.366E-15 | 1.366E-15 | 1.366E-15 |
| **os192** | 9.823E-15 | 9.843E-15 | 9.843E-15 | 9.843E-15 | 9.843E-15 |
| **p 31** | 5.630E-14 | 5.630E-14 | 5.630E-14 | 5.630E-14 | 5.630E-14 |
| **pa230** | 1.039E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 2.553E-05 | 3.075E-05 | 3.104E-05 | 3.214E-05 | 3.324E-05 |
| **pa232** | 1.401E-14 | 1.401E-14 | 1.401E-14 | 1.401E-14 | 1.401E-14 |
| **pa233** | 5.408E-06 | 5.640E-06 | 5.659E-06 | 5.751E-06 | 5.843E-06 |
| **pa234** | 2.480E-10 | 2.481E-10 | 2.480E-10 | 2.480E-10 | 2.480E-10 |
| **pa234m** | 4.469E-10 | 4.470E-10 | 4.469E-10 | 4.469E-10 | 4.469E-10 |
| **pb204** | 3.694E-13 | 3.694E-13 | 3.694E-13 | 3.694E-13 | 3.694E-13 |
| **pb205** | 1.001E-15 | 1.001E-15 | 1.001E-15 | 1.001E-15 | 1.001E-15 |
| **pb206** | 1.627E-12 | 8.117E-12 | 8.482E-12 | 9.969E-12 | 1.156E-11 |
| **pb207** | 4.872E-11 | 3.185E-10 | 3.426E-10 | 4.474E-10 | 5.682E-10 |
| **pb208** | 6.114E-07 | 1.493E-05 | 1.626E-05 | 2.194E-05 | 2.824E-05 |
| **pb209** | 9.671E-15 | 1.022E-14 | 1.024E-14 | 1.041E-14 | 1.057E-14 |
| **pb210** | 4.540E-11 | 4.791E-11 | 4.854E-11 | 5.162E-11 | 5.588E-11 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pb211** | 2.075E-15 | 9.511E-15 | 9.717E-15 | 1.150E-14 | 1.310E-14 |
| **pb212** | 1.413E-09 | 9.206E-09 | 9.558E-09 | 1.074E-08 | 1.173E-08 |
| **pd102** | 7.786E-04 | 9.451E-04 | 9.458E-04 | 9.458E-04 | 9.458E-04 |
| **pd103** | 2.112E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd104** | 3.150E+02 | 3.150E+02 | 3.150E+02 | 3.150E+02 | 3.150E+02 |
| **pd105** | 9.133E+02 | 9.133E+02 | 9.133E+02 | 9.133E+02 | 9.133E+02 |
| **pd106** | 6.704E+02 | 8.814E+02 | 8.828E+02 | 8.861E+02 | 8.881E+02 |
| **pd107** | 5.824E+02 | 5.824E+02 | 5.824E+02 | 5.824E+02 | 5.824E+02 |
| **pd108** | 3.987E+02 | 3.987E+02 | 3.987E+02 | 3.987E+02 | 3.987E+02 |
| **pd110** | 1.292E+02 | 1.292E+02 | 1.292E+02 | 1.292E+02 | 1.292E+02 |
| **pm143** | 1.280E-12 | 1.376E-14 | 1.079E-14 | 4.153E-15 | 1.598E-15 |
| **pm144** | 3.946E-10 | 1.442E-11 | 1.207E-11 | 6.014E-12 | 2.995E-12 |
| **pm145** | 3.094E-05 | 2.594E-05 | 2.569E-05 | 2.470E-05 | 2.375E-05 |
| **pm146** | 4.588E-04 | 2.531E-04 | 2.452E-04 | 2.163E-04 | 1.909E-04 |
| **pm147** | 1.831E+02 | 5.228E+01 | 4.888E+01 | 3.753E+01 | 2.883E+01 |
| **pm148** | 2.167E-04 | 5.024E-17 | 1.055E-17 | 2.301E-20 | 5.022E-23 |
| **pm148m** | 3.453E-02 | 8.005E-15 | 1.680E-15 | 3.666E-18 | 7.998E-21 |
| **po210** | 6.677E-13 | 7.905E-13 | 7.985E-13 | 8.423E-13 | 9.033E-13 |
| **po216** | 5.451E-15 | 3.551E-14 | 3.686E-14 | 4.142E-14 | 4.525E-14 |
| **pr141** | 1.264E+03 | 1.264E+03 | 1.264E+03 | 1.264E+03 | 1.264E+03 |
| **pr143** | 3.317E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 8.031E-03 | 1.185E-04 | 9.451E-05 | 3.890E-05 | 1.601E-05 |
| **pr144m** | 3.196E-05 | 4.716E-07 | 3.761E-07 | 1.547E-07 | 6.367E-08 |
| **pt192** | 1.730E-13 | 1.734E-13 | 1.734E-13 | 1.734E-13 | 1.734E-13 |
| **pt193** | 1.784E-14 | 1.670E-14 | 1.665E-14 | 1.641E-14 | 1.619E-14 |
| **pt194** | 2.818E-13 | 2.818E-13 | 2.818E-13 | 2.818E-13 | 2.818E-13 |
| **pt195** | 1.890E-15 | 1.891E-15 | 1.891E-15 | 1.891E-15 | 1.891E-15 |
| **pt196** | 2.395E-16 | 2.395E-16 | 2.395E-16 | 2.395E-16 | 2.395E-16 |
| **pu236** | 7.454E-04 | 2.359E-04 | 2.218E-04 | 1.740E-04 | 1.366E-04 |
| **pu237** | 9.485E-06 | 3.520E-17 | 8.575E-18 | 3.355E-20 | 1.313E-22 |
| **pu238** | 1.571E+02 | 1.685E+02 | 1.681E+02 | 1.669E+02 | 1.655E+02 |
| **pu239** | 1.834E+04 | 1.834E+04 | 1.834E+04 | 1.834E+04 | 1.834E+04 |
| **pu240** | 9.863E+03 | 9.876E+03 | 9.876E+03 | 9.876E+03 | 9.876E+03 |
| **pu241** | 4.956E+03 | 3.937E+03 | 3.889E+03 | 3.705E+03 | 3.529E+03 |
| **pu242** | 1.164E+03 | 1.164E+03 | 1.164E+03 | 1.164E+03 | 1.164E+03 |
| **pu243** | 1.859E-13 | 1.859E-13 | 1.859E-13 | 1.859E-13 | 1.859E-13 |
| **pu244** | 6.570E-02 | 6.570E-02 | 6.570E-02 | 6.570E-02 | 6.570E-02 |
| **ra223** | 1.000E-12 | 4.582E-12 | 4.681E-12 | 5.539E-12 | 6.312E-12 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra224** | 1.233E-08 | 8.031E-08 | 8.336E-08 | 9.365E-08 | 1.023E-07 |
| **ra225** | 1.144E-12 | 1.209E-12 | 1.213E-12 | 1.232E-12 | 1.251E-12 |
| **ra226** | 1.594E-09 | 9.485E-09 | 1.016E-08 | 1.309E-08 | 1.651E-08 |
| **ra228** | 2.600E-14 | 4.945E-14 | 5.059E-14 | 5.496E-14 | 5.920E-14 |
| **rb 83** | 7.268E-08 | 6.447E-14 | 3.052E-14 | 1.621E-15 | 8.615E-17 |
| **rb 84** | 5.954E-08 | 7.573E-24 | 1.063E-24 | 4.769E-28 | 2.141E-31 |
| **rb 85** | 6.956E+01 | 7.407E+01 | 7.434E+01 | 7.507E+01 | 7.580E+01 |
| **rb 86** | 1.116E-06 | 1.114E-34 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.619E+02 | 1.619E+02 | 1.619E+02 | 1.619E+02 | 1.619E+02 |
| **re185** | 8.476E-14 | 8.482E-14 | 8.482E-14 | 8.482E-14 | 8.482E-14 |
| **re186m** | 2.123E-16 | 2.123E-16 | 2.123E-16 | 2.123E-16 | 2.123E-16 |
| **re187** | 3.581E-13 | 3.581E-13 | 3.581E-13 | 3.581E-13 | 3.581E-13 |
| **rh101** | 4.947E-07 | 1.826E-07 | 1.731E-07 | 1.403E-07 | 1.138E-07 |
| **rh102** | 7.593E-04 | 2.613E-06 | 1.982E-06 | 7.401E-07 | 3.471E-07 |
| **rh102m** | 1.753E-03 | 7.274E-04 | 6.943E-04 | 5.769E-04 | 4.794E-04 |
| **rh103** | 9.106E+02 | 9.113E+02 | 9.113E+02 | 9.113E+02 | 9.113E+02 |
| **rh103m** | 6.504E-04 | 3.317E-17 | 6.418E-18 | 1.018E-20 | 1.615E-23 |
| **rh106** | 2.056E-04 | 8.124E-06 | 6.830E-06 | 3.459E-06 | 1.752E-06 |
| **rn220** | 2.129E-12 | 1.387E-11 | 1.440E-11 | 1.618E-11 | 1.767E-11 |
| **rn222** | 1.016E-14 | 6.094E-14 | 6.528E-14 | 8.416E-14 | 1.061E-13 |
| **ru 96** | 1.730E-13 | 1.730E-13 | 1.730E-13 | 1.730E-13 | 1.730E-13 |
| **ru 98** | 1.355E-06 | 1.362E-06 | 1.363E-06 | 1.364E-06 | 1.365E-06 |
| **ru 99** | 3.943E-02 | 5.421E-02 | 5.500E-02 | 5.812E-02 | 6.123E-02 |
| **ru100** | 1.260E+02 | 1.260E+02 | 1.260E+02 | 1.260E+02 | 1.260E+02 |
| **ru101** | 1.016E+03 | 1.016E+03 | 1.016E+03 | 1.016E+03 | 1.016E+03 |
| **ru102** | 1.149E+03 | 1.149E+03 | 1.149E+03 | 1.149E+03 | 1.149E+03 |
| **ru103** | 6.621E-01 | 3.376E-14 | 6.534E-15 | 1.036E-17 | 1.644E-20 |
| **ru104** | 1.096E+03 | 1.096E+03 | 1.096E+03 | 1.096E+03 | 1.096E+03 |
| **ru106** | 2.196E+02 | 8.682E+00 | 7.294E+00 | 3.695E+00 | 1.871E+00 |
| **s 32** | 5.804E-14 | 5.804E-14 | 5.804E-14 | 5.804E-14 | 5.804E-14 |
| **s 33** | 5.967E-14 | 5.967E-14 | 5.967E-14 | 5.967E-14 | 5.967E-14 |
| **s 34** | 6.177E-14 | 6.177E-14 | 6.177E-14 | 6.177E-14 | 6.177E-14 |
| **s 36** | 6.535E-14 | 6.535E-14 | 6.535E-14 | 6.535E-14 | 6.535E-14 |
| **sb121** | 7.779E+00 | 7.832E+00 | 7.832E+00 | 7.845E+00 | 7.852E+00 |
| **sb123** | 1.019E+01 | 1.028E+01 | 1.028E+01 | 1.028E+01 | 1.028E+01 |
| **sb124** | 3.232E-03 | 6.976E-12 | 2.391E-12 | 3.575E-14 | 5.347E-16 |
| **sb125** | 1.387E+01 | 4.209E+00 | 3.948E+00 | 3.071E+00 | 2.389E+00 |
| **sb126** | 8.390E-07 | 8.343E-07 | 8.343E-07 | 8.343E-07 | 8.343E-07 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sb126m** | 6.419E-09 | 6.419E-09 | 6.419E-09 | 6.419E-09 | 6.419E-09 |
| **sc 45** | 7.965E-14 | 7.965E-14 | 7.965E-14 | 7.965E-14 | 7.965E-14 |
| **sc 46** | 3.576E-17 | 2.125E-23 | 9.843E-24 | 4.807E-25 | 2.347E-26 |
| **se 74** | 3.631E-07 | 3.631E-07 | 3.631E-07 | 3.631E-07 | 3.631E-07 |
| **se 75** | 7.049E-09 | 3.111E-13 | 1.817E-13 | 2.198E-14 | 2.659E-15 |
| **se 76** | 6.595E-03 | 6.595E-03 | 6.595E-03 | 6.595E-03 | 6.595E-03 |
| **se 77** | 8.848E-01 | 8.848E-01 | 8.848E-01 | 8.848E-01 | 8.848E-01 |
| **se 78** | 2.476E+00 | 2.476E+00 | 2.476E+00 | 2.476E+00 | 2.476E+00 |
| **se 79** | 5.416E+00 | 5.416E+00 | 5.416E+00 | 5.416E+00 | 5.416E+00 |
| **se 80** | 1.222E+01 | 1.222E+01 | 1.222E+01 | 1.222E+01 | 1.222E+01 |
| **se 82** | 3.181E+01 | 3.181E+01 | 3.181E+01 | 3.181E+01 | 3.181E+01 |
| **si 28** | 5.084E-14 | 5.084E-14 | 5.084E-14 | 5.084E-14 | 5.084E-14 |
| **si 29** | 5.270E-14 | 5.270E-14 | 5.270E-14 | 5.270E-14 | 5.270E-14 |
| **si 30** | 5.472E-14 | 5.472E-14 | 5.472E-14 | 5.472E-14 | 5.472E-14 |
| **sm144** | 4.377E-11 | 4.377E-11 | 4.377E-11 | 4.377E-11 | 4.377E-11 |
| **sm145** | 2.884E-07 | 8.423E-09 | 6.969E-09 | 3.312E-09 | 1.574E-09 |
| **sm146** | 2.867E-03 | 2.936E-03 | 2.939E-03 | 2.949E-03 | 2.958E-03 |
| **sm147** | 1.185E+02 | 2.494E+02 | 2.528E+02 | 2.642E+02 | 2.729E+02 |
| **sm148** | 1.663E+02 | 1.663E+02 | 1.663E+02 | 1.663E+02 | 1.663E+02 |
| **sm149** | 6.690E+00 | 6.690E+00 | 6.690E+00 | 6.690E+00 | 6.690E+00 |
| **sm150** | 3.664E+02 | 3.664E+02 | 3.664E+02 | 3.664E+02 | 3.664E+02 |
| **sm151** | 2.821E+01 | 2.719E+01 | 2.714E+01 | 2.693E+01 | 2.673E+01 |
| **sm152** | 1.583E+02 | 1.583E+02 | 1.583E+02 | 1.583E+02 | 1.583E+02 |
| **sm154** | 7.341E+01 | 7.341E+01 | 7.341E+01 | 7.341E+01 | 7.341E+01 |
| **sn112** | 3.072E-09 | 3.072E-09 | 3.072E-09 | 3.072E-09 | 3.072E-09 |
| **sn113** | 5.865E-11 | 1.720E-15 | 9.823E-16 | 1.090E-16 | 1.210E-17 |
| **sn114** | 1.598E-04 | 1.602E-04 | 1.602E-04 | 1.602E-04 | 1.602E-04 |
| **sn115** | 4.571E-01 | 4.571E-01 | 4.571E-01 | 4.571E-01 | 4.571E-01 |
| **sn116** | 3.467E+00 | 3.467E+00 | 3.467E+00 | 3.467E+00 | 3.467E+00 |
| **sn117** | 9.412E+00 | 9.412E+00 | 9.412E+00 | 9.412E+00 | 9.412E+00 |
| **sn117m** | 2.367E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn118** | 8.091E+00 | 8.091E+00 | 8.091E+00 | 8.091E+00 | 8.091E+00 |
| **sn119** | 7.739E+00 | 7.799E+00 | 7.799E+00 | 7.799E+00 | 7.799E+00 |
| **sn119m** | 6.227E-02 | 1.032E-03 | 8.283E-04 | 3.493E-04 | 1.473E-04 |
| **sn120** | 7.772E+00 | 7.772E+00 | 7.772E+00 | 7.772E+00 | 7.772E+00 |
| **sn121** | 3.865E-05 | 3.585E-05 | 3.572E-05 | 3.515E-05 | 3.460E-05 |
| **sn121m** | 7.089E-01 | 6.578E-01 | 6.551E-01 | 6.449E-01 | 6.348E-01 |
| **sn122** | 1.049E+01 | 1.049E+01 | 1.049E+01 | 1.049E+01 | 1.049E+01 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **sn123** | 8.363E-02 | 7.666E-06 | 4.655E-06 | 6.568E-07 | 9.266E-08 |
| **sn124** | 1.710E+01 | 1.710E+01 | 1.710E+01 | 1.710E+01 | 1.710E+01 |
| **sn125** | 8.051E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 4.055E+01 | 4.055E+01 | 4.055E+01 | 4.055E+01 | 4.055E+01 |
| **sr 84** | 6.424E-06 | 6.426E-06 | 6.426E-06 | 6.426E-06 | 6.426E-06 |
| **sr 85** | 1.227E-08 | 1.104E-16 | 4.086E-17 | 8.257E-19 | 1.668E-20 |
| **sr 86** | 3.733E-01 | 3.733E-01 | 3.733E-01 | 3.733E-01 | 3.733E-01 |
| **sr 87** | 4.660E-03 | 4.660E-03 | 4.660E-03 | 4.660E-03 | 4.660E-03 |
| **sr 88** | 2.152E+02 | 2.152E+02 | 2.152E+02 | 2.152E+02 | 2.152E+02 |
| **sr 89** | 5.441E-01 | 2.579E-11 | 7.201E-12 | 4.817E-14 | 3.224E-16 |
| **sr 90** | 3.314E+02 | 2.956E+02 | 2.938E+02 | 2.868E+02 | 2.800E+02 |
| **ta180m** | 1.823E-17 | 1.823E-17 | 1.823E-17 | 1.823E-17 | 1.823E-17 |
| **ta181** | 1.971E-13 | 1.971E-13 | 1.971E-13 | 1.971E-13 | 1.971E-13 |
| **ta182** | 7.865E-16 | 2.235E-20 | 1.276E-20 | 1.428E-21 | 1.792E-22 |
| **tb157** | 8.801E-07 | 8.403E-07 | 8.383E-07 | 8.303E-07 | 8.224E-07 |
| **tb158** | 9.451E-05 | 9.279E-05 | 9.266E-05 | 9.232E-05 | 9.199E-05 |
| **tb159** | 6.281E+00 | 6.281E+00 | 6.281E+00 | 6.281E+00 | 6.281E+00 |
| **tb160** | 1.438E-02 | 8.748E-10 | 3.588E-10 | 1.084E-11 | 3.276E-13 |
| **tb161** | 6.690E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 4.507E-18 | 1.264E-26 | 4.392E-27 | 6.943E-29 | 0.000E+00 |
| **tc 95m** | 8.390E-15 | 2.352E-23 | 8.170E-24 | 1.292E-25 | 2.041E-27 |
| **tc 97** | 8.662E-06 | 8.741E-06 | 8.741E-06 | 8.741E-06 | 8.741E-06 |
| **tc 97m** | 8.436E-08 | 1.560E-13 | 7.686E-14 | 4.766E-15 | 2.956E-16 |
| **tc 98** | 8.794E-03 | 8.794E-03 | 8.794E-03 | 8.794E-03 | 8.794E-03 |
| **tc 99** | 9.491E+02 | 9.491E+02 | 9.491E+02 | 9.491E+02 | 9.491E+02 |
| **te120** | 1.758E-09 | 1.758E-09 | 1.758E-09 | 1.758E-09 | 1.758E-09 |
| **te121** | 2.251E-08 | 1.497E-11 | 1.011E-11 | 2.165E-12 | 4.638E-13 |
| **te121m** | 1.922E-07 | 1.278E-10 | 8.628E-11 | 1.849E-11 | 3.960E-12 |
| **te122** | 5.816E-01 | 5.816E-01 | 5.816E-01 | 5.816E-01 | 5.816E-01 |
| **te123** | 2.175E-15 | 2.175E-15 | 2.175E-15 | 2.175E-15 | 2.175E-15 |
| **te123** | 6.633E-03 | 6.943E-03 | 6.943E-03 | 6.943E-03 | 6.943E-03 |
| **te123m** | 3.090E-04 | 1.298E-08 | 7.560E-09 | 9.053E-10 | 1.084E-10 |
| **te124** | 2.212E-13 | 2.212E-13 | 2.212E-13 | 2.212E-13 | 2.212E-13 |
| **te124** | 4.116E-01 | 4.149E-01 | 4.149E-01 | 4.149E-01 | 4.149E-01 |
| **te125** | 1.738E-15 | 1.738E-15 | 1.738E-15 | 1.738E-15 | 1.738E-15 |
| **te125** | 9.219E+00 | 1.901E+01 | 1.927E+01 | 2.016E+01 | 2.085E+01 |
| **te125m** | 1.923E-01 | 5.871E-02 | 5.507E-02 | 4.284E-02 | 3.333E-02 |
| **te126** | 9.378E-01 | 9.378E-01 | 9.385E-01 | 9.385E-01 | 9.385E-01 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **te127** | 1.068E-03 | 1.748E-08 | 9.671E-09 | 9.498E-10 | 9.319E-11 |
| **te127m** | 3.050E-01 | 4.992E-06 | 2.763E-06 | 2.713E-07 | 2.663E-08 |
| **te128** | 1.555E+02 | 1.555E+02 | 1.555E+02 | 1.555E+02 | 1.555E+02 |
| **te129** | 7.772E-06 | 2.312E-21 | 3.394E-22 | 1.822E-25 | 9.783E-29 |
| **te129m** | 8.562E-03 | 2.547E-18 | 3.739E-19 | 2.008E-22 | 1.078E-25 |
| **te130** | 5.180E+02 | 5.180E+02 | 5.180E+02 | 5.180E+02 | 5.180E+02 |
| **th227** | 1.679E-12 | 7.520E-12 | 7.732E-12 | 9.086E-12 | 1.035E-11 |
| **th228** | 2.428E-06 | 1.554E-05 | 1.612E-05 | 1.813E-05 | 1.981E-05 |
| **th229** | 2.095E-07 | 2.215E-07 | 2.223E-07 | 2.255E-07 | 2.291E-07 |
| **th230** | 9.511E-05 | 2.872E-04 | 2.999E-04 | 3.517E-04 | 4.072E-04 |
| **th231** | 4.593E-09 | 4.603E-09 | 4.604E-09 | 4.606E-09 | 4.608E-09 |
| **th232** | 1.781E-04 | 2.154E-04 | 2.175E-04 | 2.255E-04 | 2.334E-04 |
| **th234** | 1.338E-05 | 1.339E-05 | 1.338E-05 | 1.338E-05 | 1.338E-05 |
| **ti 46** | 8.555E-14 | 8.562E-14 | 8.562E-14 | 8.562E-14 | 8.562E-14 |
| **ti 47** | 8.522E-14 | 8.522E-14 | 8.522E-14 | 8.522E-14 | 8.522E-14 |
| **ti 48** | 8.668E-14 | 8.668E-14 | 8.668E-14 | 8.668E-14 | 8.668E-14 |
| **ti 49** | 8.960E-14 | 8.960E-14 | 8.960E-14 | 8.960E-14 | 8.960E-14 |
| **ti 50** | 9.093E-14 | 9.093E-14 | 9.093E-14 | 9.093E-14 | 9.093E-14 |
| **tl203** | 2.299E-15 | 2.303E-15 | 2.303E-15 | 2.303E-15 | 2.303E-15 |
| **tl204** | 3.747E-17 | 1.570E-17 | 1.499E-17 | 1.248E-17 | 1.039E-17 |
| **tl205** | 1.112E-15 | 1.112E-15 | 1.112E-15 | 1.112E-15 | 1.112E-15 |
| **tl207** | 2.683E-16 | 1.229E-15 | 1.256E-15 | 1.486E-15 | 1.693E-15 |
| **tl208** | 2.383E-12 | 1.552E-11 | 1.612E-11 | 1.811E-11 | 1.979E-11 |
| **tm168** | 8.555E-10 | 2.131E-15 | 1.067E-15 | 7.042E-17 | 4.651E-18 |
| **tm169** | 8.867E-04 | 8.867E-04 | 8.867E-04 | 8.867E-04 | 8.867E-04 |
| **tm170** | 4.412E-05 | 3.872E-09 | 2.346E-09 | 3.279E-10 | 4.586E-11 |
| **tm171** | 1.443E-04 | 2.602E-05 | 2.374E-05 | 1.655E-05 | 1.154E-05 |
| **u230** | 2.785E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 3.293E-04 | 8.011E-04 | 8.131E-04 | 8.516E-04 | 8.794E-04 |
| **u233** | 4.636E-04 | 7.255E-04 | 7.387E-04 | 7.978E-04 | 8.582E-04 |
| **u234** | 1.148E+01 | 1.772E+01 | 1.806E+01 | 1.936E+01 | 2.065E+01 |
| **u235** | 1.130E+03 | 1.132E+03 | 1.132E+03 | 1.133E+03 | 1.133E+03 |
| **u236** | 2.683E+02 | 2.732E+02 | 2.735E+02 | 2.745E+02 | 2.754E+02 |
| **u237** | 1.546E-04 | 1.229E-04 | 1.213E-04 | 1.156E-04 | 1.101E-04 |
| **u238** | 9.213E+05 | 9.213E+05 | 9.213E+05 | 9.213E+05 | 9.213E+05 |
| **u240** | 1.280E-12 | 1.280E-12 | 1.280E-12 | 1.280E-12 | 1.280E-12 |
| **v 50** | 4.941E-17 | 4.941E-17 | 4.941E-17 | 4.941E-17 | 4.941E-17 |
| **v 51** | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 | 1.473E-15 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **w182** | 3.135E-13 | 3.143E-13 | 3.143E-13 | 3.143E-13 | 3.143E-13 |
| **w183** | 6.390E-13 | 6.390E-13 | 6.390E-13 | 6.390E-13 | 6.390E-13 |
| **w184** | 5.173E-13 | 5.173E-13 | 5.173E-13 | 5.173E-13 | 5.173E-13 |
| **w185** | 9.803E-17 | 1.109E-23 | 4.700E-24 | 1.618E-25 | 5.571E-27 |
| **w186** | 2.308E-13 | 2.308E-13 | 2.308E-13 | 2.308E-13 | 2.308E-13 |
| **xe124** | 1.822E-13 | 1.822E-13 | 1.822E-13 | 1.822E-13 | 1.822E-13 |
| **xe126** | 2.893E-04 | 2.893E-04 | 2.893E-04 | 2.893E-04 | 2.893E-04 |
| **xe127** | 3.717E-08 | 1.730E-22 | 2.944E-23 | 2.821E-26 | 2.703E-29 |
| **xe128** | 6.262E+00 | 6.262E+00 | 6.262E+00 | 6.262E+00 | 6.262E+00 |
| **xe129** | 3.391E-02 | 3.397E-02 | 3.397E-02 | 3.398E-02 | 3.400E-02 |
| **xe129m** | 1.866E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe130** | 7.958E+00 | 7.958E+00 | 7.958E+00 | 7.958E+00 | 7.958E+00 |
| **xe131** | 6.277E+02 | 6.277E+02 | 6.277E+02 | 6.277E+02 | 6.277E+02 |
| **xe131m** | 9.963E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe132** | 9.929E-15 | 9.929E-15 | 9.929E-15 | 9.929E-15 | 9.929E-15 |
| **xe132** | 1.444E+03 | 1.444E+03 | 1.444E+03 | 1.444E+03 | 1.444E+03 |
| **xe133** | 1.015E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe134** | 1.802E+03 | 1.802E+03 | 1.802E+03 | 1.802E+03 | 1.802E+03 |
| **xe136** | 2.591E+03 | 2.591E+03 | 2.591E+03 | 2.591E+03 | 2.591E+03 |
| **y 88** | 2.283E-05 | 2.923E-10 | 1.597E-10 | 1.489E-11 | 1.388E-12 |
| **y 89** | 2.833E+02 | 2.838E+02 | 2.838E+02 | 2.838E+02 | 2.838E+02 |
| **y 89m** | 1.882E-10 | 8.921E-21 | 2.490E-21 | 1.666E-23 | 1.115E-25 |
| **y 90** | 8.403E-02 | 7.500E-02 | 7.454E-02 | 7.274E-02 | 7.102E-02 |
| **y 91** | 1.522E+00 | 1.845E-09 | 6.132E-10 | 8.124E-12 | 1.076E-13 |
| **yb168** | 1.711E-12 | 1.797E-12 | 1.797E-12 | 1.797E-12 | 1.797E-12 |
| **yb169** | 2.366E-12 | 1.203E-28 | 1.607E-29 | 5.946E-33 | 0.000E+00 |
| **yb170** | 5.288E-04 | 5.729E-04 | 5.729E-04 | 5.729E-04 | 5.729E-04 |
| **yb171** | 1.662E-04 | 2.845E-04 | 2.867E-04 | 2.940E-04 | 2.989E-04 |
| **yb172** | 3.556E-04 | 3.556E-04 | 3.556E-04 | 3.556E-04 | 3.556E-04 |
| **yb176** | 9.830E-17 | 9.830E-17 | 9.830E-17 | 9.830E-17 | 9.830E-17 |
| **zn 64** | 3.477E-16 | 3.477E-16 | 3.477E-16 | 3.477E-16 | 3.477E-16 |
| **zn 66** | 1.264E-04 | 1.264E-04 | 1.264E-04 | 1.264E-04 | 1.264E-04 |
| **zn 67** | 3.535E-04 | 3.535E-04 | 3.535E-04 | 3.535E-04 | 3.535E-04 |
| **zn 68** | 7.075E-04 | 7.075E-04 | 7.075E-04 | 7.075E-04 | 7.075E-04 |
| **zn 70** | 3.534E-03 | 3.534E-03 | 3.534E-03 | 3.534E-03 | 3.534E-03 |
| **zr 88** | 7.089E-12 | 3.938E-18 | 1.818E-18 | 8.755E-20 | 4.214E-21 |
| **zr 90** | 1.778E+01 | 5.356E+01 | 5.537E+01 | 6.235E+01 | 6.916E+01 |
| **zr 91** | 4.130E+02 | 4.145E+02 | 4.145E+02 | 4.145E+02 | 4.145E+02 |

| Table C-5. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **zr 92** | 5.014E+02 | 5.014E+02 | 5.014E+02 | 5.014E+02 | 5.014E+02 |
| **zr 93** | 6.217E+02 | 6.217E+02 | 6.217E+02 | 6.217E+02 | 6.217E+02 |
| **zr 94** | 7.115E+02 | 7.115E+02 | 7.115E+02 | 7.115E+02 | 7.115E+02 |
| **zr 95** | 4.170E+00 | 2.970E-08 | 1.085E-08 | 2.087E-10 | 4.015E-12 |
| **zr 96** | 8.303E+02 | 8.303E+02 | 8.303E+02 | 8.303E+02 | 8.303E+02 |
| **Total** | **1.1341E+06** | **1.1341E+06** | **1.1341E+06** | **1.1341E+06** | **1.1341E+06** |

**Table C-6. Activity in Fuel Rod B4 (high Pu loading) in Ci per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 6.790E-08 | 7.054E-08 | 7.067E-08 | 7.153E-08 | 7.232E-08 |
| **ac226** | 1.246E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ac227** | 5.339E-08 | 2.261E-07 | 2.356E-07 | 2.728E-07 | 3.102E-07 |
| **ac228** | 8.712E-12 | 1.552E-11 | 1.585E-11 | 1.713E-11 | 1.837E-11 |
| **ag105** | 2.859E-10 | 6.631E-23 | 1.392E-23 | 3.036E-26 | 6.624E-29 |
| **ag106m** | 1.066E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ag108** | 5.270E-04 | 5.231E-04 | 5.229E-04 | 5.220E-04 | 5.212E-04 |
| **ag108m** | 6.058E-03 | 6.013E-03 | 6.010E-03 | 6.001E-03 | 5.991E-03 |
| **ag109m** | 5.738E-01 | 4.247E-02 | 3.693E-02 | 2.134E-02 | 1.233E-02 |
| **ag110** | 9.709E+01 | 7.912E-01 | 6.112E-01 | 2.220E-01 | 8.058E-02 |
| **ag110m** | 7.140E+03 | 5.817E+01 | 4.494E+01 | 1.632E+01 | 5.926E+00 |
| **ag111** | 2.698E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **am241** | 1.477E+03 | 5.128E+03 | 5.300E+03 | 5.955E+03 | 6.578E+03 |
| **am242** | 4.557E+01 | 4.452E+01 | 4.446E+01 | 4.424E+01 | 4.403E+01 |
| **am242m** | 4.578E+01 | 4.473E+01 | 4.467E+01 | 4.445E+01 | 4.423E+01 |
| **am243** | 7.688E+01 | 7.681E+01 | 7.681E+01 | 7.681E+01 | 7.681E+01 |
| **am244** | 3.712E-09 | 2.576E-09 | 2.526E-09 | 2.339E-09 | 2.165E-09 |
| **am245** | 1.968E-07 | 4.611E-09 | 3.770E-09 | 1.710E-09 | 7.754E-10 |
| **am246m** | 3.481E-12 | 3.478E-12 | 3.478E-12 | 3.478E-12 | 3.477E-12 |
| **ar 37** | 1.224E-14 | 1.582E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ar 39** | 4.098E-15 | 4.048E-15 | 4.045E-15 | 4.035E-15 | 4.025E-15 |
| **ar 42** | 6.730E-21 | 6.088E-21 | 6.056E-21 | 5.930E-21 | 5.806E-21 |
| **as 73** | 3.489E-06 | 1.112E-12 | 4.981E-13 | 2.133E-14 | 9.134E-16 |
| **as 74** | 1.949E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **at217** | 6.790E-08 | 7.054E-08 | 7.067E-08 | 7.153E-08 | 7.232E-08 |
| **at218** | 2.880E-13 | 1.802E-12 | 1.935E-12 | 2.519E-12 | 3.208E-12 |
| **au194** | 8.394E-21 | 8.328E-21 | 8.322E-21 | 8.309E-21 | 8.295E-21 |
| **au195** | 8.480E-16 | 1.334E-18 | 9.431E-19 | 2.423E-19 | 6.221E-20 |
| **ba131** | 7.767E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba131** | 4.131E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba133** | 5.380E-02 | 3.935E-02 | 3.870E-02 | 3.623E-02 | 3.392E-02 |
| **ba136m** | 9.788E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137m** | 1.422E+05 | 1.275E+05 | 1.267E+05 | 1.238E+05 | 1.210E+05 |
| **ba140** | 1.125E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 10** | 2.904E-06 | 2.904E-06 | 2.904E-06 | 2.904E-06 | 2.904E-06 |
| **bi210** | 4.037E-09 | 4.117E-09 | 4.158E-09 | 4.371E-09 | 4.675E-09 |
| **bi211** | 4.960E-08 | 2.266E-07 | 2.314E-07 | 2.733E-07 | 3.107E-07 |
| **bi212** | 2.661E-03 | 1.676E-02 | 1.738E-02 | 1.951E-02 | 2.129E-02 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bi213** | 6.790E-08 | 7.054E-08 | 7.067E-08 | 7.146E-08 | 7.232E-08 |
| **bi214** | 1.440E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **bk247** | 5.867E-13 | 5.853E-13 | 5.852E-13 | 5.849E-13 | 5.846E-13 |
| **bk248** | 3.712E-09 | 2.575E-09 | 2.525E-09 | 2.338E-09 | 2.165E-09 |
| **bk249** | 1.357E-02 | 3.179E-04 | 2.600E-04 | 1.179E-04 | 5.348E-05 |
| **bk250** | 1.059E-08 | 1.372E-10 | 1.090E-10 | 4.445E-11 | 1.868E-11 |
| **bk251** | 9.550E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **c 14** | 1.661E-03 | 1.660E-03 | 1.660E-03 | 1.660E-03 | 1.660E-03 |
| **ca 41** | 3.428E-18 | 3.428E-18 | 3.428E-18 | 3.428E-18 | 3.428E-18 |
| **ca 45** | 1.645E-13 | 1.018E-16 | 6.849E-17 | 1.446E-17 | 3.051E-18 |
| **cd109** | 5.738E-01 | 4.247E-02 | 3.693E-02 | 2.134E-02 | 1.233E-02 |
| **cd113** | 1.561E-13 | 1.561E-13 | 1.561E-13 | 1.561E-13 | 1.561E-13 |
| **cd113m** | 1.261E+00 | 9.993E-01 | 9.867E-01 | 9.392E-01 | 8.943E-01 |
| **cd115m** | 1.818E+01 | 3.566E-11 | 8.394E-12 | 2.871E-14 | 9.821E-17 |
| **cd116** | 1.213E-15 | 1.213E-15 | 1.213E-15 | 1.213E-15 | 1.213E-15 |
| **ce139** | 1.121E+01 | 1.816E-03 | 1.137E-03 | 1.809E-04 | 2.879E-05 |
| **ce141** | 6.470E+03 | 5.793E-13 | 7.972E-14 | 3.324E-17 | 1.386E-20 |
| **ce144** | 6.690E+05 | 9.874E+03 | 7.873E+03 | 3.240E+03 | 1.333E+03 |
| **cf248** | 2.355E-08 | 6.423E-10 | 5.294E-10 | 2.479E-10 | 1.161E-10 |
| **cf249** | 3.619E-05 | 6.869E-05 | 6.882E-05 | 6.902E-05 | 6.902E-05 |
| **cf250** | 4.601E-04 | 3.578E-04 | 3.531E-04 | 3.349E-04 | 3.176E-04 |
| **cf251** | 3.306E-06 | 3.294E-06 | 3.293E-06 | 3.290E-06 | 3.288E-06 |
| **cf252** | 3.410E-04 | 9.834E-05 | 9.200E-05 | 7.080E-05 | 5.449E-05 |
| **cf253** | 1.071E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.578E-08 | 3.760E-17 | 1.295E-17 | 1.978E-19 | 3.021E-21 |
| **cl 36** | 1.077E-16 | 1.077E-16 | 1.077E-16 | 1.077E-16 | 1.077E-16 |
| **cm240** | 3.951E-07 | 1.883E-26 | 1.730E-27 | 0.000E+00 | 0.000E+00 |
| **cm241** | 4.618E-04 | 5.745E-20 | 8.051E-21 | 3.596E-24 | 1.607E-27 |
| **cm242** | 7.285E+04 | 8.262E+01 | 6.763E+01 | 4.317E+01 | 3.785E+01 |
| **cm243** | 9.398E+01 | 8.394E+01 | 8.348E+01 | 8.150E+01 | 7.959E+01 |
| **cm244** | 1.200E+04 | 1.001E+04 | 9.914E+03 | 9.537E+03 | 9.180E+03 |
| **cm245** | 2.423E+00 | 2.423E+00 | 2.423E+00 | 2.422E+00 | 2.422E+00 |
| **cm246** | 2.870E-01 | 2.868E-01 | 2.868E-01 | 2.868E-01 | 2.868E-01 |
| **cm247** | 1.326E-06 | 1.326E-06 | 1.326E-06 | 1.326E-06 | 1.326E-06 |
| **cm248** | 3.789E-06 | 3.791E-06 | 3.791E-06 | 3.791E-06 | 3.791E-06 |
| **cm249** | 3.327E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cm250** | 1.933E-11 | 1.933E-11 | 1.933E-11 | 1.932E-11 | 1.932E-11 |
| **co 56** | 4.004E-21 | 7.041E-28 | 3.057E-28 | 1.155E-29 | 0.000E+00 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **co 57** | 9.246E-16 | 1.112E-17 | 8.771E-18 | 3.458E-18 | 1.363E-18 |
| **co 58** | 1.933E-14 | 8.394E-22 | 3.380E-22 | 9.511E-24 | 2.677E-25 |
| **co 60** | 1.112E-11 | 5.960E-12 | 5.764E-12 | 5.055E-12 | 4.432E-12 |
| **co 60m** | 3.088E-21 | 3.088E-21 | 3.088E-21 | 3.088E-21 | 3.088E-21 |
| **cr 51** | 1.034E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs131** | 2.098E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 2.698E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs134** | 2.080E+05 | 4.231E+04 | 3.884E+04 | 2.777E+04 | 1.986E+04 |
| **cs135** | 1.009E+00 | 1.009E+00 | 1.009E+00 | 1.009E+00 | 1.009E+00 |
| **cs136** | 8.837E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.501E+05 | 1.346E+05 | 1.338E+05 | 1.308E+05 | 1.278E+05 |
| **dy159** | 1.675E-03 | 4.086E-07 | 2.615E-07 | 4.534E-08 | 7.860E-09 |
| **er169** | 9.643E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es252** | 1.752E-12 | 1.372E-13 | 1.197E-13 | 7.001E-14 | 4.094E-14 |
| **es253** | 2.241E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 1.058E-08 | 1.357E-10 | 1.073E-10 | 4.288E-11 | 1.713E-11 |
| **es255** | 1.193E-10 | 9.306E-24 | 1.843E-24 | 3.197E-27 | 5.546E-30 |
| **eu147** | 1.207E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 7.470E-07 | 1.861E-12 | 9.313E-13 | 6.150E-14 | 4.061E-15 |
| **eu152** | 7.292E+00 | 5.716E+00 | 5.642E+00 | 5.361E+00 | 5.093E+00 |
| **eu154** | 1.691E+04 | 1.154E+04 | 1.131E+04 | 1.044E+04 | 9.623E+03 |
| **eu155** | 7.377E+03 | 3.693E+03 | 3.558E+03 | 3.076E+03 | 2.658E+03 |
| **eu156** | 2.333E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **fe 55** | 4.394E-13 | 1.326E-13 | 1.243E-13 | 9.656E-14 | 7.503E-14 |
| **fe 59** | 4.748E-14 | 8.949E-26 | 2.102E-26 | 7.133E-29 | 0.000E+00 |
| **fe 60** | 3.088E-21 | 3.088E-21 | 3.088E-21 | 3.088E-21 | 3.088E-21 |
| **fr221** | 6.790E-08 | 7.054E-08 | 7.067E-08 | 7.153E-08 | 7.232E-08 |
| **fr223** | 7.371E-10 | 3.121E-09 | 3.251E-09 | 3.764E-09 | 4.280E-09 |
| **ga 68** | 1.557E-15 | 1.849E-17 | 1.458E-17 | 5.730E-18 | 2.252E-18 |
| **gd151** | 6.426E-04 | 3.988E-08 | 2.371E-08 | 3.082E-09 | 4.006E-10 |
| **gd152** | 1.865E-12 | 1.920E-12 | 1.923E-12 | 1.933E-12 | 1.942E-12 |
| **gd153** | 1.227E+01 | 8.295E-02 | 6.344E-02 | 2.215E-02 | 7.734E-03 |
| **ge 68** | 1.557E-15 | 1.849E-17 | 1.458E-17 | 5.729E-18 | 2.252E-18 |
| **ge 71** | 7.860E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 73m** | 3.489E-06 | 1.112E-12 | 4.981E-13 | 2.133E-14 | 9.134E-16 |
| **h3** | 7.885E+02 | 6.037E+02 | 5.951E+02 | 5.626E+02 | 5.318E+02 |
| **hf172** | 1.642E-19 | 2.829E-20 | 2.574E-20 | 1.777E-20 | 1.227E-20 |
| **hf175** | 1.029E-11 | 3.627E-19 | 1.444E-19 | 3.890E-21 | 1.048E-22 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hf177m** | 2.821E-14 | 1.580E-17 | 1.057E-17 | 2.185E-18 | 4.515E-19 |
| **hf181** | 3.975E-13 | 1.961E-25 | 4.286E-26 | 1.096E-28 | 0.000E+00 |
| **hf182** | 2.181E-19 | 2.181E-19 | 2.181E-19 | 2.181E-19 | 2.181E-19 |
| **hg194** | 8.388E-21 | 8.328E-21 | 8.322E-21 | 8.309E-21 | 8.295E-21 |
| **hg203** | 6.021E-14 | 3.830E-25 | 9.603E-26 | 4.209E-28 | 0.000E+00 |
| **hg206** | 7.668E-17 | 7.820E-17 | 7.899E-17 | 8.302E-17 | 8.877E-17 |
| **ho163** | 1.180E-07 | 1.180E-07 | 1.180E-07 | 1.180E-07 | 1.179E-07 |
| **ho166m** | 1.234E-03 | 1.230E-03 | 1.230E-03 | 1.229E-03 | 1.228E-03 |
| **i125** | 2.065E-05 | 3.407E-14 | 1.151E-14 | 1.627E-16 | 2.298E-18 |
| **i126** | 1.619E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i129** | 5.625E-02 | 5.625E-02 | 5.625E-02 | 5.625E-02 | 5.625E-02 |
| **i131** | 1.629E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113m** | 7.675E-07 | 2.250E-11 | 1.285E-11 | 1.426E-12 | 1.583E-13 |
| **in114** | 7.186E-03 | 2.086E-13 | 5.674E-14 | 3.424E-16 | 2.067E-18 |
| **in114m** | 7.424E-03 | 2.156E-13 | 5.864E-14 | 3.539E-16 | 2.136E-18 |
| **in115** | 2.522E-11 | 2.522E-11 | 2.522E-11 | 2.522E-11 | 2.522E-11 |
| **in115m** | 1.932E-03 | 3.788E-15 | 8.916E-16 | 3.050E-18 | 1.044E-20 |
| **ir190** | 1.312E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir191m** | 6.548E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir192** | 2.143E-12 | 1.839E-19 | 7.681E-20 | 2.496E-21 | 8.110E-23 |
| **ir193m** | 1.077E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir194** | 1.501E-18 | 8.672E-19 | 8.421E-19 | 7.503E-19 | 6.684E-19 |
| **k 40** | 4.982E-19 | 4.982E-19 | 4.982E-19 | 4.982E-19 | 4.982E-19 |
| **k 42** | 6.730E-21 | 6.089E-21 | 6.056E-21 | 5.930E-21 | 5.806E-21 |
| **kr 81** | 9.154E-07 | 9.154E-07 | 9.154E-07 | 9.154E-07 | 9.154E-07 |
| **kr 83m** | 9.881E-04 | 8.764E-10 | 4.148E-10 | 2.204E-11 | 1.171E-12 |
| **kr 85** | 7.734E+03 | 5.698E+03 | 5.605E+03 | 5.256E+03 | 4.928E+03 |
| **la137** | 2.406E-05 | 2.405E-05 | 2.405E-05 | 2.405E-05 | 2.405E-05 |
| **la138** | 7.694E-10 | 7.694E-10 | 7.694E-10 | 7.694E-10 | 7.694E-10 |
| **la140** | 1.297E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **lu172** | 1.656E-19 | 2.829E-20 | 2.574E-20 | 1.777E-20 | 1.227E-20 |
| **lu172m** | 1.642E-19 | 2.829E-20 | 2.574E-20 | 1.777E-20 | 1.227E-20 |
| **lu173** | 5.154E-15 | 4.673E-16 | 4.108E-16 | 2.478E-16 | 1.495E-16 |
| **lu174** | 7.391E-15 | 2.832E-15 | 2.685E-15 | 2.178E-15 | 1.767E-15 |
| **lu174m** | 1.971E-15 | 4.177E-19 | 2.653E-19 | 4.466E-20 | 7.516E-21 |
| **lu176** | 3.928E-22 | 3.928E-22 | 3.928E-22 | 3.928E-22 | 3.928E-22 |
| **lu177** | 8.011E-15 | 4.490E-18 | 3.004E-18 | 6.207E-19 | 1.283E-19 |
| **lu177m** | 3.590E-14 | 2.011E-17 | 1.345E-17 | 2.780E-18 | 5.744E-19 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **mn 53** | 6.569E-22 | 6.569E-22 | 6.569E-22 | 6.569E-22 | 6.569E-22 |
| **mn 54** | 1.738E-13 | 3.700E-15 | 3.009E-15 | 1.337E-15 | 5.946E-16 |
| **mo 93** | 4.559E-07 | 4.555E-07 | 4.555E-07 | 4.554E-07 | 4.553E-07 |
| **mo100** | 6.624E-13 | 6.624E-13 | 6.624E-13 | 6.624E-13 | 6.624E-13 |
| **na 22** | 5.360E-19 | 1.515E-19 | 1.416E-19 | 1.085E-19 | 8.315E-20 |
| **nb 91** | 6.677E-08 | 6.644E-08 | 6.644E-08 | 6.638E-08 | 6.631E-08 |
| **nb 91m** | 1.783E-10 | 4.779E-19 | 1.657E-19 | 2.594E-21 | 4.060E-23 |
| **nb 92** | 1.125E-10 | 1.125E-10 | 1.125E-10 | 1.125E-10 | 1.125E-10 |
| **nb 92m** | 2.647E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93m** | 1.621E-01 | 4.567E-01 | 4.708E-01 | 5.250E-01 | 5.768E-01 |
| **nb 94** | 6.763E-04 | 6.763E-04 | 6.763E-04 | 6.763E-04 | 6.763E-04 |
| **nb 95** | 1.959E+05 | 1.475E-03 | 5.379E-04 | 1.067E-05 | 2.054E-07 |
| **nb 95m** | 1.072E+03 | 7.635E-06 | 2.791E-06 | 5.368E-08 | 1.032E-09 |
| **nd144** | 1.258E-09 | 1.483E-09 | 1.483E-09 | 1.485E-09 | 1.486E-09 |
| **nd147** | 4.258E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd150** | 9.194E-14 | 9.194E-14 | 9.194E-14 | 9.194E-14 | 9.194E-14 |
| **ni 59** | 6.743E-15 | 6.743E-15 | 6.743E-15 | 6.743E-15 | 6.743E-15 |
| **ni 63** | 1.034E-13 | 1.001E-13 | 9.993E-14 | 9.927E-14 | 9.854E-14 |
| **np235** | 3.148E-03 | 1.518E-04 | 1.290E-04 | 6.809E-05 | 3.597E-05 |
| **np236** | 3.512E-06 | 3.512E-06 | 3.512E-06 | 3.512E-06 | 3.512E-06 |
| **np237** | 1.274E-01 | 1.326E-01 | 1.330E-01 | 1.349E-01 | 1.369E-01 |
| **np238** | 2.102E-01 | 2.053E-01 | 2.050E-01 | 2.040E-01 | 2.030E-01 |
| **np239** | 7.688E+01 | 7.681E+01 | 7.681E+01 | 7.681E+01 | 7.681E+01 |
| **np240** | 2.404E-09 | 2.404E-09 | 2.404E-09 | 2.404E-09 | 2.404E-09 |
| **np240m** | 2.003E-06 | 2.003E-06 | 2.003E-06 | 2.003E-06 | 2.003E-06 |
| **os185** | 1.565E-15 | 4.177E-21 | 2.098E-21 | 1.405E-22 | 9.418E-24 |
| **os191** | 6.548E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **os194** | 1.500E-18 | 8.672E-19 | 8.421E-19 | 7.503E-19 | 6.684E-19 |
| **p 32** | 1.836E-18 | 3.570E-19 | 3.566E-19 | 3.550E-19 | 3.533E-19 |
| **p 33** | 2.144E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa230** | 3.620E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 1.177E-06 | 1.388E-06 | 1.400E-06 | 1.444E-06 | 1.489E-06 |
| **pa232** | 7.027E-09 | 7.027E-09 | 7.027E-09 | 7.027E-09 | 7.027E-09 |
| **pa233** | 1.273E-01 | 1.324E-01 | 1.329E-01 | 1.349E-01 | 1.369E-01 |
| **pa234** | 4.932E-04 | 4.934E-04 | 4.932E-04 | 4.932E-04 | 4.932E-04 |
| **pa234m** | 3.083E-01 | 3.084E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |
| **pb209** | 6.790E-08 | 7.054E-08 | 7.067E-08 | 7.153E-08 | 7.232E-08 |
| **pb210** | 4.035E-09 | 4.115E-09 | 4.156E-09 | 4.368E-09 | 4.672E-09 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pb211** | 4.960E-08 | 2.266E-07 | 2.314E-07 | 2.733E-07 | 3.107E-07 |
| **pb212** | 2.661E-03 | 1.676E-02 | 1.738E-02 | 1.951E-02 | 2.129E-02 |
| **pb214** | 1.439E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **pd103** | 2.322E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd107** | 3.471E-01 | 3.471E-01 | 3.471E-01 | 3.471E-01 | 3.471E-01 |
| **pm143** | 6.225E-09 | 6.690E-11 | 5.246E-11 | 2.019E-11 | 7.774E-12 |
| **pm144** | 1.385E-06 | 5.062E-08 | 4.239E-08 | 2.111E-08 | 1.051E-08 |
| **pm145** | 5.511E-03 | 4.619E-03 | 4.573E-03 | 4.398E-03 | 4.230E-03 |
| **pm146** | 2.165E-01 | 1.195E-01 | 1.157E-01 | 1.021E-01 | 9.009E-02 |
| **pm147** | 1.793E+05 | 5.118E+04 | 4.785E+04 | 3.675E+04 | 2.822E+04 |
| **pm148** | 3.709E+01 | 8.599E-12 | 1.805E-12 | 3.939E-15 | 8.593E-18 |
| **pm148m** | 7.681E+02 | 1.781E-10 | 3.739E-11 | 8.157E-14 | 1.781E-16 |
| **po209** | 2.582E-16 | 2.501E-16 | 2.497E-16 | 2.479E-16 | 2.463E-16 |
| **po210** | 3.510E-09 | 4.000E-09 | 4.029E-09 | 4.201E-09 | 4.453E-09 |
| **po211** | 1.369E-10 | 6.255E-10 | 6.388E-10 | 7.542E-10 | 8.579E-10 |
| **po212** | 1.705E-03 | 1.073E-02 | 1.114E-02 | 1.250E-02 | 1.364E-02 |
| **po213** | 6.638E-08 | 6.902E-08 | 6.915E-08 | 6.994E-08 | 7.074E-08 |
| **po214** | 1.520E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **po215** | 4.960E-08 | 2.266E-07 | 2.314E-07 | 2.733E-07 | 3.107E-07 |
| **po216** | 2.661E-03 | 1.676E-02 | 1.738E-02 | 1.951E-02 | 2.129E-02 |
| **po218** | 1.440E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **pr143** | 2.351E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 6.690E+05 | 9.874E+03 | 7.873E+03 | 3.240E+03 | 1.333E+03 |
| **pr144m** | 6.389E+03 | 9.425E+01 | 7.516E+01 | 3.094E+01 | 1.273E+01 |
| **pt193** | 7.358E-13 | 6.889E-13 | 6.862E-13 | 6.770E-13 | 6.677E-13 |
| **pu236** | 5.103E-01 | 1.614E-01 | 1.518E-01 | 1.191E-01 | 9.346E-02 |
| **pu237** | 1.489E-01 | 5.528E-13 | 1.347E-13 | 5.269E-16 | 2.062E-18 |
| **pu238** | 3.421E+03 | 3.654E+03 | 3.647E+03 | 3.619E+03 | 3.591E+03 |
| **pu239** | 9.900E+02 | 9.900E+02 | 9.900E+02 | 9.900E+02 | 9.900E+02 |
| **pu240** | 2.261E+03 | 2.266E+03 | 2.266E+03 | 2.267E+03 | 2.268E+03 |
| **pu241** | 5.413E+05 | 4.300E+05 | 4.247E+05 | 4.047E+05 | 3.855E+05 |
| **pu242** | 6.001E+00 | 6.001E+00 | 6.001E+00 | 6.001E+00 | 6.001E+00 |
| **pu243** | 1.326E-06 | 1.326E-06 | 1.326E-06 | 1.326E-06 | 1.326E-06 |
| **pu244** | 2.006E-06 | 2.006E-06 | 2.006E-06 | 2.006E-06 | 2.006E-06 |
| **pu246** | 3.479E-12 | 3.478E-12 | 3.478E-12 | 3.478E-12 | 3.477E-12 |
| **ra222** | 8.130E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ra223** | 4.960E-08 | 2.266E-07 | 2.314E-07 | 2.733E-07 | 3.107E-07 |
| **ra224** | 2.661E-03 | 1.676E-02 | 1.738E-02 | 1.951E-02 | 2.129E-02 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra225** | 6.783E-08 | 7.054E-08 | 7.074E-08 | 7.153E-08 | 7.232E-08 |
| **ra226** | 1.451E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **ra228** | 8.712E-12 | 1.552E-11 | 1.585E-11 | 1.713E-11 | 1.837E-11 |
| **rb 83** | 1.329E-03 | 1.179E-09 | 5.581E-10 | 2.965E-11 | 1.575E-12 |
| **rb 84** | 3.603E-03 | 4.584E-19 | 6.431E-20 | 2.887E-23 | 1.296E-26 |
| **rb 86** | 1.161E-01 | 1.158E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.600E-05 | 1.600E-05 | 1.600E-05 | 1.600E-05 | 1.600E-05 |
| **re183** | 7.430E-19 | 2.619E-26 | 1.043E-26 | 2.809E-28 | 7.569E-30 |
| **re184** | 1.292E-16 | 9.828E-20 | 6.710E-20 | 1.507E-20 | 3.372E-21 |
| **re184m** | 1.273E-16 | 1.043E-19 | 7.120E-20 | 1.593E-20 | 3.566E-21 |
| **re186** | 1.915E-18 | 1.915E-18 | 1.915E-18 | 1.915E-18 | 1.915E-18 |
| **re186m** | 1.915E-18 | 1.915E-18 | 1.915E-18 | 1.915E-18 | 1.915E-18 |
| **re187** | 1.563E-20 | 1.563E-20 | 1.563E-20 | 1.563E-20 | 1.563E-20 |
| **re188** | 1.915E-14 | 6.399E-22 | 2.540E-22 | 0.000E+00 | 0.000E+00 |
| **rh 99** | 6.961E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rh101** | 6.829E-04 | 2.522E-04 | 2.390E-04 | 1.938E-04 | 1.571E-04 |
| **rh102** | 5.873E+00 | 2.026E-02 | 1.538E-02 | 5.768E-03 | 2.724E-03 |
| **rh102m** | 2.109E+00 | 8.758E-01 | 8.355E-01 | 6.941E-01 | 5.770E-01 |
| **rh103m** | 2.228E+04 | 1.137E-09 | 2.199E-10 | 3.488E-13 | 5.533E-16 |
| **rh106** | 8.157E+05 | 3.224E+04 | 2.711E+04 | 1.373E+04 | 6.948E+03 |
| **rn217** | 4.751E-12 | 4.940E-12 | 4.948E-12 | 5.005E-12 | 5.062E-12 |
| **rn218** | 8.130E-11 | 1.802E-15 | 1.935E-15 | 2.519E-15 | 3.208E-15 |
| **rn219** | 4.960E-08 | 2.266E-07 | 2.314E-07 | 2.733E-07 | 3.107E-07 |
| **rn220** | 2.661E-03 | 1.676E-02 | 1.738E-02 | 1.951E-02 | 2.129E-02 |
| **rn222** | 1.440E-09 | 9.009E-09 | 9.676E-09 | 1.260E-08 | 1.604E-08 |
| **ru103** | 2.252E+04 | 1.149E-09 | 2.222E-10 | 3.526E-13 | 5.593E-16 |
| **ru106** | 8.157E+05 | 3.224E+04 | 2.711E+04 | 1.373E+04 | 6.948E+03 |
| **s 35** | 1.243E-13 | 1.358E-19 | 6.501E-20 | 3.609E-21 | 2.003E-22 |
| **sb120m** | 1.566E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sb124** | 7.199E+01 | 1.553E-07 | 5.323E-08 | 7.959E-10 | 1.191E-11 |
| **sb125** | 1.617E+04 | 4.909E+03 | 4.605E+03 | 3.582E+03 | 2.787E+03 |
| **sb126** | 8.097E-02 | 8.051E-02 | 8.051E-02 | 8.051E-02 | 8.051E-02 |
| **sb126m** | 5.750E-01 | 5.749E-01 | 5.749E-01 | 5.749E-01 | 5.749E-01 |
| **sb127** | 3.306E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sc 45m** | 3.126E-18 | 1.935E-21 | 1.302E-21 | 2.747E-22 | 5.796E-23 |
| **sc 46** | 1.365E-12 | 8.104E-19 | 3.755E-19 | 1.833E-20 | 8.956E-22 |
| **se 75** | 1.374E-04 | 6.068E-09 | 3.543E-09 | 4.286E-10 | 5.187E-11 |
| **se 79** | 9.438E-02 | 9.438E-02 | 9.438E-02 | 9.438E-02 | 9.438E-02 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **si 32** | 3.646E-19 | 3.569E-19 | 3.565E-19 | 3.549E-19 | 3.533E-19 |
| **sm145** | 9.405E-04 | 2.748E-05 | 2.273E-05 | 1.080E-05 | 5.132E-06 |
| **sm146** | 8.731E-08 | 8.910E-08 | 8.916E-08 | 8.936E-08 | 8.962E-08 |
| **sm147** | 2.943E-06 | 6.114E-06 | 6.196E-06 | 6.471E-06 | 6.684E-06 |
| **sm148** | 7.186E-11 | 7.186E-11 | 7.186E-11 | 7.186E-11 | 7.186E-11 |
| **sm151** | 7.377E+02 | 7.113E+02 | 7.100E+02 | 7.047E+02 | 6.988E+02 |
| **sn113** | 7.668E-07 | 2.248E-11 | 1.284E-11 | 1.425E-12 | 1.582E-13 |
| **sn117m** | 2.384E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn119m** | 2.646E+02 | 4.387E+00 | 3.520E+00 | 1.485E+00 | 6.261E-01 |
| **sn121** | 4.243E+01 | 3.936E+01 | 3.921E+01 | 3.859E+01 | 3.799E+01 |
| **sn121m** | 5.467E+01 | 5.072E+01 | 5.052E+01 | 4.973E+01 | 4.895E+01 |
| **sn123** | 1.139E-22 | 1.044E-26 | 6.340E-27 | 8.949E-28 | 1.262E-28 |
| **sn123** | 7.067E+02 | 6.479E-02 | 3.934E-02 | 5.551E-03 | 7.833E-04 |
| **sn125** | 8.923E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 5.750E-01 | 5.749E-01 | 5.749E-01 | 5.749E-01 | 5.749E-01 |
| **sr 85** | 3.716E-04 | 3.344E-12 | 1.237E-12 | 2.500E-14 | 5.050E-16 |
| **sr 89** | 1.648E+04 | 7.807E-07 | 2.180E-07 | 1.459E-09 | 9.762E-12 |
| **sr 90** | 5.275E+04 | 4.706E+04 | 4.677E+04 | 4.566E+04 | 4.457E+04 |
| **ta179** | 2.833E-17 | 4.650E-18 | 4.220E-18 | 2.884E-18 | 1.971E-18 |
| **ta182** | 4.391E-12 | 1.249E-16 | 7.133E-17 | 8.058E-18 | 1.082E-18 |
| **tb157** | 2.938E-05 | 2.805E-05 | 2.798E-05 | 2.771E-05 | 2.744E-05 |
| **tb158** | 1.475E-03 | 1.448E-03 | 1.446E-03 | 1.441E-03 | 1.435E-03 |
| **tb160** | 2.115E+02 | 1.287E-05 | 5.278E-06 | 1.595E-07 | 4.820E-09 |
| **tb161** | 9.280E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 1.014E-11 | 2.844E-20 | 9.887E-21 | 1.562E-22 | 0.000E+00 |
| **tc 95m** | 2.579E-10 | 7.232E-19 | 2.513E-19 | 3.971E-21 | 6.276E-23 |
| **tc 97** | 1.002E-08 | 1.011E-08 | 1.011E-08 | 1.011E-08 | 1.011E-08 |
| **tc 97m** | 1.542E-03 | 2.853E-09 | 1.405E-09 | 8.712E-11 | 5.403E-12 |
| **tc 98** | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 | 1.024E-05 |
| **tc 99** | 1.847E+01 | 1.847E+01 | 1.847E+01 | 1.847E+01 | 1.847E+01 |
| **te121** | 1.946E-03 | 1.294E-06 | 8.738E-07 | 1.871E-07 | 4.008E-08 |
| **te121m** | 1.939E-03 | 1.289E-06 | 8.705E-07 | 1.865E-07 | 3.996E-08 |
| **te123m** | 4.028E+00 | 1.692E-04 | 9.854E-05 | 1.180E-05 | 1.413E-06 |
| **te125m** | 3.942E+03 | 1.202E+03 | 1.127E+03 | 8.771E+02 | 6.823E+02 |
| **te127** | 2.769E+03 | 4.531E-02 | 2.508E-02 | 2.462E-03 | 2.417E-04 |
| **te127m** | 2.827E+03 | 4.626E-02 | 2.561E-02 | 2.514E-03 | 2.467E-04 |
| **te128** | 5.709E-14 | 5.709E-14 | 5.709E-14 | 5.709E-14 | 5.709E-14 |
| **te129** | 1.670E+02 | 4.968E-14 | 7.292E-15 | 3.916E-18 | 2.102E-21 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **te129m** | 2.640E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **te129m** | 2.646E+02 | 7.873E-14 | 1.156E-14 | 6.206E-18 | 3.332E-21 |
| **th226** | 8.130E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **th227** | 5.006E-08 | 2.235E-07 | 2.297E-07 | 2.695E-07 | 3.065E-07 |
| **th228** | 2.697E-03 | 1.670E-02 | 1.730E-02 | 1.944E-02 | 2.123E-02 |
| **th229** | 6.783E-08 | 7.054E-08 | 7.074E-08 | 7.153E-08 | 7.232E-08 |
| **th230** | 1.816E-06 | 5.907E-06 | 6.187E-06 | 7.344E-06 | 8.599E-06 |
| **th231** | 2.096E-03 | 2.100E-03 | 2.101E-03 | 2.102E-03 | 2.103E-03 |
| **th232** | 2.189E-11 | 2.637E-11 | 2.662E-11 | 2.757E-11 | 2.853E-11 |
| **th234** | 3.083E-01 | 3.084E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |
| **tl202** | 5.280E-23 | 0.000E+00 | 1.191E-27 | 0.000E+00 | 0.000E+00 |
| **tl204** | 2.442E-14 | 1.024E-14 | 9.775E-15 | 8.137E-15 | 6.776E-15 |
| **tl206** | 5.407E-15 | 5.514E-15 | 5.569E-15 | 5.854E-15 | 6.261E-15 |
| **tl207** | 4.946E-08 | 2.260E-07 | 2.308E-07 | 2.725E-07 | 3.099E-07 |
| **tl208** | 9.564E-04 | 6.023E-03 | 6.248E-03 | 7.014E-03 | 7.655E-03 |
| **tl209** | 1.493E-09 | 1.552E-09 | 1.555E-09 | 1.573E-09 | 1.591E-09 |
| **tl210** | 3.023E-13 | 1.892E-12 | 2.032E-12 | 2.645E-12 | 3.368E-12 |
| **tm167** | 2.534E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tm168** | 8.811E-06 | 2.195E-11 | 1.098E-11 | 7.258E-13 | 4.791E-14 |
| **tm170** | 3.303E-01 | 2.899E-05 | 1.756E-05 | 2.456E-06 | 3.433E-07 |
| **tm171** | 1.900E-01 | 3.427E-02 | 3.126E-02 | 2.180E-02 | 1.519E-02 |
| **u230** | 8.124E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 9.781E-03 | 2.339E-02 | 2.374E-02 | 2.485E-02 | 2.565E-02 |
| **u233** | 4.708E-06 | 7.562E-06 | 7.708E-06 | 8.355E-06 | 9.009E-06 |
| **u234** | 6.922E-02 | 1.184E-01 | 1.211E-01 | 1.313E-01 | 1.415E-01 |
| **u235** | 2.096E-03 | 2.100E-03 | 2.101E-03 | 2.102E-03 | 2.103E-03 |
| **u236** | 1.896E-02 | 1.928E-02 | 1.929E-02 | 1.936E-02 | 1.943E-02 |
| **u237** | 1.328E+01 | 1.055E+01 | 1.042E+01 | 9.927E+00 | 9.458E+00 |
| **u238** | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |
| **u240** | 2.003E-06 | 2.003E-06 | 2.003E-06 | 2.003E-06 | 2.003E-06 |
| **v 49** | 4.221E-16 | 1.108E-17 | 9.114E-18 | 4.234E-18 | 1.967E-18 |
| **w181** | 4.149E-15 | 2.059E-19 | 1.209E-19 | 1.500E-20 | 1.860E-21 |
| **w185** | 1.090E-12 | 1.232E-19 | 5.224E-20 | 1.798E-21 | 6.192E-23 |
| **w188** | 1.896E-14 | 6.334E-22 | 2.514E-22 | 6.697E-24 | 1.783E-25 |
| **xe127** | 1.571E-03 | 7.311E-18 | 1.244E-18 | 1.192E-21 | 1.143E-24 |
| **xe129m** | 3.221E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe131m** | 8.824E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe133** | 1.999E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-6. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/22/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **y 88** | 4.139E-01 | 5.302E-06 | 2.896E-06 | 2.700E-07 | 2.518E-08 |
| **y 89m** | 1.588E+00 | 7.529E-11 | 2.102E-11 | 1.407E-13 | 9.412E-16 |
| **y 90** | 5.276E+04 | 4.707E+04 | 4.678E+04 | 4.567E+04 | 4.459E+04 |
| **y 91** | 3.899E+04 | 4.729E-05 | 1.571E-05 | 2.081E-07 | 2.757E-09 |
| **yb169** | 8.388E-08 | 4.267E-24 | 5.698E-25 | 2.109E-28 | 0.000E+00 |
| **zn 65** | 9.544E-16 | 6.935E-18 | 5.326E-18 | 1.888E-18 | 6.690E-19 |
| **zr 88** | 1.273E-07 | 7.074E-14 | 3.266E-14 | 1.573E-15 | 7.569E-17 |
| **zr 93** | 1.804E+00 | 1.804E+00 | 1.804E+00 | 1.804E+00 | 1.804E+00 |
| **zr 95** | 9.365E+04 | 6.671E-04 | 2.438E-04 | 4.689E-06 | 9.015E-08 |
| **zr 96** | 1.792E-13 | 1.792E-13 | 1.792E-13 | 1.792E-13 | 1.792E-13 |
| **Total** | **4.862E+06** | **1.015E+06** | **9.857E+05** | **8.965E+05** | **8.331E+05** |

**Table C-7. Activity in Fuel Rod Al (low Pu loading) in Ci per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 8.608E-08 | 8.858E-08 | 8.872E-08 | 8.951E-08 | 9.030E-08 |
| **ac226** | 1.070E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ac227** | 4.893E-08 | 2.058E-07 | 2.142E-07 | 2.473E-07 | 2.804E-07 |
| **ac228** | 1.171E-11 | 1.947E-11 | 1.985E-11 | 2.129E-11 | 2.269E-11 |
| **ag105** | 2.202E-10 | 5.107E-23 | 1.072E-23 | 2.339E-26 | 5.104E-29 |
| **ag106m** | 8.093E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ag108** | 4.268E-04 | 4.236E-04 | 4.235E-04 | 4.228E-04 | 4.221E-04 |
| **ag108m** | 4.906E-03 | 4.869E-03 | 4.867E-03 | 4.859E-03 | 4.852E-03 |
| **ag109m** | 5.252E-01 | 3.888E-02 | 3.380E-02 | 1.954E-02 | 1.129E-02 |
| **ag110** | 8.298E+01 | 6.767E-01 | 5.227E-01 | 1.898E-01 | 6.893E-02 |
| **ag110m** | 6.103E+03 | 4.975E+01 | 3.843E+01 | 1.396E+01 | 5.068E+00 |
| **ag111** | 2.056E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **am241** | 9.815E+02 | 3.444E+03 | 3.560E+03 | 4.002E+03 | 4.421E+03 |
| **am242** | 2.937E+01 | 2.869E+01 | 2.866E+01 | 2.851E+01 | 2.838E+01 |
| **am242m** | 2.950E+01 | 2.882E+01 | 2.879E+01 | 2.865E+01 | 2.851E+01 |
| **am243** | 8.331E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 |
| **am244** | 1.169E-08 | 8.106E-09 | 7.948E-09 | 7.361E-09 | 6.814E-09 |
| **am245** | 5.806E-07 | 1.360E-08 | 1.112E-08 | 5.044E-09 | 2.288E-09 |
| **am246m** | 1.177E-11 | 1.176E-11 | 1.176E-11 | 1.176E-11 | 1.176E-11 |
| **ar 37** | 1.338E-14 | 1.729E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ar 39** | 4.368E-15 | 4.316E-15 | 4.312E-15 | 4.302E-15 | 4.291E-15 |
| **ar 42** | 9.267E-21 | 8.383E-21 | 8.344E-21 | 8.166E-21 | 7.994E-21 |
| **as 73** | 2.527E-06 | 8.054E-13 | 3.607E-13 | 1.545E-14 | 6.616E-16 |
| **as 74** | 1.472E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **at217** | 8.608E-08 | 8.858E-08 | 8.872E-08 | 8.951E-08 | 9.030E-08 |
| **at218** | 2.647E-13 | 1.673E-12 | 1.797E-12 | 2.343E-12 | 2.987E-12 |
| **au194** | 6.267E-21 | 6.218E-21 | 6.215E-21 | 6.205E-21 | 6.196E-21 |
| **au195** | 3.941E-16 | 6.199E-19 | 4.384E-19 | 1.126E-19 | 2.891E-20 |
| **ba131** | 3.359E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba133** | 5.547E-02 | 4.056E-02 | 3.989E-02 | 3.735E-02 | 3.497E-02 |
| **ba136m** | 6.622E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137m** | 1.181E+05 | 1.059E+05 | 1.053E+05 | 1.028E+05 | 1.005E+05 |
| **ba140** | 8.575E-01 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 10** | 3.362E-06 | 3.362E-06 | 3.362E-06 | 3.362E-06 | 3.362E-06 |
| **bi207** | 7.084E-17 | 6.384E-17 | 6.349E-17 | 6.211E-17 | 6.075E-17 |
| **bi210** | 4.038E-09 | 4.070E-09 | 4.107E-09 | 4.297E-09 | 4.572E-09 |
| **bi211** | 4.543E-08 | 2.063E-07 | 2.105E-07 | 2.478E-07 | 2.809E-07 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bi212** | 3.115E-03 | 1.858E-02 | 1.926E-02 | 2.157E-02 | 2.350E-02 |
| **bi213** | 8.608E-08 | 8.858E-08 | 8.872E-08 | 8.951E-08 | 9.030E-08 |
| **bi214** | 1.324E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.494E-08 |
| **bk247** | 1.913E-12 | 1.909E-12 | 1.909E-12 | 1.908E-12 | 1.907E-12 |
| **bk248** | 1.169E-08 | 8.106E-09 | 7.948E-09 | 7.361E-09 | 6.814E-09 |
| **bk249** | 4.004E-02 | 9.379E-04 | 7.664E-04 | 3.478E-04 | 1.577E-04 |
| **bk250** | 6.518E-08 | 8.403E-10 | 6.662E-10 | 2.693E-10 | 1.107E-10 |
| **bk251** | 6.343E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **c 14** | 1.882E-03 | 1.881E-03 | 1.881E-03 | 1.880E-03 | 1.880E-03 |
| **ca 41** | 4.661E-18 | 4.661E-18 | 4.661E-18 | 4.661E-18 | 4.661E-18 |
| **ca 45** | 1.899E-13 | 1.175E-16 | 7.909E-17 | 1.669E-17 | 3.521E-18 |
| **cd109** | 5.252E-01 | 3.888E-02 | 3.380E-02 | 1.954E-02 | 1.129E-02 |
| **cd113** | 1.059E-13 | 1.059E-13 | 1.059E-13 | 1.059E-13 | 1.059E-13 |
| **cd113m** | 8.766E-01 | 6.945E-01 | 6.853E-01 | 6.527E-01 | 6.214E-01 |
| **cd115m** | 1.451E+01 | 2.845E-11 | 6.695E-12 | 2.291E-14 | 7.836E-17 |
| **cd116** | 1.020E-15 | 1.020E-15 | 1.020E-15 | 1.020E-15 | 1.020E-15 |
| **ce139** | 9.050E+00 | 1.467E-03 | 9.182E-04 | 1.461E-04 | 2.325E-05 |
| **ce141** | 4.923E+03 | 4.408E-13 | 6.068E-14 | 2.530E-17 | 1.055E-20 |
| **ce144** | 5.365E+05 | 7.915E+03 | 6.313E+03 | 2.597E+03 | 1.069E+03 |
| **cf248** | 7.796E-08 | 2.126E-09 | 1.753E-09 | 8.205E-10 | 3.843E-10 |
| **cf249** | 1.090E-04 | 2.049E-04 | 2.052E-04 | 2.059E-04 | 2.059E-04 |
| **cf250** | 1.625E-03 | 1.263E-03 | 1.247E-03 | 1.182E-03 | 1.121E-03 |
| **cf251** | 1.221E-05 | 1.216E-05 | 1.216E-05 | 1.215E-05 | 1.214E-05 |
| **cf252** | 1.684E-03 | 4.857E-04 | 4.543E-04 | 3.496E-04 | 2.691E-04 |
| **cf253** | 5.635E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.001E-07 | 2.385E-16 | 8.219E-17 | 1.255E-18 | 1.916E-20 |
| **cl 36** | 1.477E-16 | 1.477E-16 | 1.477E-16 | 1.477E-16 | 1.477E-16 |
| **cm240** | 2.953E-07 | 1.408E-26 | 1.293E-27 | 0.000E+00 | 0.000E+00 |
| **cm241** | 3.369E-04 | 4.191E-20 | 5.872E-21 | 2.624E-24 | 1.172E-27 |
| **cm242** | 5.684E+04 | 5.948E+01 | 4.777E+01 | 2.871E+01 | 2.458E+01 |
| **cm243** | 8.212E+01 | 7.335E+01 | 7.288E+01 | 7.117E+01 | 6.952E+01 |
| **cm244** | 1.580E+04 | 1.318E+04 | 1.305E+04 | 1.256E+04 | 1.209E+04 |
| **cm245** | 3.467E+00 | 3.465E+00 | 3.465E+00 | 3.465E+00 | 3.465E+00 |
| **cm246** | 5.668E-01 | 5.665E-01 | 5.664E-01 | 5.663E-01 | 5.663E-01 |
| **cm247** | 3.037E-06 | 3.037E-06 | 3.037E-06 | 3.037E-06 | 3.037E-06 |
| **cm248** | 1.083E-05 | 1.084E-05 | 1.084E-05 | 1.084E-05 | 1.084E-05 |
| **cm249** | 1.751E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cm250** | 6.536E-11 | 6.534E-11 | 6.534E-11 | 6.533E-11 | 6.533E-11 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **co 56** | 3.803E-21 | 6.688E-28 | 2.904E-28 | 1.097E-29 | 0.000E+00 |
| **co 57** | 9.221E-16 | 1.109E-17 | 8.746E-18 | 3.447E-18 | 1.359E-18 |
| **co 58** | 1.760E-14 | 7.638E-22 | 3.076E-22 | 8.660E-24 | 2.437E-25 |
| **co 60** | 1.400E-11 | 7.500E-12 | 7.256E-12 | 6.362E-12 | 5.578E-12 |
| **co 60m** | 5.333E-21 | 5.333E-21 | 5.333E-21 | 5.333E-21 | 5.333E-21 |
| **cr 51** | 1.152E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs131** | 1.574E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 2.037E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs134** | 1.888E+05 | 3.839E+04 | 3.525E+04 | 2.520E+04 | 1.803E+04 |
| **cs135** | 6.547E-01 | 6.547E-01 | 6.547E-01 | 6.547E-01 | 6.547E-01 |
| **cs136** | 5.979E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.247E+05 | 1.118E+05 | 1.111E+05 | 1.086E+05 | 1.061E+05 |
| **dy159** | 1.323E-03 | 3.226E-07 | 2.065E-07 | 3.580E-08 | 6.209E-09 |
| **er169** | 8.654E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es252** | 9.459E-12 | 7.407E-13 | 6.463E-13 | 3.780E-13 | 2.211E-13 |
| **es253** | 1.183E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 6.514E-08 | 8.350E-10 | 6.609E-10 | 2.640E-10 | 1.055E-10 |
| **es255** | 7.922E-10 | 6.180E-23 | 1.224E-23 | 2.123E-26 | 3.682E-29 |
| **eu147** | 8.911E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 4.102E-07 | 1.022E-12 | 5.114E-13 | 3.377E-14 | 2.230E-15 |
| **eu152** | 3.979E+00 | 3.121E+00 | 3.080E+00 | 2.927E+00 | 2.781E+00 |
| **eu154** | 1.383E+04 | 9.432E+03 | 9.241E+03 | 8.529E+03 | 7.869E+03 |
| **eu155** | 6.312E+03 | 3.159E+03 | 3.045E+03 | 2.632E+03 | 2.275E+03 |
| **eu156** | 2.075E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **fe 55** | 5.760E-13 | 1.737E-13 | 1.629E-13 | 1.266E-13 | 9.835E-14 |
| **fe 59** | 4.988E-14 | 9.406E-26 | 2.208E-26 | 7.493E-29 | 0.000E+00 |
| **fe 60** | 5.333E-21 | 5.333E-21 | 5.333E-21 | 5.333E-21 | 5.333E-21 |
| **fr221** | 8.608E-08 | 8.858E-08 | 8.872E-08 | 8.951E-08 | 9.030E-08 |
| **fr223** | 6.754E-10 | 2.840E-09 | 2.956E-09 | 3.413E-09 | 3.869E-09 |
| **ga 68** | 1.910E-15 | 2.268E-17 | 1.788E-17 | 7.031E-18 | 2.763E-18 |
| **gd151** | 3.432E-04 | 2.130E-08 | 1.266E-08 | 1.646E-09 | 2.140E-10 |
| **gd152** | 1.075E-12 | 1.105E-12 | 1.107E-12 | 1.112E-12 | 1.117E-12 |
| **gd153** | 6.853E+00 | 4.630E-02 | 3.541E-02 | 1.236E-02 | 4.316E-03 |
| **ge 68** | 1.910E-15 | 2.268E-17 | 1.787E-17 | 7.025E-18 | 2.762E-18 |
| **ge 71** | 7.559E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 73m** | 2.527E-06 | 8.054E-13 | 3.607E-13 | 1.545E-14 | 6.616E-16 |
| **h3** | 6.512E+02 | 4.986E+02 | 4.915E+02 | 4.647E+02 | 4.392E+02 |
| **hf172** | 1.464E-19 | 2.522E-20 | 2.295E-20 | 1.584E-20 | 1.094E-20 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hf175** | 8.964E-12 | 3.161E-19 | 1.259E-19 | 3.390E-21 | 9.135E-23 |
| **hf177m** | 2.403E-14 | 1.346E-17 | 9.010E-18 | 1.861E-18 | 3.845E-19 |
| **hf181** | 4.653E-13 | 2.295E-25 | 5.016E-26 | 1.284E-28 | 0.000E+00 |
| **hf182** | 3.297E-19 | 3.297E-19 | 3.297E-19 | 3.297E-19 | 3.297E-19 |
| **hg194** | 6.264E-21 | 6.218E-21 | 6.215E-21 | 6.205E-21 | 6.196E-21 |
| **hg203** | 6.675E-14 | 4.246E-25 | 1.065E-25 | 4.667E-28 | 0.000E+00 |
| **hg206** | 7.671E-17 | 7.730E-17 | 7.796E-17 | 8.159E-17 | 8.680E-17 |
| **ho163** | 8.568E-08 | 8.561E-08 | 8.561E-08 | 8.561E-08 | 8.561E-08 |
| **ho166m** | 1.109E-03 | 1.106E-03 | 1.106E-03 | 1.105E-03 | 1.105E-03 |
| **i125** | 1.497E-05 | 2.468E-14 | 8.337E-15 | 1.179E-16 | 1.665E-18 |
| **i126** | 1.165E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i129** | 4.529E-02 | 4.529E-02 | 4.529E-02 | 4.529E-02 | 4.529E-02 |
| **i131** | 1.236E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113m** | 5.607E-07 | 1.644E-11 | 9.386E-12 | 1.042E-12 | 1.157E-13 |
| **in114** | 4.516E-03 | 1.311E-13 | 3.566E-14 | 2.153E-16 | 1.299E-18 |
| **in114m** | 4.668E-03 | 1.355E-13 | 3.686E-14 | 2.225E-16 | 1.343E-18 |
| **in115** | 1.942E-11 | 1.942E-11 | 1.942E-11 | 1.942E-11 | 1.942E-11 |
| **in115m** | 1.541E-03 | 3.022E-15 | 7.110E-16 | 2.434E-18 | 8.324E-21 |
| **ir190** | 5.021E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir191m** | 1.103E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir192** | 8.951E-13 | 7.684E-20 | 3.208E-20 | 1.042E-21 | 3.386E-23 |
| **ir193m** | 5.382E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir194** | 2.070E-18 | 1.196E-18 | 1.162E-18 | 1.036E-18 | 9.221E-19 |
| **k 40** | 4.901E-19 | 4.901E-19 | 4.901E-19 | 4.901E-19 | 4.901E-19 |
| **k 42** | 9.267E-21 | 8.383E-21 | 8.344E-21 | 8.166E-21 | 7.994E-21 |
| **kr 81** | 7.856E-07 | 7.856E-07 | 7.856E-07 | 7.856E-07 | 7.856E-07 |
| **kr 83m** | 7.124E-04 | 6.316E-10 | 2.990E-10 | 1.588E-11 | 8.443E-13 |
| **kr 85** | 6.502E+03 | 4.789E+03 | 4.711E+03 | 4.418E+03 | 4.142E+03 |
| **la137** | 1.828E-05 | 1.828E-05 | 1.828E-05 | 1.828E-05 | 1.828E-05 |
| **la138** | 6.389E-10 | 6.389E-10 | 6.389E-10 | 6.389E-10 | 6.389E-10 |
| **la140** | 9.894E-01 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **lu172** | 1.477E-19 | 2.522E-20 | 2.295E-20 | 1.584E-20 | 1.094E-20 |
| **lu172m** | 1.464E-19 | 2.522E-20 | 2.295E-20 | 1.584E-20 | 1.094E-20 |
| **lu173** | 4.272E-15 | 3.873E-16 | 3.405E-16 | 2.054E-16 | 1.239E-16 |
| **lu174** | 7.295E-15 | 2.792E-15 | 2.647E-15 | 2.148E-15 | 1.742E-15 |
| **lu174m** | 1.871E-15 | 3.965E-19 | 2.518E-19 | 4.239E-20 | 7.137E-21 |
| **lu176** | 3.284E-22 | 3.284E-22 | 3.284E-22 | 3.284E-22 | 3.284E-22 |
| **lu177** | 6.827E-15 | 3.824E-18 | 2.559E-18 | 5.286E-19 | 1.092E-19 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu177m** | 3.057E-14 | 1.713E-17 | 1.146E-17 | 2.368E-18 | 4.892E-19 |
| **mn 53** | 6.972E-22 | 6.972E-22 | 6.972E-22 | 6.972E-22 | 6.972E-22 |
| **mn 54** | 1.755E-13 | 3.737E-15 | 3.039E-15 | 1.351E-15 | 6.006E-16 |
| **mo 93** | 3.987E-07 | 3.984E-07 | 3.984E-07 | 3.983E-07 | 3.983E-07 |
| **mo100** | 5.508E-13 | 5.508E-13 | 5.508E-13 | 5.508E-13 | 5.508E-13 |
| **na 22** | 4.506E-19 | 1.274E-19 | 1.190E-19 | 9.122E-20 | 6.992E-20 |
| **nb 91** | 5.151E-08 | 5.127E-08 | 5.126E-08 | 5.120E-08 | 5.115E-08 |
| **nb 91m** | 1.307E-10 | 3.502E-19 | 1.214E-19 | 1.901E-21 | 2.975E-23 |
| **nb 92** | 8.641E-11 | 8.641E-11 | 8.641E-11 | 8.641E-11 | 8.641E-11 |
| **nb 92m** | 2.136E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93m** | 1.397E-01 | 3.868E-01 | 3.987E-01 | 4.440E-01 | 4.876E-01 |
| **nb 94** | 5.514E-04 | 5.513E-04 | 5.513E-04 | 5.513E-04 | 5.512E-04 |
| **nb 95** | 1.491E+05 | 1.123E-03 | 4.095E-04 | 8.120E-06 | 1.563E-07 |
| **nb 95m** | 8.159E+02 | 5.814E-06 | 2.125E-06 | 4.086E-08 | 7.856E-10 |
| **nd144** | 1.132E-09 | 1.312E-09 | 1.313E-09 | 1.314E-09 | 1.314E-09 |
| **nd147** | 3.263E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd150** | 7.737E-14 | 7.737E-14 | 7.737E-14 | 7.737E-14 | 7.737E-14 |
| **ni 59** | 6.335E-15 | 6.335E-15 | 6.335E-15 | 6.335E-15 | 6.334E-15 |
| **ni 63** | 1.427E-13 | 1.381E-13 | 1.379E-13 | 1.369E-13 | 1.359E-13 |
| **np235** | 3.377E-03 | 1.629E-04 | 1.384E-04 | 7.308E-05 | 3.859E-05 |
| **np236** | 3.264E-06 | 3.264E-06 | 3.264E-06 | 3.264E-06 | 3.264E-06 |
| **np237** | 1.357E-01 | 1.392E-01 | 1.395E-01 | 1.408E-01 | 1.421E-01 |
| **np238** | 1.354E-01 | 1.323E-01 | 1.321E-01 | 1.315E-01 | 1.309E-01 |
| **np239** | 8.331E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 | 8.324E+01 |
| **np240** | 3.240E-09 | 3.240E-09 | 3.240E-09 | 3.240E-09 | 3.240E-09 |
| **np240m** | 2.700E-06 | 2.700E-06 | 2.700E-06 | 2.700E-06 | 2.700E-06 |
| **os185** | 1.522E-15 | 4.062E-21 | 2.040E-21 | 1.367E-22 | 9.162E-24 |
| **os191** | 1.103E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **os194** | 2.070E-18 | 1.196E-18 | 1.162E-18 | 1.035E-18 | 9.221E-19 |
| **p 32** | 1.824E-18 | 3.989E-19 | 3.984E-19 | 3.966E-19 | 3.948E-19 |
| **p 33** | 2.024E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa230** | 3.109E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 1.086E-06 | 1.245E-06 | 1.253E-06 | 1.287E-06 | 1.321E-06 |
| **pa232** | 6.529E-09 | 6.529E-09 | 6.529E-09 | 6.529E-09 | 6.529E-09 |
| **pa233** | 1.357E-01 | 1.391E-01 | 1.394E-01 | 1.408E-01 | 1.421E-01 |
| **pa234** | 5.038E-04 | 5.040E-04 | 5.038E-04 | 5.038E-04 | 5.038E-04 |
| **pa234m** | 3.149E-01 | 3.150E-01 | 3.149E-01 | 3.149E-01 | 3.149E-01 |
| **pb209** | 8.608E-08 | 8.858E-08 | 8.872E-08 | 8.951E-08 | 9.030E-08 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pb210** | 4.036E-09 | 4.068E-09 | 4.104E-09 | 4.295E-09 | 4.570E-09 |
| **pb211** | 4.543E-08 | 2.063E-07 | 2.105E-07 | 2.478E-07 | 2.809E-07 |
| **pb212** | 3.115E-03 | 1.858E-02 | 1.926E-02 | 2.157E-02 | 2.350E-02 |
| **pb214** | 1.323E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.493E-08 |
| **pd103** | 2.118E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd107** | 2.834E-01 | 2.834E-01 | 2.834E-01 | 2.834E-01 | 2.834E-01 |
| **pm143** | 5.136E-09 | 5.521E-11 | 4.329E-11 | 1.666E-11 | 6.414E-12 |
| **pm144** | 1.137E-06 | 4.155E-08 | 3.479E-08 | 1.733E-08 | 8.634E-09 |
| **pm145** | 4.513E-03 | 3.779E-03 | 3.742E-03 | 3.599E-03 | 3.461E-03 |
| **pm146** | 1.345E-01 | 7.420E-02 | 7.183E-02 | 6.339E-02 | 5.593E-02 |
| **pm147** | 1.371E+05 | 3.912E+04 | 3.657E+04 | 2.809E+04 | 2.157E+04 |
| **pm148** | 2.623E+01 | 6.082E-12 | 1.276E-12 | 2.785E-15 | 6.079E-18 |
| **pm148m** | 5.433E+02 | 1.260E-10 | 2.644E-11 | 5.770E-14 | 1.259E-16 |
| **po209** | 2.852E-16 | 2.762E-16 | 2.757E-16 | 2.739E-16 | 2.720E-16 |
| **po210** | 3.555E-09 | 3.962E-09 | 3.987E-09 | 4.140E-09 | 4.367E-09 |
| **po211** | 1.254E-10 | 5.692E-10 | 5.811E-10 | 6.840E-10 | 7.757E-10 |
| **po212** | 1.995E-03 | 1.190E-02 | 1.234E-02 | 1.382E-02 | 1.506E-02 |
| **po213** | 8.416E-08 | 8.667E-08 | 8.680E-08 | 8.753E-08 | 8.832E-08 |
| **po214** | 1.393E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.493E-08 |
| **po215** | 4.543E-08 | 2.063E-07 | 2.105E-07 | 2.478E-07 | 2.809E-07 |
| **po216** | 3.115E-03 | 1.858E-02 | 1.926E-02 | 2.157E-02 | 2.350E-02 |
| **po218** | 1.324E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.494E-08 |
| **pr143** | 1.794E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 5.365E+05 | 7.915E+03 | 6.313E+03 | 2.597E+03 | 1.069E+03 |
| **pr144m** | 5.122E+03 | 7.559E+01 | 6.027E+01 | 2.480E+01 | 1.020E+01 |
| **pt193** | 7.381E-13 | 6.913E-13 | 6.886E-13 | 6.794E-13 | 6.701E-13 |
| **pu236** | 5.518E-01 | 1.746E-01 | 1.642E-01 | 1.288E-01 | 1.011E-01 |
| **pu237** | 1.332E-01 | 4.942E-13 | 1.204E-13 | 4.710E-16 | 1.843E-18 |
| **pu238** | 3.304E+03 | 3.463E+03 | 3.456E+03 | 3.429E+03 | 3.403E+03 |
| **pu239** | 6.374E+02 | 6.374E+02 | 6.374E+02 | 6.374E+02 | 6.374E+02 |
| **pu240** | 1.285E+03 | 1.291E+03 | 1.291E+03 | 1.293E+03 | 1.294E+03 |
| **pu241** | 3.651E+05 | 2.900E+05 | 2.865E+05 | 2.729E+05 | 2.600E+05 |
| **pu242** | 5.723E+00 | 5.723E+00 | 5.723E+00 | 5.723E+00 | 5.723E+00 |
| **pu243** | 3.037E-06 | 3.037E-06 | 3.037E-06 | 3.037E-06 | 3.037E-06 |
| **pu244** | 2.703E-06 | 2.703E-06 | 2.703E-06 | 2.703E-06 | 2.703E-06 |
| **pu246** | 1.177E-11 | 1.176E-11 | 1.176E-11 | 1.176E-11 | 1.176E-11 |
| **ra222** | 6.998E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ra223** | 4.543E-08 | 2.063E-07 | 2.105E-07 | 2.478E-07 | 2.809E-07 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra224** | 3.115E-03 | 1.858E-02 | 1.926E-02 | 2.157E-02 | 2.350E-02 |
| **ra225** | 8.601E-08 | 8.858E-08 | 8.878E-08 | 8.951E-08 | 9.030E-08 |
| **ra226** | 1.334E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.494E-08 |
| **ra228** | 1.171E-11 | 1.947E-11 | 1.985E-11 | 2.129E-11 | 2.269E-11 |
| **rb 83** | 9.577E-04 | 8.496E-10 | 4.023E-10 | 2.137E-11 | 1.135E-12 |
| **rb 84** | 2.874E-03 | 3.657E-19 | 5.130E-20 | 2.303E-23 | 1.034E-26 |
| **rb 86** | 9.722E-02 | 9.696E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.369E-05 | 1.369E-05 | 1.369E-05 | 1.369E-05 | 1.369E-05 |
| **re183** | 5.520E-19 | 1.946E-26 | 7.750E-27 | 2.088E-28 | 5.623E-30 |
| **re184** | 8.443E-17 | 6.414E-20 | 4.380E-20 | 9.835E-21 | 2.201E-21 |
| **re184m** | 8.311E-17 | 6.807E-20 | 4.647E-20 | 1.040E-20 | 2.328E-21 |
| **re186** | 1.746E-18 | 1.746E-18 | 1.746E-18 | 1.746E-18 | 1.746E-18 |
| **re186m** | 1.746E-18 | 1.746E-18 | 1.746E-18 | 1.746E-18 | 1.746E-18 |
| **re187** | 1.524E-20 | 1.524E-20 | 1.524E-20 | 1.524E-20 | 1.524E-20 |
| **re188** | 1.806E-14 | 6.033E-22 | 2.395E-22 | 0.000E+00 | 0.000E+00 |
| **rh 99** | 5.208E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rh101** | 5.417E-04 | 2.000E-04 | 1.896E-04 | 1.537E-04 | 1.246E-04 |
| **rh102** | 4.430E+00 | 1.536E-02 | 1.167E-02 | 4.412E-03 | 2.105E-03 |
| **rh102m** | 1.659E+00 | 6.886E-01 | 6.570E-01 | 5.460E-01 | 4.537E-01 |
| **rh103m** | 1.689E+04 | 8.614E-10 | 1.667E-10 | 2.644E-13 | 4.194E-16 |
| **rh106** | 6.484E+05 | 2.563E+04 | 2.154E+04 | 1.091E+04 | 5.524E+03 |
| **rn217** | 6.025E-12 | 6.203E-12 | 6.211E-12 | 6.267E-12 | 6.322E-12 |
| **rn218** | 6.998E-11 | 1.673E-15 | 1.797E-15 | 2.343E-15 | 2.987E-15 |
| **rn219** | 4.543E-08 | 2.063E-07 | 2.105E-07 | 2.478E-07 | 2.809E-07 |
| **rn220** | 3.115E-03 | 1.858E-02 | 1.926E-02 | 2.157E-02 | 2.350E-02 |
| **rn222** | 1.323E-09 | 8.364E-09 | 8.984E-09 | 1.171E-08 | 1.494E-08 |
| **ru103** | 1.708E+04 | 8.707E-10 | 1.685E-10 | 2.673E-13 | 4.240E-16 |
| **ru106** | 6.484E+05 | 2.563E+04 | 2.154E+04 | 1.091E+04 | 5.524E+03 |
| **s 35** | 1.253E-13 | 1.369E-19 | 6.555E-20 | 3.639E-21 | 2.020E-22 |
| **sb120m** | 1.239E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sb124** | 6.154E+01 | 1.328E-07 | 4.552E-08 | 6.807E-10 | 1.018E-11 |
| **sb125** | 1.309E+04 | 3.973E+03 | 3.727E+03 | 2.900E+03 | 2.256E+03 |
| **sb126** | 6.562E-02 | 6.527E-02 | 6.527E-02 | 6.527E-02 | 6.526E-02 |
| **sb126m** | 4.662E-01 | 4.662E-01 | 4.662E-01 | 4.662E-01 | 4.661E-01 |
| **sb127** | 2.490E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sc 45m** | 3.608E-18 | 2.233E-21 | 1.503E-21 | 3.171E-22 | 6.688E-23 |
| **sc 46** | 1.559E-12 | 9.261E-19 | 4.292E-19 | 2.096E-20 | 1.023E-21 |
| **se 75** | 1.135E-04 | 5.012E-09 | 2.926E-09 | 3.540E-10 | 4.283E-11 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **se 79** | 7.612E-02 | 7.612E-02 | 7.612E-02 | 7.612E-02 | 7.612E-02 |
| **si 32** | 4.074E-19 | 3.988E-19 | 3.983E-19 | 3.965E-19 | 3.947E-19 |
| **sm145** | 7.130E-04 | 2.083E-05 | 1.723E-05 | 8.186E-06 | 3.890E-06 |
| **sm146** | 6.959E-08 | 7.064E-08 | 7.071E-08 | 7.084E-08 | 7.097E-08 |
| **sm147** | 2.287E-06 | 4.711E-06 | 4.774E-06 | 4.984E-06 | 5.145E-06 |
| **sm148** | 6.254E-11 | 6.254E-11 | 6.254E-11 | 6.254E-11 | 6.254E-11 |
| **sm151** | 5.166E+02 | 4.981E+02 | 4.971E+02 | 4.932E+02 | 4.895E+02 |
| **sn113** | 5.603E-07 | 1.643E-11 | 9.386E-12 | 1.041E-12 | 1.156E-13 |
| **sn117m** | 1.910E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn119m** | 2.198E+02 | 3.644E+00 | 2.924E+00 | 1.233E+00 | 5.200E-01 |
| **sn121** | 3.516E+01 | 3.262E+01 | 3.249E+01 | 3.198E+01 | 3.148E+01 |
| **sn121m** | 4.530E+01 | 4.204E+01 | 4.186E+01 | 4.121E+01 | 4.056E+01 |
| **sn123** | 5.157E+02 | 4.727E-02 | 2.870E-02 | 4.050E-03 | 5.715E-04 |
| **sn125** | 6.682E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 4.662E-01 | 4.662E-01 | 4.662E-01 | 4.662E-01 | 4.661E-01 |
| **sr 85** | 3.165E-04 | 2.849E-12 | 1.054E-12 | 2.130E-14 | 4.303E-16 |
| **sr 89** | 1.274E+04 | 6.034E-07 | 1.685E-07 | 1.127E-09 | 7.546E-12 |
| **sr 90** | 4.506E+04 | 4.020E+04 | 3.995E+04 | 3.900E+04 | 3.807E+04 |
| **ta179** | 2.640E-17 | 4.332E-18 | 3.932E-18 | 2.687E-18 | 1.836E-18 |
| **ta182** | 3.596E-12 | 1.024E-16 | 5.856E-17 | 6.748E-18 | 1.038E-18 |
| **tb157** | 1.972E-05 | 1.882E-05 | 1.878E-05 | 1.860E-05 | 1.842E-05 |
| **tb158** | 1.131E-03 | 1.110E-03 | 1.109E-03 | 1.104E-03 | 1.100E-03 |
| **tb160** | 1.832E+02 | 1.115E-05 | 4.572E-06 | 1.381E-07 | 4.175E-09 |
| **tb161** | 7.434E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 7.928E-12 | 2.222E-20 | 7.724E-21 | 1.221E-22 | 0.000E+00 |
| **tc 95m** | 2.015E-10 | 5.649E-19 | 1.964E-19 | 3.103E-21 | 4.903E-23 |
| **tc 97** | 8.561E-09 | 8.627E-09 | 8.627E-09 | 8.627E-09 | 8.627E-09 |
| **tc 97m** | 1.198E-03 | 2.217E-09 | 1.092E-09 | 6.767E-11 | 4.200E-12 |
| **tc 98** | 8.799E-06 | 8.799E-06 | 8.799E-06 | 8.799E-06 | 8.799E-06 |
| **tc 99** | 1.508E+01 | 1.508E+01 | 1.508E+01 | 1.508E+01 | 1.508E+01 |
| **te121** | 1.880E-03 | 1.251E-06 | 8.443E-07 | 1.809E-07 | 3.874E-08 |
| **te121m** | 1.874E-03 | 1.247E-06 | 8.416E-07 | 1.803E-07 | 3.862E-08 |
| **te123m** | 4.014E+00 | 1.687E-04 | 9.821E-05 | 1.176E-05 | 1.408E-06 |
| **te125m** | 3.191E+03 | 9.729E+02 | 9.129E+02 | 7.097E+02 | 5.523E+02 |
| **te127** | 1.945E+03 | 3.183E-02 | 1.762E-02 | 1.729E-03 | 1.698E-04 |
| **te127m** | 1.986E+03 | 3.250E-02 | 1.799E-02 | 1.766E-03 | 1.733E-04 |
| **te128** | 4.660E-14 | 4.660E-14 | 4.660E-14 | 4.660E-14 | 4.660E-14 |
| **te129** | 1.245E+02 | 3.705E-14 | 5.440E-15 | 2.921E-18 | 1.568E-21 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **te129m** | 1.973E+02 | 5.873E-14 | 8.621E-15 | 4.629E-18 | 2.485E-21 |
| **th226** | 6.998E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **th227** | 4.585E-08 | 2.034E-07 | 2.090E-07 | 2.444E-07 | 2.771E-07 |
| **th228** | 3.155E-03 | 1.851E-02 | 1.917E-02 | 2.150E-02 | 2.342E-02 |
| **th229** | 8.601E-08 | 8.858E-08 | 8.878E-08 | 8.951E-08 | 9.030E-08 |
| **th230** | 1.673E-06 | 5.516E-06 | 5.779E-06 | 6.873E-06 | 8.054E-06 |
| **th231** | 1.569E-03 | 1.572E-03 | 1.572E-03 | 1.573E-03 | 1.574E-03 |
| **th232** | 2.683E-11 | 3.177E-11 | 3.203E-11 | 3.308E-11 | 3.413E-11 |
| **th234** | 3.149E-01 | 3.150E-01 | 3.149E-01 | 3.149E-01 | 3.149E-01 |
| **tl202** | 6.655E-23 | 0.000E+00 | 2.158E-27 | 0.000E+00 | 0.000E+00 |
| **tl204** | 3.876E-14 | 1.625E-14 | 1.551E-14 | 1.291E-14 | 1.075E-14 |
| **tl206** | 5.408E-15 | 5.452E-15 | 5.500E-15 | 5.754E-15 | 6.124E-15 |
| **tl207** | 4.530E-08 | 2.057E-07 | 2.099E-07 | 2.471E-07 | 2.801E-07 |
| **tl208** | 1.119E-03 | 6.675E-03 | 6.919E-03 | 7.750E-03 | 8.449E-03 |
| **tl209** | 1.894E-09 | 1.949E-09 | 1.952E-09 | 1.970E-09 | 1.987E-09 |
| **tl210** | 2.780E-13 | 1.756E-12 | 1.886E-12 | 2.460E-12 | 3.137E-12 |
| **tm167** | 1.503E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tm168** | 7.203E-06 | 1.795E-11 | 8.984E-12 | 5.932E-13 | 3.917E-14 |
| **tm170** | 3.049E-01 | 2.676E-05 | 1.621E-05 | 2.266E-06 | 3.169E-07 |
| **tm171** | 1.900E-01 | 3.427E-02 | 3.126E-02 | 2.179E-02 | 1.519E-02 |
| **u230** | 6.992E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 1.109E-02 | 2.579E-02 | 2.616E-02 | 2.735E-02 | 2.822E-02 |
| **u233** | 4.319E-06 | 7.341E-06 | 7.500E-06 | 8.172E-06 | 8.852E-06 |
| **u234** | 6.475E-02 | 1.115E-01 | 1.140E-01 | 1.237E-01 | 1.333E-01 |
| **u235** | 1.569E-03 | 1.572E-03 | 1.572E-03 | 1.573E-03 | 1.574E-03 |
| **u236** | 2.098E-02 | 2.117E-02 | 2.117E-02 | 2.121E-02 | 2.125E-02 |
| **u237** | 8.957E+00 | 7.117E+00 | 7.031E+00 | 6.695E+00 | 6.378E+00 |
| **u238** | 3.149E-01 | 3.149E-01 | 3.149E-01 | 3.149E-01 | 3.149E-01 |
| **u240** | 2.700E-06 | 2.700E-06 | 2.700E-06 | 2.700E-06 | 2.700E-06 |
| **v 49** | 4.277E-16 | 1.123E-17 | 9.234E-18 | 4.291E-18 | 1.993E-18 |
| **w181** | 3.415E-15 | 1.694E-19 | 9.953E-20 | 1.235E-20 | 1.531E-21 |
| **w185** | 1.202E-12 | 1.359E-19 | 5.762E-20 | 1.984E-21 | 6.833E-23 |
| **w188** | 1.787E-14 | 5.972E-22 | 2.371E-22 | 6.314E-24 | 1.681E-25 |
| **xe127** | 1.322E-03 | 6.155E-18 | 1.047E-18 | 1.003E-21 | 9.617E-25 |
| **xe129m** | 2.962E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe131m** | 6.682E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe133** | 1.524E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **y 88** | 3.454E-01 | 4.424E-06 | 2.417E-06 | 2.253E-07 | 2.101E-08 |

| Table C-7. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **y 89m** | 1.227E+00 | 5.817E-11 | 1.624E-11 | 1.087E-13 | 7.275E-16 |
| **y 90** | 4.508E+04 | 4.021E+04 | 3.996E+04 | 3.901E+04 | 3.808E+04 |
| **y 91** | 3.009E+04 | 3.650E-05 | 1.213E-05 | 1.606E-07 | 2.128E-09 |
| **yb169** | 8.021E-08 | 4.081E-24 | 5.450E-25 | 2.016E-28 | 0.000E+00 |
| **zn 65** | 1.384E-15 | 1.007E-17 | 7.724E-18 | 2.739E-18 | 9.709E-19 |
| **zr 88** | 9.182E-08 | 5.101E-14 | 2.355E-14 | 1.134E-15 | 5.457E-17 |
| **zr 93** | 1.517E+00 | 1.517E+00 | 1.517E+00 | 1.517E+00 | 1.517E+00 |
| **zr 95** | 7.130E+04 | 5.079E-04 | 1.856E-04 | 3.569E-06 | 6.866E-08 |
| **zr 96** | 1.504E-13 | 1.504E-13 | 1.504E-13 | 1.504E-13 | 1.504E-13 |
| **Total** | **3.8373E+06** | **7.7863E+05** | **7.5550E+05** | **6.8527E+05** | **6.3591E+05** |

**Table C-8. Activity in Fuel Rod Cl (medium Pu loading) in Ci per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 7.657E-08 | 7.917E-08 | 7.930E-08 | 8.010E-08 | 8.089E-08 |
| **ac226** | 1.151E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ac227** | 5.128E-08 | 2.165E-07 | 2.254E-07 | 2.606E-07 | 2.959E-07 |
| **ac228** | 1.025E-11 | 1.763E-11 | 1.799E-11 | 1.937E-11 | 2.071E-11 |
| **ag105** | 2.452E-10 | 5.685E-23 | 1.193E-23 | 2.604E-26 | 5.683E-29 |
| **ag106m** | 8.940E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ag108** | 4.578E-04 | 4.544E-04 | 4.542E-04 | 4.535E-04 | 4.528E-04 |
| **ag108m** | 5.262E-03 | 5.223E-03 | 5.221E-03 | 5.213E-03 | 5.204E-03 |
| **ag109m** | 5.350E-01 | 3.960E-02 | 3.443E-02 | 1.989E-02 | 1.150E-02 |
| **ag110** | 8.774E+01 | 7.152E-01 | 5.526E-01 | 2.007E-01 | 7.285E-02 |
| **ag110m** | 6.453E+03 | 5.260E+01 | 4.063E+01 | 1.476E+01 | 5.359E+00 |
| **ag111** | 2.278E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **am241** | 1.169E+03 | 4.079E+03 | 4.217E+03 | 4.739E+03 | 5.235E+03 |
| **am242** | 3.571E+01 | 3.489E+01 | 3.484E+01 | 3.468E+01 | 3.450E+01 |
| **am242m** | 3.587E+01 | 3.505E+01 | 3.500E+01 | 3.484E+01 | 3.466E+01 |
| **am243** | 7.996E+01 | 7.996E+01 | 7.996E+01 | 7.996E+01 | 7.996E+01 |
| **am244** | 6.933E-09 | 4.810E-09 | 4.716E-09 | 4.367E-09 | 4.043E-09 |
| **am245** | 3.577E-07 | 8.382E-09 | 6.853E-09 | 3.107E-09 | 1.409E-09 |
| **am246m** | 6.833E-12 | 6.827E-12 | 6.827E-12 | 6.827E-12 | 6.827E-12 |
| **ar 37** | 1.299E-14 | 1.680E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ar 39** | 4.264E-15 | 4.212E-15 | 4.210E-15 | 4.199E-15 | 4.188E-15 |
| **ar 42** | 7.957E-21 | 7.199E-21 | 7.159E-21 | 7.013E-21 | 6.866E-21 |
| **as 73** | 2.832E-06 | 9.020E-13 | 4.042E-13 | 1.731E-14 | 7.411E-16 |
| **as 74** | 1.626E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **at217** | 7.657E-08 | 7.917E-08 | 7.930E-08 | 8.010E-08 | 8.089E-08 |
| **at218** | 2.761E-13 | 1.732E-12 | 1.861E-12 | 2.424E-12 | 3.087E-12 |
| **au194** | 7.252E-21 | 7.199E-21 | 7.192E-21 | 7.179E-21 | 7.172E-21 |
| **au195** | 5.749E-16 | 9.040E-19 | 6.396E-19 | 1.642E-19 | 4.218E-20 |
| **ba131** | 3.584E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba133** | 5.363E-02 | 3.922E-02 | 3.857E-02 | 3.611E-02 | 3.381E-02 |
| **ba136m** | 7.797E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137m** | 1.258E+05 | 1.127E+05 | 1.121E+05 | 1.095E+05 | 1.070E+05 |
| **ba140** | 9.485E-01 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 10** | 3.104E-06 | 3.104E-06 | 3.104E-06 | 3.104E-06 | 3.104E-06 |
| **bi207** | 6.105E-17 | 5.501E-17 | 5.471E-17 | 5.352E-17 | 5.235E-17 |
| **bi210** | 4.041E-09 | 4.096E-09 | 4.134E-09 | 4.335E-09 | 4.624E-09 |
| **bi211** | 4.762E-08 | 2.170E-07 | 2.215E-07 | 2.611E-07 | 2.965E-07 |
| **bi212** | 2.869E-03 | 1.756E-02 | 1.821E-02 | 2.041E-02 | 2.226E-02 |
| **bi213** | 7.657E-08 | 7.917E-08 | 7.923E-08 | 8.010E-08 | 8.089E-08 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bi214** | 1.380E-09 | 8.661E-09 | 9.306E-09 | 1.212E-08 | 1.543E-08 |
| **bk247** | 1.117E-12 | 1.114E-12 | 1.114E-12 | 1.113E-12 | 1.113E-12 |
| **bk248** | 6.933E-09 | 4.809E-09 | 4.716E-09 | 4.366E-09 | 4.043E-09 |
| **bk249** | 2.466E-02 | 5.777E-04 | 4.723E-04 | 2.142E-04 | 9.718E-05 |
| **bk250** | 2.912E-08 | 3.762E-10 | 2.985E-10 | 1.210E-10 | 5.017E-11 |
| **bk251** | 2.754E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **c 14** | 1.765E-03 | 1.763E-03 | 1.763E-03 | 1.763E-03 | 1.763E-03 |
| **ca 41** | 4.077E-18 | 4.077E-18 | 4.077E-18 | 4.077E-18 | 4.077E-18 |
| **ca 45** | 1.795E-13 | 1.111E-16 | 7.478E-17 | 1.577E-17 | 3.329E-18 |
| **cd109** | 5.350E-01 | 3.960E-02 | 3.443E-02 | 1.989E-02 | 1.150E-02 |
| **cd113** | 1.232E-13 | 1.232E-13 | 1.232E-13 | 1.232E-13 | 1.232E-13 |
| **cd113m** | 1.009E+00 | 7.990E-01 | 7.890E-01 | 7.511E-01 | 7.152E-01 |
| **cd115m** | 1.574E+01 | 3.086E-11 | 7.265E-12 | 2.485E-14 | 8.502E-17 |
| **cd116** | 1.080E-15 | 1.080E-15 | 1.080E-15 | 1.080E-15 | 1.080E-15 |
| **ce139** | 6.095E-18 | 9.877E-22 | 6.184E-22 | 9.838E-23 | 1.566E-23 |
| **ce139** | 9.738E+00 | 1.578E-03 | 9.877E-04 | 1.572E-04 | 2.501E-05 |
| **ce141** | 5.447E+03 | 4.876E-13 | 6.714E-14 | 2.798E-17 | 1.167E-20 |
| **ce144** | 5.805E+05 | 8.568E+03 | 6.833E+03 | 2.811E+03 | 1.157E+03 |
| **cf248** | 4.510E-08 | 1.230E-09 | 1.014E-09 | 4.747E-10 | 2.223E-10 |
| **cf249** | 6.642E-05 | 1.255E-04 | 1.257E-04 | 1.261E-04 | 1.261E-04 |
| **cf250** | 9.246E-04 | 7.192E-04 | 7.092E-04 | 6.727E-04 | 6.382E-04 |
| **cf251** | 6.827E-06 | 6.800E-06 | 6.800E-06 | 6.793E-06 | 6.787E-06 |
| **cf252** | 8.256E-04 | 2.382E-04 | 2.228E-04 | 1.715E-04 | 1.319E-04 |
| **cf253** | 2.695E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 4.420E-08 | 1.053E-16 | 3.629E-17 | 5.541E-19 | 8.462E-21 |
| **cl 36** | 1.288E-16 | 1.288E-16 | 1.288E-16 | 1.288E-16 | 1.288E-16 |
| **cm240** | 3.365E-07 | 1.604E-26 | 1.473E-27 | 0.000E+00 | 0.000E+00 |
| **cm241** | 3.875E-04 | 4.821E-20 | 6.753E-21 | 3.018E-24 | 1.349E-27 |
| **cm242** | 6.367E+04 | 6.886E+01 | 5.579E+01 | 3.442E+01 | 2.979E+01 |
| **cm243** | 8.741E+01 | 7.804E+01 | 7.757E+01 | 7.578E+01 | 7.398E+01 |
| **cm244** | 1.391E+04 | 1.160E+04 | 1.149E+04 | 1.105E+04 | 1.064E+04 |
| **cm245** | 2.957E+00 | 2.955E+00 | 2.955E+00 | 2.955E+00 | 2.955E+00 |
| **cm246** | 4.166E-01 | 4.163E-01 | 4.163E-01 | 4.162E-01 | 4.162E-01 |
| **cm247** | 2.087E-06 | 2.087E-06 | 2.087E-06 | 2.087E-06 | 2.087E-06 |
| **cm248** | 6.747E-06 | 6.753E-06 | 6.753E-06 | 6.753E-06 | 6.753E-06 |
| **cm249** | 8.375E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cm250** | 3.793E-11 | 3.791E-11 | 3.791E-11 | 3.791E-11 | 3.791E-11 |
| **co 56** | 3.910E-21 | 6.880E-28 | 2.985E-28 | 1.128E-29 | 0.000E+00 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/22/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **co 57** | 9.259E-16 | 1.114E-17 | 8.787E-18 | 3.462E-18 | 1.365E-18 |
| **co 58** | 1.838E-14 | 7.983E-22 | 3.214E-22 | 9.047E-24 | 2.546E-25 |
| **co 60** | 1.268E-11 | 6.793E-12 | 6.572E-12 | 5.762E-12 | 5.053E-12 |
| **co 60m** | 4.168E-21 | 4.168E-21 | 4.168E-21 | 4.168E-21 | 4.168E-21 |
| **cr 51** | 1.111E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs131** | 1.748E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 2.256E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs134** | 1.944E+05 | 3.954E+04 | 3.629E+04 | 2.595E+04 | 1.856E+04 |
| **cs135** | 7.844E-01 | 7.844E-01 | 7.844E-01 | 7.844E-01 | 7.844E-01 |
| **cs136** | 7.039E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.328E+05 | 1.190E+05 | 1.184E+05 | 1.157E+05 | 1.130E+05 |
| **dy159** | 1.430E-03 | 3.489E-07 | 2.233E-07 | 3.872E-08 | 6.714E-09 |
| **er169** | 8.914E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es252** | 4.445E-12 | 3.482E-13 | 3.037E-13 | 1.776E-13 | 1.039E-13 |
| **es253** | 5.649E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 2.911E-08 | 3.730E-10 | 2.953E-10 | 1.179E-10 | 4.711E-11 |
| **es255** | 3.439E-10 | 2.683E-23 | 5.312E-24 | 9.219E-27 | 1.599E-29 |
| **eu147** | 1.013E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 5.164E-07 | 1.287E-12 | 6.438E-13 | 4.251E-14 | 2.808E-15 |
| **eu152** | 5.031E+00 | 3.946E+00 | 3.894E+00 | 3.700E+00 | 3.516E+00 |
| **eu154** | 1.496E+04 | 1.021E+04 | 9.997E+03 | 9.226E+03 | 8.515E+03 |
| **eu155** | 6.674E+03 | 3.341E+03 | 3.220E+03 | 2.783E+03 | 2.406E+03 |
| **eu156** | 2.164E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **fe 55** | 5.127E-13 | 1.547E-13 | 1.450E-13 | 1.127E-13 | 8.754E-14 |
| **fe 59** | 4.940E-14 | 9.312E-26 | 2.188E-26 | 7.418E-29 | 0.000E+00 |
| **fe 60** | 4.168E-21 | 4.168E-21 | 4.168E-21 | 4.168E-21 | 4.168E-21 |
| **fr221** | 7.657E-08 | 7.917E-08 | 7.930E-08 | 8.010E-08 | 8.089E-08 |
| **fr223** | 7.079E-10 | 2.987E-09 | 3.111E-09 | 3.596E-09 | 4.083E-09 |
| **ga 68** | 1.712E-15 | 2.033E-17 | 1.603E-17 | 6.301E-18 | 2.477E-18 |
| **gd151** | 4.458E-04 | 2.766E-08 | 1.645E-08 | 2.138E-09 | 2.779E-10 |
| **gd152** | 1.349E-12 | 1.387E-12 | 1.389E-12 | 1.395E-12 | 1.402E-12 |
| **gd153** | 8.754E+00 | 5.919E-02 | 4.527E-02 | 1.581E-02 | 5.517E-03 |
| **ge 68** | 1.712E-15 | 2.033E-17 | 1.603E-17 | 6.299E-18 | 2.476E-18 |
| **ge 71** | 7.518E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 73m** | 2.832E-06 | 9.020E-13 | 4.042E-13 | 1.731E-14 | 7.411E-16 |
| **h3** | 6.952E+02 | 5.323E+02 | 5.247E+02 | 4.960E+02 | 4.689E+02 |
| **hf172** | 1.555E-19 | 2.679E-20 | 2.438E-20 | 1.683E-20 | 1.163E-20 |
| **hf175** | 9.758E-12 | 3.441E-19 | 1.370E-19 | 3.690E-21 | 9.937E-23 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/22/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hf177m** | 2.565E-14 | 1.437E-17 | 9.618E-18 | 1.987E-18 | 4.105E-19 |
| **hf181** | 4.388E-13 | 2.165E-25 | 4.731E-26 | 1.210E-28 | 0.000E+00 |
| **hf182** | 2.753E-19 | 2.753E-19 | 2.753E-19 | 2.753E-19 | 2.753E-19 |
| **hg194** | 7.252E-21 | 7.199E-21 | 7.192E-21 | 7.179E-21 | 7.172E-21 |
| **hg203** | 6.446E-14 | 4.100E-25 | 1.028E-25 | 4.505E-28 | 0.000E+00 |
| **hg206** | 7.677E-17 | 7.777E-17 | 7.850E-17 | 8.229E-17 | 8.781E-17 |
| **ho163** | 9.525E-08 | 9.519E-08 | 9.519E-08 | 9.519E-08 | 9.519E-08 |
| **ho166m** | 1.137E-03 | 1.134E-03 | 1.133E-03 | 1.133E-03 | 1.132E-03 |
| **i125** | 1.682E-05 | 2.774E-14 | 9.372E-15 | 1.325E-16 | 1.872E-18 |
| **i126** | 1.314E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i129** | 4.890E-02 | 4.890E-02 | 4.890E-02 | 4.890E-02 | 4.890E-02 |
| **i131** | 1.367E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113m** | 6.301E-07 | 1.847E-11 | 1.055E-11 | 1.171E-12 | 1.300E-13 |
| **in114** | 5.443E-03 | 1.581E-13 | 4.299E-14 | 2.594E-16 | 1.566E-18 |
| **in114m** | 5.625E-03 | 1.633E-13 | 4.443E-14 | 2.681E-16 | 1.619E-18 |
| **in115** | 2.132E-11 | 2.132E-11 | 2.132E-11 | 2.132E-11 | 2.132E-11 |
| **in115m** | 1.672E-03 | 3.279E-15 | 7.717E-16 | 2.640E-18 | 9.033E-21 |
| **ir190** | 7.970E-23 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir191m** | 8.834E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir192** | 1.375E-12 | 1.181E-19 | 4.929E-20 | 1.601E-21 | 5.202E-23 |
| **ir193m** | 7.591E-20 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir194** | 1.811E-18 | 1.046E-18 | 1.016E-18 | 9.053E-19 | 8.070E-19 |
| **k 40** | 4.977E-19 | 4.977E-19 | 4.977E-19 | 4.977E-19 | 4.977E-19 |
| **k 42** | 7.957E-21 | 7.199E-21 | 7.166E-21 | 7.013E-21 | 6.866E-21 |
| **kr 81** | 8.229E-07 | 8.229E-07 | 8.229E-07 | 8.229E-07 | 8.229E-07 |
| **kr 83m** | 7.996E-04 | 7.092E-10 | 3.356E-10 | 1.783E-11 | 9.472E-13 |
| **kr 85** | 6.886E+03 | 5.074E+03 | 4.991E+03 | 4.680E+03 | 4.388E+03 |
| **la137** | 2.021E-05 | 2.021E-05 | 2.021E-05 | 2.021E-05 | 2.021E-05 |
| **la138** | 6.780E-10 | 6.780E-10 | 6.780E-10 | 6.780E-10 | 6.780E-10 |
| **la140** | 1.095E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **lu172** | 1.569E-19 | 2.679E-20 | 2.438E-20 | 1.683E-20 | 1.163E-20 |
| **lu172m** | 1.555E-19 | 2.679E-20 | 2.438E-20 | 1.683E-20 | 1.163E-20 |
| **lu173** | 4.697E-15 | 4.259E-16 | 3.744E-16 | 2.258E-16 | 1.362E-16 |
| **lu174** | 7.345E-15 | 2.814E-15 | 2.668E-15 | 2.164E-15 | 1.755E-15 |
| **lu174m** | 1.922E-15 | 4.072E-19 | 2.586E-19 | 4.354E-20 | 7.332E-21 |
| **lu176** | 3.561E-22 | 3.561E-22 | 3.561E-22 | 3.561E-22 | 3.561E-22 |
| **lu177** | 7.285E-15 | 4.082E-18 | 2.731E-18 | 5.643E-19 | 1.166E-19 |
| **lu177m** | 3.264E-14 | 1.829E-17 | 1.224E-17 | 2.528E-18 | 5.223E-19 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **mn 53** | 6.793E-22 | 6.793E-22 | 6.793E-22 | 6.793E-22 | 6.793E-22 |
| **mn 54** | 1.751E-13 | 3.728E-15 | 3.032E-15 | 1.348E-15 | 5.992E-16 |
| **mo 93** | 4.135E-07 | 4.132E-07 | 4.132E-07 | 4.130E-07 | 4.130E-07 |
| **mo100** | 5.863E-13 | 5.863E-13 | 5.863E-13 | 5.863E-13 | 5.863E-13 |
| **na 22** | 4.873E-19 | 1.377E-19 | 1.287E-19 | 9.864E-20 | 7.558E-20 |
| **nb 91** | 5.662E-08 | 5.635E-08 | 5.633E-08 | 5.627E-08 | 5.622E-08 |
| **nb 91m** | 1.467E-10 | 3.930E-19 | 1.363E-19 | 2.133E-21 | 3.339E-23 |
| **nb 92** | 9.512E-11 | 9.512E-11 | 9.512E-11 | 9.512E-11 | 9.512E-11 |
| **nb 92m** | 2.299E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93m** | 1.464E-01 | 4.084E-01 | 4.210E-01 | 4.692E-01 | 5.153E-01 |
| **nb 94** | 5.892E-04 | 5.891E-04 | 5.891E-04 | 5.891E-04 | 5.891E-04 |
| **nb 95** | 1.649E+05 | 1.241E-03 | 4.528E-04 | 8.980E-06 | 1.729E-07 |
| **nb 95m** | 9.027E+02 | 6.429E-06 | 2.349E-06 | 4.518E-08 | 8.688E-10 |
| **nd144** | 1.163E-09 | 1.358E-09 | 1.359E-09 | 1.360E-09 | 1.361E-09 |
| **nd147** | 3.603E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd150** | 8.196E-14 | 8.196E-14 | 8.196E-14 | 8.196E-14 | 8.196E-14 |
| **ni 59** | 6.575E-15 | 6.575E-15 | 6.575E-15 | 6.575E-15 | 6.575E-15 |
| **ni 63** | 1.240E-13 | 1.200E-13 | 1.198E-13 | 1.190E-13 | 1.182E-13 |
| **np235** | 3.248E-03 | 1.566E-04 | 1.331E-04 | 7.026E-05 | 3.711E-05 |
| **np236** | 3.346E-06 | 3.346E-06 | 3.346E-06 | 3.346E-06 | 3.346E-06 |
| **np237** | 1.316E-01 | 1.357E-01 | 1.361E-01 | 1.375E-01 | 1.391E-01 |
| **np238** | 1.647E-01 | 1.609E-01 | 1.607E-01 | 1.599E-01 | 1.591E-01 |
| **np239** | 7.996E+01 | 7.996E+01 | 7.996E+01 | 7.996E+01 | 7.996E+01 |
| **np240** | 2.814E-09 | 2.814E-09 | 2.814E-09 | 2.814E-09 | 2.814E-09 |
| **np240m** | 2.345E-06 | 2.345E-06 | 2.345E-06 | 2.345E-06 | 2.345E-06 |
| **os185** | 1.550E-15 | 4.138E-21 | 2.079E-21 | 1.393E-22 | 9.332E-24 |
| **os191** | 8.834E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **os194** | 1.810E-18 | 1.046E-18 | 1.016E-18 | 9.053E-19 | 8.063E-19 |
| **p 32** | 1.835E-18 | 3.787E-19 | 3.783E-19 | 3.766E-19 | 3.749E-19 |
| **p 33** | 2.087E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa230** | 3.341E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 1.135E-06 | 1.319E-06 | 1.329E-06 | 1.368E-06 | 1.407E-06 |
| **pa232** | 6.694E-09 | 6.694E-09 | 6.694E-09 | 6.694E-09 | 6.694E-09 |
| **pa233** | 1.316E-01 | 1.356E-01 | 1.359E-01 | 1.375E-01 | 1.392E-01 |
| **pa234** | 5.004E-04 | 5.006E-04 | 5.004E-04 | 5.004E-04 | 5.004E-04 |
| **pa234m** | 3.127E-01 | 3.129E-01 | 3.127E-01 | 3.127E-01 | 3.127E-01 |
| **pb209** | 7.657E-08 | 7.917E-08 | 7.930E-08 | 8.010E-08 | 8.089E-08 |
| **pb210** | 4.040E-09 | 4.094E-09 | 4.132E-09 | 4.333E-09 | 4.621E-09 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pb211** | 4.762E-08 | 2.170E-07 | 2.215E-07 | 2.611E-07 | 2.965E-07 |
| **pb212** | 2.869E-03 | 1.756E-02 | 1.821E-02 | 2.041E-02 | 2.226E-02 |
| **pb214** | 1.380E-09 | 8.661E-09 | 9.299E-09 | 1.212E-08 | 1.543E-08 |
| **pd103** | 2.172E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd107** | 3.042E-01 | 3.042E-01 | 3.042E-01 | 3.042E-01 | 3.042E-01 |
| **pm143** | 5.503E-09 | 5.915E-11 | 4.638E-11 | 1.785E-11 | 6.873E-12 |
| **pm144** | 1.209E-06 | 4.420E-08 | 3.700E-08 | 1.843E-08 | 9.180E-09 |
| **pm145** | 4.818E-03 | 4.036E-03 | 3.996E-03 | 3.843E-03 | 3.696E-03 |
| **pm146** | 1.605E-01 | 8.854E-02 | 8.575E-02 | 7.564E-02 | 6.674E-02 |
| **pm147** | 1.512E+05 | 4.316E+04 | 4.035E+04 | 3.099E+04 | 2.380E+04 |
| **pm148** | 3.010E+01 | 6.979E-12 | 1.465E-12 | 3.197E-15 | 6.973E-18 |
| **pm148m** | 6.235E+02 | 1.446E-10 | 3.034E-11 | 6.622E-14 | 1.445E-16 |
| **po209** | 2.718E-16 | 2.632E-16 | 2.628E-16 | 2.610E-16 | 2.592E-16 |
| **po210** | 3.538E-09 | 3.984E-09 | 4.011E-09 | 4.172E-09 | 4.410E-09 |
| **po211** | 1.314E-10 | 5.988E-10 | 6.114E-10 | 7.205E-10 | 8.183E-10 |
| **po212** | 1.838E-03 | 1.125E-02 | 1.167E-02 | 1.307E-02 | 1.426E-02 |
| **po213** | 7.485E-08 | 7.744E-08 | 7.750E-08 | 7.830E-08 | 7.910E-08 |
| **po214** | 1.455E-09 | 8.661E-09 | 9.299E-09 | 1.212E-08 | 1.543E-08 |
| **po215** | 4.762E-08 | 2.170E-07 | 2.215E-07 | 2.611E-07 | 2.965E-07 |
| **po216** | 2.869E-03 | 1.756E-02 | 1.821E-02 | 2.041E-02 | 2.226E-02 |
| **po218** | 1.380E-09 | 8.661E-09 | 9.306E-09 | 1.212E-08 | 1.543E-08 |
| **pr143** | 1.984E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 5.806E+05 | 8.568E+03 | 6.833E+03 | 2.811E+03 | 1.157E+03 |
| **pr144m** | 5.543E+03 | 8.176E+01 | 6.522E+01 | 2.683E+01 | 1.104E+01 |
| **pt193** | 7.511E-13 | 7.033E-13 | 7.006E-13 | 6.906E-13 | 6.813E-13 |
| **pu236** | 5.278E-01 | 1.670E-01 | 1.570E-01 | 1.232E-01 | 9.671E-02 |
| **pu237** | 1.371E-01 | 5.090E-13 | 1.240E-13 | 4.851E-16 | 1.898E-18 |
| **pu238** | 3.330E+03 | 3.522E+03 | 3.515E+03 | 3.487E+03 | 3.460E+03 |
| **pu239** | 7.465E+02 | 7.465E+02 | 7.465E+02 | 7.465E+02 | 7.465E+02 |
| **pu240** | 1.605E+03 | 1.611E+03 | 1.611E+03 | 1.612E+03 | 1.613E+03 |
| **pu241** | 4.316E+05 | 3.429E+05 | 3.387E+05 | 3.226E+05 | 3.074E+05 |
| **pu242** | 5.821E+00 | 5.821E+00 | 5.821E+00 | 5.821E+00 | 5.821E+00 |
| **pu243** | 2.087E-06 | 2.087E-06 | 2.087E-06 | 2.087E-06 | 2.087E-06 |
| **pu244** | 2.348E-06 | 2.348E-06 | 2.348E-06 | 2.348E-06 | 2.348E-06 |
| **pu246** | 6.827E-12 | 6.827E-12 | 6.827E-12 | 6.827E-12 | 6.827E-12 |
| **ra222** | 7.518E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ra223** | 4.762E-08 | 2.170E-07 | 2.215E-07 | 2.611E-07 | 2.965E-07 |
| **ra224** | 2.869E-03 | 1.756E-02 | 1.821E-02 | 2.041E-02 | 2.226E-02 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra225** | 7.651E-08 | 7.917E-08 | 7.930E-08 | 8.010E-08 | 8.089E-08 |
| **ra226** | 1.391E-09 | 8.661E-09 | 9.306E-09 | 1.212E-08 | 1.543E-08 |
| **ra228** | 1.025E-11 | 1.763E-11 | 1.799E-11 | 1.937E-11 | 2.071E-11 |
| **rb 83** | 1.075E-03 | 9.538E-10 | 4.515E-10 | 2.399E-11 | 1.274E-12 |
| **rb 84** | 3.109E-03 | 3.955E-19 | 5.548E-20 | 2.490E-23 | 1.118E-26 |
| **rb 86** | 1.037E-01 | 1.034E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.439E-05 | 1.439E-05 | 1.439E-05 | 1.439E-05 | 1.439E-05 |
| **re183** | 6.370E-19 | 2.246E-26 | 8.940E-27 | 2.409E-28 | 6.488E-30 |
| **re184** | 1.027E-16 | 7.810E-20 | 5.333E-20 | 1.198E-20 | 2.680E-21 |
| **re184m** | 1.012E-16 | 8.289E-20 | 5.659E-20 | 1.266E-20 | 2.834E-21 |
| **re186** | 1.838E-18 | 1.838E-18 | 1.838E-18 | 1.838E-18 | 1.838E-18 |
| **re186m** | 1.838E-18 | 1.838E-18 | 1.838E-18 | 1.838E-18 | 1.838E-18 |
| **re187** | 1.555E-20 | 1.555E-20 | 1.555E-20 | 1.555E-20 | 1.555E-20 |
| **re188** | 1.889E-14 | 6.310E-22 | 2.505E-22 | 0.000E+00 | 0.000E+00 |
| **rh 99** | 5.904E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rh101** | 5.872E-04 | 2.168E-04 | 2.055E-04 | 1.666E-04 | 1.350E-04 |
| **rh102** | 4.908E+00 | 1.698E-02 | 1.290E-02 | 4.858E-03 | 2.307E-03 |
| **rh102m** | 1.803E+00 | 7.491E-01 | 7.146E-01 | 5.936E-01 | 4.933E-01 |
| **rh103m** | 1.870E+04 | 9.538E-10 | 1.846E-10 | 2.928E-13 | 4.645E-16 |
| **rh106** | 7.039E+05 | 2.782E+04 | 2.339E+04 | 1.185E+04 | 5.998E+03 |
| **rn217** | 5.359E-12 | 5.541E-12 | 5.549E-12 | 5.605E-12 | 5.662E-12 |
| **rn218** | 7.518E-11 | 1.732E-15 | 1.861E-15 | 2.424E-15 | 3.087E-15 |
| **rn219** | 4.762E-08 | 2.170E-07 | 2.215E-07 | 2.611E-07 | 2.965E-07 |
| **rn220** | 2.869E-03 | 1.756E-02 | 1.821E-02 | 2.041E-02 | 2.226E-02 |
| **rn222** | 1.380E-09 | 8.661E-09 | 9.306E-09 | 1.212E-08 | 1.543E-08 |
| **ru103** | 1.891E+04 | 9.645E-10 | 1.866E-10 | 2.960E-13 | 4.695E-16 |
| **ru106** | 7.039E+05 | 2.782E+04 | 2.339E+04 | 1.185E+04 | 5.998E+03 |
| **s 35** | 1.258E-13 | 1.375E-19 | 6.582E-20 | 3.654E-21 | 2.029E-22 |
| **sb120m** | 1.344E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sb124** | 6.510E+01 | 1.405E-07 | 4.815E-08 | 7.199E-10 | 1.077E-11 |
| **sb125** | 1.409E+04 | 4.275E+03 | 4.010E+03 | 3.119E+03 | 2.427E+03 |
| **sb126** | 7.059E-02 | 7.019E-02 | 7.019E-02 | 7.019E-02 | 7.019E-02 |
| **sb126m** | 5.014E-01 | 5.014E-01 | 5.014E-01 | 5.014E-01 | 5.014E-01 |
| **sb127** | 2.756E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sc 45m** | 3.411E-18 | 2.112E-21 | 1.420E-21 | 2.997E-22 | 6.325E-23 |
| **sc 46** | 1.486E-12 | 8.834E-19 | 4.092E-19 | 1.998E-20 | 9.758E-22 |
| **se 75** | 1.213E-04 | 5.355E-09 | 3.127E-09 | 3.783E-10 | 4.576E-11 |
| **se 79** | 8.209E-02 | 8.209E-02 | 8.209E-02 | 8.209E-02 | 8.209E-02 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **si 32** | 3.869E-19 | 3.786E-19 | 3.781E-19 | 3.765E-19 | 3.748E-19 |
| **sm145** | 7.903E-04 | 2.309E-05 | 1.910E-05 | 9.080E-06 | 4.313E-06 |
| **sm146** | 7.538E-08 | 7.671E-08 | 7.671E-08 | 7.691E-08 | 7.711E-08 |
| **sm147** | 2.509E-06 | 5.183E-06 | 5.252E-06 | 5.484E-06 | 5.663E-06 |
| **sm148** | 6.551E-11 | 6.553E-11 | 6.553E-11 | 6.553E-11 | 6.553E-11 |
| **sm151** | 5.913E+02 | 5.701E+02 | 5.690E+02 | 5.647E+02 | 5.603E+02 |
| **sn113** | 6.297E-07 | 1.847E-11 | 1.054E-11 | 1.171E-12 | 1.299E-13 |
| **sn117m** | 2.066E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn119m** | 2.340E+02 | 3.879E+00 | 3.113E+00 | 1.313E+00 | 5.535E-01 |
| **sn121** | 3.747E+01 | 3.476E+01 | 3.462E+01 | 3.409E+01 | 3.355E+01 |
| **sn121m** | 4.828E+01 | 4.479E+01 | 4.461E+01 | 4.392E+01 | 4.323E+01 |
| **sn123** | 5.774E+02 | 5.292E-02 | 3.213E-02 | 4.534E-03 | 6.398E-04 |
| **sn125** | 7.405E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 5.014E-01 | 5.014E-01 | 5.014E-01 | 5.014E-01 | 5.014E-01 |
| **sr 85** | 3.314E-04 | 2.983E-12 | 1.103E-12 | 2.229E-14 | 4.505E-16 |
| **sr 89** | 1.401E+04 | 6.638E-07 | 1.854E-07 | 1.240E-09 | 8.302E-12 |
| **sr 90** | 4.741E+04 | 4.230E+04 | 4.204E+04 | 4.104E+04 | 4.006E+04 |
| **ta179** | 2.733E-17 | 4.485E-18 | 4.071E-18 | 2.782E-18 | 1.901E-18 |
| **ta182** | 3.974E-12 | 1.131E-16 | 6.462E-17 | 7.372E-18 | 1.058E-18 |
| **tb157** | 2.283E-05 | 2.179E-05 | 2.174E-05 | 2.152E-05 | 2.132E-05 |
| **tb158** | 1.240E-03 | 1.218E-03 | 1.216E-03 | 1.212E-03 | 1.207E-03 |
| **tb160** | 1.925E+02 | 1.172E-05 | 4.804E-06 | 1.452E-07 | 4.387E-09 |
| **tb161** | 8.070E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 8.814E-12 | 2.471E-20 | 8.588E-21 | 1.357E-22 | 0.000E+00 |
| **tc 95m** | 2.241E-10 | 6.282E-19 | 2.184E-19 | 3.450E-21 | 5.453E-23 |
| **tc 97** | 8.967E-09 | 9.040E-09 | 9.040E-09 | 9.040E-09 | 9.040E-09 |
| **tc 97m** | 1.310E-03 | 2.424E-09 | 1.194E-09 | 7.405E-11 | 4.592E-12 |
| **tc 98** | 9.186E-06 | 9.186E-06 | 9.186E-06 | 9.186E-06 | 9.186E-06 |
| **tc 99** | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 | 1.617E+01 |
| **te121** | 1.873E-03 | 1.246E-06 | 8.409E-07 | 1.801E-07 | 3.859E-08 |
| **te121m** | 1.866E-03 | 1.241E-06 | 8.382E-07 | 1.795E-07 | 3.847E-08 |
| **te123m** | 3.975E+00 | 1.670E-04 | 9.725E-05 | 1.165E-05 | 1.394E-06 |
| **te125m** | 3.433E+03 | 1.047E+03 | 9.818E+02 | 7.637E+02 | 5.942E+02 |
| **te127** | 2.217E+03 | 3.628E-02 | 2.008E-02 | 1.972E-03 | 1.935E-04 |
| **te127m** | 2.263E+03 | 3.704E-02 | 2.050E-02 | 2.013E-03 | 1.975E-04 |
| **te128** | 4.997E-14 | 4.997E-14 | 4.997E-14 | 4.997E-14 | 4.997E-14 |
| **te129** | 1.386E+02 | 4.124E-14 | 6.054E-15 | 3.250E-18 | 1.745E-21 |
| **te129m** | 2.197E+02 | 6.536E-14 | 9.598E-15 | 5.151E-18 | 2.766E-21 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **th226** | 7.518E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **th227** | 4.806E-08 | 2.140E-07 | 2.199E-07 | 2.575E-07 | 2.924E-07 |
| **th228** | 2.907E-03 | 1.750E-02 | 1.813E-02 | 2.035E-02 | 2.219E-02 |
| **th229** | 7.651E-08 | 7.917E-08 | 7.937E-08 | 8.010E-08 | 8.089E-08 |
| **th230** | 1.741E-06 | 5.689E-06 | 5.960E-06 | 7.079E-06 | 8.289E-06 |
| **th231** | 1.819E-03 | 1.822E-03 | 1.822E-03 | 1.823E-03 | 1.823E-03 |
| **th232** | 2.461E-11 | 2.935E-11 | 2.961E-11 | 3.062E-11 | 3.163E-11 |
| **th234** | 3.127E-01 | 3.129E-01 | 3.127E-01 | 3.127E-01 | 3.127E-01 |
| **tl202** | 6.001E-23 | 0.000E+00 | 1.644E-27 | 0.000E+00 | 0.000E+00 |
| **tl204** | 3.163E-14 | 1.326E-14 | 1.266E-14 | 1.054E-14 | 8.774E-15 |
| **tl206** | 5.413E-15 | 5.486E-15 | 5.538E-15 | 5.806E-15 | 6.192E-15 |
| **tl207** | 4.749E-08 | 2.164E-07 | 2.209E-07 | 2.604E-07 | 2.957E-07 |
| **tl208** | 1.031E-03 | 6.312E-03 | 6.545E-03 | 7.338E-03 | 8.003E-03 |
| **tl209** | 1.684E-09 | 1.742E-09 | 1.744E-09 | 1.761E-09 | 1.779E-09 |
| **tl210** | 2.899E-13 | 1.819E-12 | 1.954E-12 | 2.545E-12 | 3.242E-12 |
| **tm167** | 1.779E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tm168** | 7.671E-06 | 1.910E-11 | 9.558E-12 | 6.313E-13 | 4.168E-14 |
| **tm170** | 3.109E-01 | 2.729E-05 | 1.653E-05 | 2.311E-06 | 3.232E-07 |
| **tm171** | 1.872E-01 | 3.377E-02 | 3.081E-02 | 2.148E-02 | 1.497E-02 |
| **u230** | 7.505E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 1.038E-02 | 2.444E-02 | 2.479E-02 | 2.594E-02 | 2.677E-02 |
| **u233** | 4.489E-06 | 7.425E-06 | 7.578E-06 | 8.236E-06 | 8.900E-06 |
| **u234** | 6.680E-02 | 1.143E-01 | 1.169E-01 | 1.267E-01 | 1.365E-01 |
| **u235** | 1.818E-03 | 1.822E-03 | 1.822E-03 | 1.823E-03 | 1.823E-03 |
| **u236** | 2.017E-02 | 2.039E-02 | 2.041E-02 | 2.045E-02 | 2.051E-02 |
| **u237** | 1.059E+01 | 8.409E+00 | 8.309E+00 | 7.917E+00 | 7.538E+00 |
| **u238** | 3.127E-01 | 3.127E-01 | 3.127E-01 | 3.127E-01 | 3.127E-01 |
| **u240** | 2.345E-06 | 2.345E-06 | 2.345E-06 | 2.345E-06 | 2.345E-06 |
| **v 49** | 4.263E-16 | 1.119E-17 | 9.206E-18 | 4.276E-18 | 1.986E-18 |
| **w181** | 3.744E-15 | 1.858E-19 | 1.091E-19 | 1.353E-20 | 1.678E-21 |
| **w185** | 1.164E-12 | 1.317E-19 | 5.580E-20 | 1.921E-21 | 6.614E-23 |
| **w188** | 1.870E-14 | 6.246E-22 | 2.479E-22 | 6.603E-24 | 1.759E-25 |
| **xe127** | 1.403E-03 | 6.527E-18 | 1.111E-18 | 1.064E-21 | 1.020E-24 |
| **xe129m** | 3.038E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe131m** | 7.398E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe133** | 1.685E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **y 88** | 3.663E-01 | 4.692E-06 | 2.564E-06 | 2.390E-07 | 2.228E-08 |
| **y 89m** | 1.351E+00 | 6.399E-11 | 1.787E-11 | 1.196E-13 | 8.003E-16 |

| Table C-8. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **y 90** | 4.743E+04 | 4.231E+04 | 4.205E+04 | 4.105E+04 | 4.007E+04 |
| **y 91** | 3.312E+04 | 4.016E-05 | 1.335E-05 | 1.767E-07 | 2.342E-09 |
| **yb169** | 8.003E-08 | 4.071E-24 | 5.436E-25 | 2.011E-28 | 0.000E+00 |
| **zn 65** | 1.180E-15 | 8.575E-18 | 6.581E-18 | 2.332E-18 | 8.269E-19 |
| **zr 88** | 1.031E-07 | 5.727E-14 | 2.644E-14 | 1.273E-15 | 6.128E-17 |
| **zr 93** | 1.607E+00 | 1.607E+00 | 1.607E+00 | 1.607E+00 | 1.607E+00 |
| **zr 95** | 7.883E+04 | 5.616E-04 | 2.053E-04 | 3.947E-06 | 7.591E-08 |
| **zr 96** | 1.595E-13 | 1.595E-13 | 1.595E-13 | 1.595E-13 | 1.595E-13 |
| **Total** | **4.1852E+06** | **8.6195E+05** | **8.3677E+05** | **7.5989E+05** | **7.0569E+05** |

**Table C-9. Activity in Fuel Rod B14 (high Pu loading) in Ci per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 6.813E-08 | 7.085E-08 | 7.092E-08 | 7.178E-08 | 7.257E-08 |
| **ac226** | 1.247E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ac227** | 5.329E-08 | 2.258E-07 | 2.352E-07 | 2.723E-07 | 3.097E-07 |
| **ac228** | 8.755E-12 | 1.558E-11 | 1.591E-11 | 1.719E-11 | 1.844E-11 |
| **ag105** | 2.876E-10 | 6.668E-23 | 1.400E-23 | 3.055E-26 | 6.668E-29 |
| **ag106m** | 1.067E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ag108** | 5.272E-04 | 5.233E-04 | 5.231E-04 | 5.223E-04 | 5.214E-04 |
| **ag108m** | 6.060E-03 | 6.015E-03 | 6.012E-03 | 6.003E-03 | 5.993E-03 |
| **ag109m** | 5.758E-01 | 4.262E-02 | 3.706E-02 | 2.141E-02 | 1.237E-02 |
| **ag110** | 9.730E+01 | 7.927E-01 | 6.126E-01 | 2.224E-01 | 8.079E-02 |
| **ag110m** | 7.151E+03 | 5.830E+01 | 4.504E+01 | 1.636E+01 | 5.940E+00 |
| **ag111** | 2.699E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **am241** | 1.471E+03 | 5.109E+03 | 5.280E+03 | 5.933E+03 | 6.554E+03 |
| **am242** | 4.537E+01 | 4.432E+01 | 4.427E+01 | 4.405E+01 | 4.383E+01 |
| **am242m** | 4.557E+01 | 4.453E+01 | 4.447E+01 | 4.425E+01 | 4.403E+01 |
| **am243** | 7.741E+01 | 7.735E+01 | 7.735E+01 | 7.735E+01 | 7.735E+01 |
| **am244** | 3.835E-09 | 2.660E-09 | 2.609E-09 | 2.415E-09 | 2.236E-09 |
| **am245** | 2.029E-07 | 4.753E-09 | 3.886E-09 | 1.762E-09 | 7.993E-10 |
| **am246m** | 3.609E-12 | 3.605E-12 | 3.605E-12 | 3.605E-12 | 3.605E-12 |
| **ar 37** | 1.235E-14 | 1.597E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ar 39** | 4.119E-15 | 4.069E-15 | 4.067E-15 | 4.056E-15 | 4.046E-15 |
| **ar 42** | 6.793E-21 | 6.149E-21 | 6.116E-21 | 5.988E-21 | 5.864E-21 |
| **as 73** | 3.482E-06 | 1.109E-12 | 4.970E-13 | 2.128E-14 | 9.113E-16 |
| **as 74** | 1.950E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **at217** | 6.813E-08 | 7.085E-08 | 7.092E-08 | 7.178E-08 | 7.257E-08 |
| **at218** | 2.873E-13 | 1.799E-12 | 1.933E-12 | 2.517E-12 | 3.205E-12 |
| **au194** | 8.397E-21 | 8.331E-21 | 8.324E-21 | 8.311E-21 | 8.298E-21 |
| **au195** | 8.430E-16 | 1.326E-18 | 9.378E-19 | 2.409E-19 | 6.186E-20 |
| **ba131** | 7.814E-18 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba131** | 4.146E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba133** | 7.721E-16 | 5.649E-16 | 5.555E-16 | 5.201E-16 | 4.869E-16 |
| **ba133** | 5.408E-02 | 3.955E-02 | 3.889E-02 | 3.641E-02 | 3.409E-02 |
| **ba136m** | 9.776E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137m** | 1.307E-22 | 1.172E-22 | 1.164E-22 | 1.138E-22 | 1.112E-22 |
| **ba137m** | 1.421E+05 | 1.274E+05 | 1.267E+05 | 1.237E+05 | 1.210E+05 |
| **ba140** | 1.124E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 10** | 2.915E-06 | 2.915E-06 | 2.915E-06 | 2.915E-06 | 2.915E-06 |
| **bi210** | 4.045E-09 | 4.122E-09 | 4.164E-09 | 4.376E-09 | 4.679E-09 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bi211** | 4.951E-08 | 2.263E-07 | 2.311E-07 | 2.729E-07 | 3.103E-07 |
| **bi212** | 2.666E-03 | 1.680E-02 | 1.743E-02 | 1.956E-02 | 2.135E-02 |
| **bi213** | 6.813E-08 | 7.085E-08 | 7.092E-08 | 7.178E-08 | 7.257E-08 |
| **bi214** | 1.437E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.603E-08 |
| **bk247** | 6.064E-13 | 6.050E-13 | 6.049E-13 | 6.046E-13 | 6.043E-13 |
| **bk248** | 3.834E-09 | 2.660E-09 | 2.609E-09 | 2.415E-09 | 2.236E-09 |
| **bk249** | 1.399E-02 | 3.277E-04 | 2.679E-04 | 1.215E-04 | 5.512E-05 |
| **bk250** | 1.113E-08 | 1.442E-10 | 1.145E-10 | 4.670E-11 | 1.962E-11 |
| **bk251** | 1.011E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **c 14** | 1.666E-03 | 1.665E-03 | 1.664E-03 | 1.664E-03 | 1.664E-03 |
| **ca 41** | 3.460E-18 | 3.460E-18 | 3.460E-18 | 3.460E-18 | 3.460E-18 |
| **ca 45** | 1.660E-13 | 1.028E-16 | 6.913E-17 | 1.459E-17 | 3.079E-18 |
| **cd109** | 5.758E-01 | 4.262E-02 | 3.706E-02 | 2.141E-02 | 1.237E-02 |
| **cd113** | 1.551E-13 | 1.551E-13 | 1.551E-13 | 1.551E-13 | 1.551E-13 |
| **cd113m** | 1.254E+00 | 9.928E-01 | 9.809E-01 | 9.338E-01 | 8.888E-01 |
| **cd115m** | 1.819E+01 | 3.566E-11 | 8.391E-12 | 2.872E-14 | 9.822E-17 |
| **cd116** | 1.212E-15 | 1.212E-15 | 1.212E-15 | 1.212E-15 | 1.212E-15 |
| **ce139** | 1.122E+01 | 1.819E-03 | 1.139E-03 | 1.812E-04 | 2.883E-05 |
| **ce141** | 6.467E+03 | 5.789E-13 | 7.967E-14 | 3.322E-17 | 1.385E-20 |
| **ce144** | 6.687E+05 | 9.869E+03 | 7.874E+03 | 3.239E+03 | 1.333E+03 |
| **cf248** | 2.432E-08 | 6.634E-10 | 5.467E-10 | 2.560E-10 | 1.199E-10 |
| **cf249** | 3.728E-05 | 7.078E-05 | 7.092E-05 | 7.112E-05 | 7.118E-05 |
| **cf250** | 4.765E-04 | 3.706E-04 | 3.656E-04 | 3.467E-04 | 3.288E-04 |
| **cf251** | 3.427E-06 | 3.415E-06 | 3.414E-06 | 3.411E-06 | 3.409E-06 |
| **cf252** | 3.561E-04 | 1.027E-04 | 9.604E-05 | 7.390E-05 | 5.689E-05 |
| **cf253** | 1.122E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 1.664E-08 | 3.966E-17 | 1.367E-17 | 2.086E-19 | 3.187E-21 |
| **cl 36** | 1.088E-16 | 1.088E-16 | 1.088E-16 | 1.088E-16 | 1.088E-16 |
| **cm240** | 3.975E-07 | 1.894E-26 | 1.740E-27 | 0.000E+00 | 0.000E+00 |
| **cm241** | 4.640E-04 | 5.773E-20 | 8.086E-21 | 3.613E-24 | 1.615E-27 |
| **cm242** | 7.310E+04 | 8.258E+01 | 6.754E+01 | 4.303E+01 | 3.769E+01 |
| **cm243** | 9.478E+01 | 8.470E+01 | 8.417E+01 | 8.218E+01 | 8.026E+01 |
| **cm244** | 1.214E+04 | 1.012E+04 | 1.002E+04 | 9.650E+03 | 9.285E+03 |
| **cm245** | 2.456E+00 | 2.454E+00 | 2.454E+00 | 2.454E+00 | 2.454E+00 |
| **cm246** | 2.930E-01 | 2.928E-01 | 2.928E-01 | 2.928E-01 | 2.927E-01 |
| **cm247** | 1.358E-06 | 1.358E-06 | 1.358E-06 | 1.358E-06 | 1.358E-06 |
| **cm248** | 3.900E-06 | 3.902E-06 | 3.902E-06 | 3.902E-06 | 3.902E-06 |
| **cm249** | 3.488E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cm250** | 2.004E-11 | 2.003E-11 | 2.003E-11 | 2.003E-11 | 2.003E-11 |
| **co 56** | 4.028E-21 | 7.085E-28 | 3.075E-28 | 1.162E-29 | 0.000E+00 |
| **co 57** | 9.299E-16 | 1.119E-17 | 8.822E-18 | 3.478E-18 | 1.371E-18 |
| **co 58** | 1.939E-14 | 8.417E-22 | 3.390E-22 | 9.544E-24 | 2.686E-25 |
| **co 60** | 1.121E-11 | 6.008E-12 | 5.811E-12 | 5.095E-12 | 4.468E-12 |
| **co 60m** | 3.132E-21 | 3.132E-21 | 3.132E-21 | 3.132E-21 | 3.132E-21 |
| **cr 51** | 1.045E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs131** | 2.100E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 2.701E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs134** | 2.086E+05 | 4.242E+04 | 3.895E+04 | 2.785E+04 | 1.992E+04 |
| **cs135** | 1.004E+00 | 1.004E+00 | 1.004E+00 | 1.004E+00 | 1.004E+00 |
| **cs136** | 8.828E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.501E+05 | 1.345E+05 | 1.337E+05 | 1.307E+05 | 1.277E+05 |
| **dy159** | 1.674E-03 | 4.082E-07 | 2.612E-07 | 4.529E-08 | 7.854E-09 |
| **er169** | 9.670E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es252** | 1.836E-12 | 1.438E-13 | 1.255E-13 | 7.337E-14 | 4.291E-14 |
| **es253** | 2.349E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 1.112E-08 | 1.426E-10 | 1.129E-10 | 4.508E-11 | 1.801E-11 |
| **es255** | 1.263E-10 | 9.849E-24 | 1.950E-24 | 3.383E-27 | 5.870E-30 |
| **eu147** | 1.214E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 7.397E-07 | 1.844E-12 | 9.226E-13 | 6.092E-14 | 4.023E-15 |
| **eu152** | 7.191E+00 | 5.638E+00 | 5.565E+00 | 5.288E+00 | 5.024E+00 |
| **eu154** | 1.691E+04 | 1.154E+04 | 1.131E+04 | 1.043E+04 | 9.623E+03 |
| **eu155** | 7.383E+03 | 3.696E+03 | 3.561E+03 | 3.079E+03 | 2.661E+03 |
| **eu156** | 2.344E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **fe 55** | 4.435E-13 | 1.337E-13 | 1.255E-13 | 9.743E-14 | 7.569E-14 |
| **fe 59** | 4.787E-14 | 9.027E-26 | 2.120E-26 | 7.191E-29 | 0.000E+00 |
| **fe 60** | 3.132E-21 | 3.132E-21 | 3.132E-21 | 3.132E-21 | 3.132E-21 |
| **fr221** | 6.813E-08 | 7.085E-08 | 7.092E-08 | 7.178E-08 | 7.257E-08 |
| **fr223** | 7.357E-10 | 3.116E-09 | 3.246E-09 | 3.759E-09 | 4.274E-09 |
| **ga 68** | 1.569E-15 | 1.862E-17 | 1.468E-17 | 5.771E-18 | 2.268E-18 |
| **gd151** | 6.387E-04 | 3.964E-08 | 2.357E-08 | 3.064E-09 | 3.983E-10 |
| **gd152** | 1.850E-12 | 1.904E-12 | 1.907E-12 | 1.917E-12 | 1.926E-12 |
| **gd153** | 1.218E+01 | 8.232E-02 | 6.298E-02 | 2.198E-02 | 7.675E-03 |
| **ge 68** | 1.568E-15 | 1.862E-17 | 1.468E-17 | 5.769E-18 | 2.268E-18 |
| **ge 71** | 7.894E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 73m** | 3.482E-06 | 1.109E-12 | 4.970E-13 | 2.128E-14 | 9.113E-16 |
| **h3** | 7.879E+02 | 6.034E+02 | 5.948E+02 | 5.623E+02 | 5.315E+02 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **hf172** | 1.647E-19 | 2.837E-20 | 2.582E-20 | 1.783E-20 | 1.231E-20 |
| **hf175** | 1.034E-11 | 3.647E-19 | 1.452E-19 | 3.911E-21 | 1.053E-22 |
| **hf177m** | 2.826E-14 | 1.583E-17 | 1.060E-17 | 2.189E-18 | 4.523E-19 |
| **hf181** | 4.015E-13 | 1.980E-25 | 4.329E-26 | 1.107E-28 | 0.000E+00 |
| **hf182** | 2.207E-19 | 2.207E-19 | 2.207E-19 | 2.207E-19 | 2.207E-19 |
| **hg194** | 8.391E-21 | 8.331E-21 | 8.324E-21 | 8.311E-21 | 8.298E-21 |
| **hg203** | 6.078E-14 | 3.866E-25 | 9.690E-26 | 4.248E-28 | 0.000E+00 |
| **hg206** | 7.682E-17 | 7.827E-17 | 7.907E-17 | 8.311E-17 | 8.888E-17 |
| **ho163** | 1.178E-07 | 1.178E-07 | 1.178E-07 | 1.177E-07 | 1.177E-07 |
| **ho166m** | 1.235E-03 | 1.232E-03 | 1.231E-03 | 1.231E-03 | 1.230E-03 |
| **i125** | 2.062E-05 | 3.401E-14 | 1.149E-14 | 1.624E-16 | 2.295E-18 |
| **i126** | 1.617E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i129** | 5.619E-02 | 5.619E-02 | 5.619E-02 | 5.619E-02 | 5.619E-02 |
| **i131** | 1.627E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113m** | 7.675E-07 | 2.251E-11 | 1.285E-11 | 1.427E-12 | 1.583E-13 |
| **in114** | 7.158E-03 | 2.079E-13 | 5.654E-14 | 3.413E-16 | 2.060E-18 |
| **in114m** | 7.403E-03 | 2.149E-13 | 5.844E-14 | 3.527E-16 | 2.129E-18 |
| **in115** | 2.514E-11 | 2.515E-11 | 2.515E-11 | 2.515E-11 | 2.515E-11 |
| **in115m** | 1.933E-03 | 3.789E-15 | 8.914E-16 | 3.051E-18 | 1.044E-20 |
| **ir190** | 1.299E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir191m** | 6.668E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir192** | 2.123E-12 | 1.822E-19 | 7.609E-20 | 2.472E-21 | 8.033E-23 |
| **ir193m** | 1.074E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir194** | 1.520E-18 | 8.782E-19 | 8.530E-19 | 7.602E-19 | 6.774E-19 |
| **k 40** | 4.999E-19 | 4.999E-19 | 4.999E-19 | 4.999E-19 | 4.999E-19 |
| **k 42** | 6.793E-21 | 6.149E-21 | 6.116E-21 | 5.989E-21 | 5.864E-21 |
| **kr 81** | 9.160E-07 | 9.160E-07 | 9.160E-07 | 9.160E-07 | 9.160E-07 |
| **kr 83m** | 9.855E-04 | 8.742E-10 | 4.139E-10 | 2.199E-11 | 1.168E-12 |
| **kr 85** | 7.735E+03 | 5.695E+03 | 5.602E+03 | 5.253E+03 | 4.926E+03 |
| **la137** | 2.401E-05 | 2.401E-05 | 2.401E-05 | 2.401E-05 | 2.401E-05 |
| **la138** | 7.695E-10 | 7.695E-10 | 7.695E-10 | 7.695E-10 | 7.695E-10 |
| **la140** | 1.297E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **lu172** | 1.662E-19 | 2.837E-20 | 2.582E-20 | 1.783E-20 | 1.231E-20 |
| **lu172m** | 1.647E-19 | 2.837E-20 | 2.582E-20 | 1.783E-20 | 1.231E-20 |
| **lu173** | 5.165E-15 | 4.682E-16 | 4.116E-16 | 2.483E-16 | 1.498E-16 |
| **lu174** | 7.423E-15 | 2.844E-15 | 2.696E-15 | 2.187E-15 | 1.774E-15 |
| **lu174m** | 1.982E-15 | 4.199E-19 | 2.666E-19 | 4.490E-20 | 7.556E-21 |
| **lu176** | 3.920E-22 | 3.920E-22 | 3.920E-22 | 3.920E-22 | 3.920E-22 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu177** | 8.026E-15 | 4.498E-18 | 3.010E-18 | 6.217E-19 | 1.284E-19 |
| **lu177m** | 3.596E-14 | 2.015E-17 | 1.348E-17 | 2.785E-18 | 5.754E-19 |
| **mn 53** | 6.605E-22 | 6.605E-22 | 6.605E-22 | 6.605E-22 | 6.605E-22 |
| **mn 54** | 1.748E-13 | 3.721E-15 | 3.026E-15 | 1.345E-15 | 5.980E-16 |
| **mo 93** | 4.567E-07 | 4.563E-07 | 4.563E-07 | 4.562E-07 | 4.561E-07 |
| **mo100** | 6.622E-13 | 6.622E-13 | 6.622E-13 | 6.622E-13 | 6.622E-13 |
| **na 22** | 5.359E-19 | 1.514E-19 | 1.416E-19 | 1.085E-19 | 8.311E-20 |
| **nb 91** | 6.668E-08 | 6.634E-08 | 6.634E-08 | 6.625E-08 | 6.618E-08 |
| **nb 91m** | 1.785E-10 | 4.782E-19 | 1.658E-19 | 2.595E-21 | 4.063E-23 |
| **nb 92** | 1.123E-10 | 1.123E-10 | 1.123E-10 | 1.123E-10 | 1.123E-10 |
| **nb 92m** | 2.652E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93m** | 1.620E-01 | 4.565E-01 | 4.706E-01 | 5.247E-01 | 5.765E-01 |
| **nb 94** | 6.760E-04 | 6.760E-04 | 6.760E-04 | 6.754E-04 | 6.754E-04 |
| **nb 95** | 1.958E+05 | 1.473E-03 | 5.376E-04 | 1.066E-05 | 2.053E-07 |
| **nb 95m** | 1.072E+03 | 7.635E-06 | 2.789E-06 | 5.364E-08 | 1.032E-09 |
| **nd144** | 1.259E-09 | 1.484E-09 | 1.485E-09 | 1.486E-09 | 1.487E-09 |
| **nd147** | 4.256E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd150** | 9.193E-14 | 9.193E-14 | 9.193E-14 | 9.193E-14 | 9.193E-14 |
| **ni 59** | 6.760E-15 | 6.760E-15 | 6.760E-15 | 6.760E-15 | 6.760E-15 |
| **ni 63** | 1.045E-13 | 1.011E-13 | 1.009E-13 | 1.002E-13 | 9.955E-14 |
| **np235** | 3.157E-03 | 1.522E-04 | 1.294E-04 | 6.833E-05 | 3.607E-05 |
| **np236** | 3.508E-06 | 3.508E-06 | 3.508E-06 | 3.508E-06 | 3.508E-06 |
| **np237** | 1.276E-01 | 1.328E-01 | 1.332E-01 | 1.350E-01 | 1.370E-01 |
| **np238** | 2.092E-01 | 2.044E-01 | 2.041E-01 | 2.031E-01 | 2.021E-01 |
| **np239** | 7.741E+01 | 7.735E+01 | 7.735E+01 | 7.735E+01 | 7.735E+01 |
| **np240** | 2.433E-09 | 2.433E-09 | 2.433E-09 | 2.433E-09 | 2.433E-09 |
| **np240m** | 2.027E-06 | 2.027E-06 | 2.027E-06 | 2.027E-06 | 2.027E-06 |
| **os185** | 1.575E-15 | 4.203E-21 | 2.111E-21 | 1.414E-22 | 9.478E-24 |
| **os191** | 6.668E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **os194** | 1.519E-18 | 8.782E-19 | 8.523E-19 | 7.595E-19 | 6.767E-19 |
| **p 32** | 1.848E-18 | 3.593E-19 | 3.589E-19 | 3.572E-19 | 3.556E-19 |
| **p 33** | 2.157E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa230** | 3.623E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 1.176E-06 | 1.387E-06 | 1.398E-06 | 1.442E-06 | 1.487E-06 |
| **pa232** | 7.019E-09 | 7.019E-09 | 7.019E-09 | 7.019E-09 | 7.019E-09 |
| **pa233** | 1.275E-01 | 1.326E-01 | 1.330E-01 | 1.350E-01 | 1.370E-01 |
| **pa234** | 4.932E-04 | 4.934E-04 | 4.932E-04 | 4.932E-04 | 4.932E-04 |
| **pa234m** | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pb209** | 6.813E-08 | 7.085E-08 | 7.092E-08 | 7.178E-08 | 7.257E-08 |
| **pb210** | 4.043E-09 | 4.120E-09 | 4.162E-09 | 4.374E-09 | 4.677E-09 |
| **pb211** | 4.951E-08 | 2.263E-07 | 2.311E-07 | 2.729E-07 | 3.103E-07 |
| **pb212** | 2.666E-03 | 1.680E-02 | 1.743E-02 | 1.956E-02 | 2.135E-02 |
| **pb214** | 1.436E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.602E-08 |
| **pd103** | 2.334E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd107** | 3.470E-01 | 3.470E-01 | 3.470E-01 | 3.470E-01 | 3.470E-01 |
| **pm143** | 6.264E-09 | 6.734E-11 | 5.279E-11 | 2.032E-11 | 7.821E-12 |
| **pm144** | 1.389E-06 | 5.074E-08 | 4.249E-08 | 2.116E-08 | 1.054E-08 |
| **pm145** | 5.511E-03 | 4.618E-03 | 4.572E-03 | 4.398E-03 | 4.229E-03 |
| **pm146** | 2.151E-01 | 1.187E-01 | 1.150E-01 | 1.014E-01 | 8.947E-02 |
| **pm147** | 1.789E+05 | 5.106E+04 | 4.774E+04 | 3.666E+04 | 2.815E+04 |
| **pm148** | 3.696E+01 | 8.570E-12 | 1.799E-12 | 3.926E-15 | 8.563E-18 |
| **pm148m** | 7.655E+02 | 1.776E-10 | 3.726E-11 | 8.132E-14 | 1.774E-16 |
| **po209** | 2.595E-16 | 2.513E-16 | 2.508E-16 | 2.491E-16 | 2.474E-16 |
| **po210** | 3.517E-09 | 4.005E-09 | 4.034E-09 | 4.207E-09 | 4.458E-09 |
| **po211** | 1.367E-10 | 6.246E-10 | 6.379E-10 | 7.529E-10 | 8.563E-10 |
| **po212** | 1.708E-03 | 1.076E-02 | 1.117E-02 | 1.253E-02 | 1.367E-02 |
| **po213** | 6.668E-08 | 6.926E-08 | 6.939E-08 | 7.019E-08 | 7.098E-08 |
| **po214** | 1.518E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.602E-08 |
| **po215** | 4.951E-08 | 2.263E-07 | 2.311E-07 | 2.729E-07 | 3.103E-07 |
| **po216** | 2.666E-03 | 1.680E-02 | 1.743E-02 | 1.956E-02 | 2.135E-02 |
| **po218** | 1.437E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.603E-08 |
| **pr143** | 2.351E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 6.687E+05 | 9.869E+03 | 7.874E+03 | 3.239E+03 | 1.333E+03 |
| **pr144m** | 6.388E+03 | 9.425E+01 | 7.516E+01 | 3.093E+01 | 1.273E+01 |
| **pt193** | 7.397E-13 | 6.926E-13 | 6.899E-13 | 6.807E-13 | 6.714E-13 |
| **pu236** | 5.116E-01 | 1.618E-01 | 1.522E-01 | 1.194E-01 | 9.372E-02 |
| **pu237** | 1.495E-01 | 5.546E-13 | 1.351E-13 | 5.286E-16 | 2.069E-18 |
| **pu238** | 3.434E+03 | 3.668E+03 | 3.661E+03 | 3.633E+03 | 3.604E+03 |
| **pu239** | 9.809E+02 | 9.809E+02 | 9.809E+02 | 9.809E+02 | 9.809E+02 |
| **pu240** | 2.245E+03 | 2.249E+03 | 2.249E+03 | 2.250E+03 | 2.251E+03 |
| **pu241** | 5.394E+05 | 4.285E+05 | 4.232E+05 | 4.032E+05 | 3.841E+05 |
| **pu242** | 6.028E+00 | 6.028E+00 | 6.028E+00 | 6.028E+00 | 6.028E+00 |
| **pu243** | 1.358E-06 | 1.358E-06 | 1.358E-06 | 1.358E-06 | 1.358E-06 |
| **pu244** | 2.030E-06 | 2.030E-06 | 2.030E-06 | 2.030E-06 | 2.030E-06 |
| **pu246** | 3.607E-12 | 3.605E-12 | 3.605E-12 | 3.605E-12 | 3.605E-12 |
| **ra222** | 8.139E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ra223** | 4.951E-08 | 2.263E-07 | 2.311E-07 | 2.729E-07 | 3.103E-07 |
| **ra224** | 2.666E-03 | 1.680E-02 | 1.743E-02 | 1.956E-02 | 2.135E-02 |
| **ra225** | 6.813E-08 | 7.085E-08 | 7.098E-08 | 7.178E-08 | 7.257E-08 |
| **ra226** | 1.448E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.603E-08 |
| **ra228** | 8.755E-12 | 1.558E-11 | 1.591E-11 | 1.719E-11 | 1.844E-11 |
| **rb 83** | 1.326E-03 | 1.176E-09 | 5.568E-10 | 2.958E-11 | 1.571E-12 |
| **rb 84** | 3.610E-03 | 4.592E-19 | 6.442E-20 | 2.892E-23 | 1.298E-26 |
| **rb 86** | 1.164E-01 | 1.161E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.599E-05 | 1.599E-05 | 1.599E-05 | 1.599E-05 | 1.599E-05 |
| **re183** | 7.436E-19 | 2.623E-26 | 1.045E-26 | 2.813E-28 | 7.576E-30 |
| **re184** | 1.286E-16 | 9.783E-20 | 6.681E-20 | 1.501E-20 | 3.358E-21 |
| **re184m** | 1.269E-16 | 1.038E-19 | 7.092E-20 | 1.587E-20 | 3.550E-21 |
| **re186** | 1.919E-18 | 1.919E-18 | 1.919E-18 | 1.919E-18 | 1.919E-18 |
| **re186m** | 1.919E-18 | 1.919E-18 | 1.919E-18 | 1.919E-18 | 1.919E-18 |
| **re187** | 1.568E-20 | 1.568E-20 | 1.568E-20 | 1.568E-20 | 1.568E-20 |
| **re188** | 1.933E-14 | 6.457E-22 | 2.563E-22 | 0.000E+00 | 0.000E+00 |
| **rh 99** | 6.999E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rh101** | 6.833E-04 | 2.521E-04 | 2.390E-04 | 1.937E-04 | 1.571E-04 |
| **rh102** | 5.872E+00 | 2.026E-02 | 1.538E-02 | 5.767E-03 | 2.723E-03 |
| **rh102m** | 2.109E+00 | 8.755E-01 | 8.351E-01 | 6.939E-01 | 5.768E-01 |
| **rh103m** | 2.227E+04 | 1.136E-09 | 2.198E-10 | 3.486E-13 | 5.530E-16 |
| **rh106** | 8.159E+05 | 3.224E+04 | 2.710E+04 | 1.373E+04 | 6.946E+03 |
| **rn217** | 4.770E-12 | 4.959E-12 | 4.966E-12 | 5.024E-12 | 5.081E-12 |
| **rn218** | 8.139E-11 | 1.799E-15 | 1.933E-15 | 2.517E-15 | 3.205E-15 |
| **rn219** | 4.951E-08 | 2.263E-07 | 2.311E-07 | 2.729E-07 | 3.103E-07 |
| **rn220** | 2.666E-03 | 1.680E-02 | 1.743E-02 | 1.956E-02 | 2.135E-02 |
| **rn222** | 1.437E-09 | 8.994E-09 | 9.663E-09 | 1.258E-08 | 1.603E-08 |
| **ru103** | 2.251E+04 | 1.148E-09 | 2.222E-10 | 3.524E-13 | 5.590E-16 |
| **ru106** | 8.159E+05 | 3.224E+04 | 2.710E+04 | 1.373E+04 | 6.946E+03 |
| **s 35** | 1.251E-13 | 1.367E-19 | 6.546E-20 | 3.634E-21 | 2.017E-22 |
| **sb120m** | 1.568E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sb124** | 7.218E+01 | 1.558E-07 | 5.339E-08 | 7.986E-10 | 1.194E-11 |
| **sb125** | 1.616E+04 | 4.905E+03 | 4.600E+03 | 3.579E+03 | 2.784E+03 |
| **sb126** | 8.086E-02 | 8.039E-02 | 8.039E-02 | 8.039E-02 | 8.039E-02 |
| **sb126m** | 5.744E-01 | 5.744E-01 | 5.744E-01 | 5.744E-01 | 5.744E-01 |
| **sb127** | 3.301E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sc 45m** | 3.154E-18 | 1.953E-21 | 1.314E-21 | 2.772E-22 | 5.849E-23 |
| **sc 46** | 1.378E-12 | 8.185E-19 | 3.792E-19 | 1.852E-20 | 9.040E-22 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **se 75** | 1.377E-04 | 6.082E-09 | 3.550E-09 | 4.296E-10 | 5.197E-11 |
| **se 79** | 9.425E-02 | 9.425E-02 | 9.425E-02 | 9.425E-02 | 9.425E-02 |
| **si 32** | 3.670E-19 | 3.592E-19 | 3.588E-19 | 3.572E-19 | 3.555E-19 |
| **sm145** | 9.398E-04 | 2.746E-05 | 2.271E-05 | 1.080E-05 | 5.129E-06 |
| **sm146** | 8.729E-08 | 8.908E-08 | 8.914E-08 | 8.941E-08 | 8.961E-08 |
| **sm147** | 2.935E-06 | 6.099E-06 | 6.181E-06 | 6.455E-06 | 6.668E-06 |
| **sm148** | 7.191E-11 | 7.191E-11 | 7.191E-11 | 7.191E-11 | 7.191E-11 |
| **sm151** | 7.337E+02 | 7.072E+02 | 7.059E+02 | 7.006E+02 | 6.952E+02 |
| **sn113** | 7.675E-07 | 2.249E-11 | 1.284E-11 | 1.426E-12 | 1.583E-13 |
| **sn117m** | 2.387E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn119m** | 2.646E+02 | 4.387E+00 | 3.520E+00 | 1.485E+00 | 6.260E-01 |
| **sn121** | 4.239E+01 | 3.933E+01 | 3.917E+01 | 3.856E+01 | 3.796E+01 |
| **sn121m** | 5.462E+01 | 5.068E+01 | 5.048E+01 | 4.968E+01 | 4.891E+01 |
| **sn123** | 7.059E+02 | 6.467E-02 | 3.927E-02 | 5.541E-03 | 7.821E-04 |
| **sn125** | 8.914E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 5.744E-01 | 5.744E-01 | 5.744E-01 | 5.744E-01 | 5.744E-01 |
| **sr 85** | 3.723E-04 | 3.350E-12 | 1.240E-12 | 2.505E-14 | 5.060E-16 |
| **sr 89** | 1.647E+04 | 7.807E-07 | 2.179E-07 | 1.458E-09 | 9.756E-12 |
| **sr 90** | 5.274E+04 | 4.704E+04 | 4.675E+04 | 4.565E+04 | 4.456E+04 |
| **ta179** | 2.843E-17 | 4.665E-18 | 4.234E-18 | 2.894E-18 | 1.978E-18 |
| **ta182** | 4.389E-12 | 1.249E-16 | 7.125E-17 | 8.053E-18 | 1.084E-18 |
| **tb157** | 2.924E-05 | 2.792E-05 | 2.785E-05 | 2.758E-05 | 2.731E-05 |
| **tb158** | 1.473E-03 | 1.446E-03 | 1.445E-03 | 1.439E-03 | 1.434E-03 |
| **tb160** | 2.122E+02 | 1.292E-05 | 5.295E-06 | 1.600E-07 | 4.835E-09 |
| **tb161** | 9.299E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tc 95** | 1.021E-11 | 2.863E-20 | 9.948E-21 | 1.572E-22 | 0.000E+00 |
| **tc 95m** | 2.595E-10 | 7.277E-19 | 2.529E-19 | 3.997E-21 | 6.316E-23 |
| **tc 97** | 1.003E-08 | 1.011E-08 | 1.011E-08 | 1.011E-08 | 1.011E-08 |
| **tc 97m** | 1.544E-03 | 2.855E-09 | 1.406E-09 | 8.722E-11 | 5.408E-12 |
| **tc 98** | 1.025E-05 | 1.025E-05 | 1.025E-05 | 1.025E-05 | 1.025E-05 |
| **tc 99** | 1.845E+01 | 1.844E+01 | 1.844E+01 | 1.844E+01 | 1.844E+01 |
| **te121** | 2.409E-20 | 1.601E-23 | 1.081E-23 | 2.006E-29 | 0.000E+00 |
| **te121** | 1.956E-03 | 1.300E-06 | 8.782E-07 | 1.881E-07 | 4.029E-08 |
| **te121m** | 1.949E-03 | 1.296E-06 | 8.755E-07 | 1.875E-07 | 4.016E-08 |
| **te123m** | 4.048E+00 | 1.701E-04 | 9.902E-05 | 1.186E-05 | 1.420E-06 |
| **te125m** | 3.938E+03 | 1.201E+03 | 1.127E+03 | 8.762E+02 | 6.820E+02 |
| **te127** | 2.758E+03 | 4.513E-02 | 2.499E-02 | 2.452E-03 | 2.407E-04 |
| **te127m** | 2.816E+03 | 4.608E-02 | 2.550E-02 | 2.504E-03 | 2.458E-04 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **te128** | 5.704E-14 | 5.704E-14 | 5.704E-14 | 5.704E-14 | 5.704E-14 |
| **te129** | 1.667E+02 | 4.960E-14 | 7.284E-15 | 3.910E-18 | 2.099E-21 |
| **te129m** | 2.642E+02 | 7.860E-14 | 1.155E-14 | 6.197E-18 | 3.327E-21 |
| **th226** | 8.139E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **th227** | 4.997E-08 | 2.232E-07 | 2.294E-07 | 2.692E-07 | 3.060E-07 |
| **th228** | 2.703E-03 | 1.674E-02 | 1.734E-02 | 1.949E-02 | 2.128E-02 |
| **th229** | 6.813E-08 | 7.085E-08 | 7.105E-08 | 7.178E-08 | 7.257E-08 |
| **th230** | 1.812E-06 | 5.903E-06 | 6.184E-06 | 7.344E-06 | 8.603E-06 |
| **th231** | 2.085E-03 | 2.090E-03 | 2.090E-03 | 2.090E-03 | 2.092E-03 |
| **th232** | 2.198E-11 | 2.646E-11 | 2.670E-11 | 2.766E-11 | 2.861E-11 |
| **th234** | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |
| **tl202** | 5.340E-23 | 0.000E+00 | 1.208E-27 | 0.000E+00 | 0.000E+00 |
| **tl204** | 2.473E-14 | 1.037E-14 | 9.895E-15 | 8.238E-15 | 6.860E-15 |
| **tl206** | 5.417E-15 | 5.521E-15 | 5.577E-15 | 5.860E-15 | 6.266E-15 |
| **tl207** | 4.937E-08 | 2.257E-07 | 2.305E-07 | 2.721E-07 | 3.094E-07 |
| **tl208** | 9.584E-04 | 6.038E-03 | 6.264E-03 | 7.032E-03 | 7.675E-03 |
| **tl209** | 1.499E-09 | 1.558E-09 | 1.561E-09 | 1.579E-09 | 1.597E-09 |
| **tl210** | 3.017E-13 | 1.890E-12 | 2.029E-12 | 2.642E-12 | 3.365E-12 |
| **tm167** | 2.530E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tm168** | 8.815E-06 | 2.196E-11 | 1.099E-11 | 7.257E-13 | 4.793E-14 |
| **tm170** | 5.704E-23 | 5.006E-27 | 3.032E-27 | 4.240E-28 | 5.929E-29 |
| **tm170** | 3.312E-01 | 2.906E-05 | 1.761E-05 | 2.462E-06 | 3.442E-07 |
| **tm171** | 1.904E-01 | 3.434E-02 | 3.132E-02 | 2.184E-02 | 1.522E-02 |
| **u230** | 8.132E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **u232** | 9.809E-03 | 2.346E-02 | 2.379E-02 | 2.491E-02 | 2.572E-02 |
| **u233** | 4.700E-06 | 7.556E-06 | 7.708E-06 | 8.351E-06 | 9.007E-06 |
| **u234** | 6.919E-02 | 1.186E-01 | 1.212E-01 | 1.315E-01 | 1.417E-01 |
| **u235** | 2.085E-03 | 2.090E-03 | 2.090E-03 | 2.090E-03 | 2.092E-03 |
| **u236** | 1.900E-02 | 1.931E-02 | 1.933E-02 | 1.939E-02 | 1.946E-02 |
| **u237** | 1.324E+01 | 1.051E+01 | 1.039E+01 | 9.889E+00 | 9.425E+00 |
| **u238** | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 | 3.083E-01 |
| **u240** | 2.027E-06 | 2.027E-06 | 2.027E-06 | 2.027E-06 | 2.027E-06 |
| **v 49** | 4.246E-16 | 1.114E-17 | 9.166E-18 | 4.258E-18 | 1.978E-18 |
| **w181** | 4.162E-15 | 2.065E-19 | 1.214E-19 | 1.504E-20 | 1.866E-21 |
| **w185** | 1.099E-12 | 1.243E-19 | 5.268E-20 | 1.813E-21 | 6.244E-23 |
| **w188** | 1.913E-14 | 6.391E-22 | 2.537E-22 | 6.754E-24 | 1.799E-25 |
| **xe127** | 1.577E-03 | 7.344E-18 | 1.249E-18 | 1.197E-21 | 1.147E-24 |
| **xe129m** | 3.240E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-9. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **xe131m** | 8.822E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe133** | 1.998E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **y 88** | 4.148E-01 | 5.312E-06 | 2.902E-06 | 2.705E-07 | 2.523E-08 |
| **y 89m** | 1.588E+00 | 7.522E-11 | 2.101E-11 | 1.406E-13 | 9.405E-16 |
| **y 90** | 5.275E+04 | 4.705E+04 | 4.677E+04 | 4.565E+04 | 4.457E+04 |
| **y 91** | 3.897E+04 | 4.726E-05 | 1.571E-05 | 2.080E-07 | 2.756E-09 |
| **yb169** | 8.417E-08 | 4.282E-24 | 5.717E-25 | 2.116E-28 | 0.000E+00 |
| **zn 65** | 9.663E-16 | 7.025E-18 | 5.392E-18 | 1.911E-18 | 6.774E-19 |
| **zr 88** | 1.271E-07 | 7.059E-14 | 3.260E-14 | 1.569E-15 | 7.556E-17 |
| **zr 93** | 1.803E+00 | 1.803E+00 | 1.803E+00 | 1.803E+00 | 1.803E+00 |
| **zr 95** | 9.358E+04 | 6.668E-04 | 2.436E-04 | 4.686E-06 | 9.014E-08 |
| **zr 96** | 1.791E-13 | 1.791E-13 | 1.791E-13 | 1.791E-13 | 1.791E-13 |
| **Total** | **4.8602E+06** | **1.0134E+06** | **9.8416E+05** | **8.9490E+05** | **8.3167E+05** |

**Table C-10. Activity in Fuel Rod K5 (high Pu loading) in Ci per MTIHM**

| | 1/22/2009 | 10/21/2013 | 1/22/2014 | 1/22/2015 | 1/22/2016 |
|---|---|---|---|---|---|
| **ac225** | 4.458E-08 | 4.712E-08 | 4.723E-08 | 4.799E-08 | 4.874E-08 |
| **ac226** | 1.167E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ac227** | 5.515E-08 | 2.344E-07 | 2.443E-07 | 2.833E-07 | 3.229E-07 |
| **ac228** | 7.095E-12 | 1.349E-11 | 1.381E-11 | 1.499E-11 | 1.616E-11 |
| **ag105** | 2.104E-10 | 4.878E-23 | 1.024E-23 | 2.234E-26 | 4.876E-29 |
| **ag106m** | 9.093E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ag108** | 4.056E-04 | 4.026E-04 | 4.024E-04 | 4.018E-04 | 4.011E-04 |
| **ag108m** | 4.662E-03 | 4.627E-03 | 4.625E-03 | 4.618E-03 | 4.610E-03 |
| **ag109m** | 3.860E-01 | 2.856E-02 | 2.484E-02 | 1.436E-02 | 8.297E-03 |
| **ag110** | 7.686E+01 | 6.264E-01 | 4.839E-01 | 1.758E-01 | 6.381E-02 |
| **ag110m** | 5.650E+03 | 4.606E+01 | 3.558E+01 | 1.292E+01 | 4.692E+00 |
| **ag111** | 2.480E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **am241** | 1.403E+03 | 4.874E+03 | 5.038E+03 | 5.660E+03 | 6.252E+03 |
| **am242** | 4.274E+01 | 4.176E+01 | 4.171E+01 | 4.150E+01 | 4.130E+01 |
| **am242m** | 4.294E+01 | 4.195E+01 | 4.189E+01 | 4.170E+01 | 4.149E+01 |
| **am243** | 5.430E+01 | 5.428E+01 | 5.427E+01 | 5.427E+01 | 5.427E+01 |
| **am244** | 8.894E-10 | 6.168E-10 | 6.048E-10 | 5.600E-10 | 5.184E-10 |
| **am245** | 5.528E-08 | 1.295E-09 | 1.059E-09 | 4.803E-10 | 2.178E-10 |
| **am246m** | 8.370E-13 | 8.363E-13 | 8.363E-13 | 8.363E-13 | 8.363E-13 |
| **ar 37** | 1.103E-14 | 1.426E-29 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ar 39** | 3.664E-15 | 3.620E-15 | 3.617E-15 | 3.608E-15 | 3.599E-15 |
| **ar 42** | 5.100E-21 | 4.615E-21 | 4.590E-21 | 4.495E-21 | 4.401E-21 |
| **as 73** | 3.461E-06 | 1.103E-12 | 4.941E-13 | 2.116E-14 | 9.060E-16 |
| **as 74** | 1.652E-07 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **at217** | 4.459E-08 | 4.712E-08 | 4.723E-08 | 4.799E-08 | 4.874E-08 |
| **at218** | 3.127E-13 | 1.876E-12 | 2.009E-12 | 2.590E-12 | 3.266E-12 |
| **au194** | 8.217E-21 | 8.157E-21 | 8.151E-21 | 8.137E-21 | 8.124E-21 |
| **au195** | 1.029E-15 | 1.619E-18 | 1.145E-18 | 2.940E-19 | 7.553E-20 |
| **ba131** | 2.733E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba133** | 3.286E-02 | 2.403E-02 | 2.364E-02 | 2.213E-02 | 2.071E-02 |
| **ba136m** | 8.708E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ba137m** | 1.227E+05 | 1.100E+05 | 1.093E+05 | 1.069E+05 | 1.044E+05 |
| **ba140** | 1.067E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **be 10** | 2.068E-06 | 2.068E-06 | 2.068E-06 | 2.068E-06 | 2.068E-06 |
| **bi210** | 3.485E-09 | 3.678E-09 | 3.726E-09 | 3.963E-09 | 4.289E-09 |
| **bi211** | 5.126E-08 | 2.348E-07 | 2.399E-07 | 2.839E-07 | 3.235E-07 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **bi212** | 1.965E-03 | 1.280E-02 | 1.328E-02 | 1.493E-02 | 1.631E-02 |
| **bi213** | 4.458E-08 | 4.712E-08 | 4.723E-08 | 4.799E-08 | 4.874E-08 |
| **bi214** | 1.563E-09 | 9.378E-09 | 1.005E-08 | 1.295E-08 | 1.633E-08 |
| **bk247** | 1.377E-13 | 1.373E-13 | 1.373E-13 | 1.373E-13 | 1.372E-13 |
| **bk248** | 8.887E-10 | 6.167E-10 | 6.047E-10 | 5.599E-10 | 5.184E-10 |
| **bk249** | 3.812E-03 | 8.927E-05 | 7.301E-05 | 3.311E-05 | 1.502E-05 |
| **bk250** | 1.573E-09 | 2.053E-11 | 1.633E-11 | 6.743E-12 | 2.918E-12 |
| **bk251** | 1.256E-12 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **c 14** | 1.369E-03 | 1.368E-03 | 1.367E-03 | 1.367E-03 | 1.367E-03 |
| **ca 41** | 2.859E-18 | 2.859E-18 | 2.859E-18 | 2.859E-18 | 2.859E-18 |
| **ca 45** | 1.451E-13 | 8.980E-17 | 6.043E-17 | 1.275E-17 | 2.690E-18 |
| **cd109** | 3.860E-01 | 2.856E-02 | 2.484E-02 | 1.436E-02 | 8.297E-03 |
| **cd113** | 1.653E-13 | 1.653E-13 | 1.653E-13 | 1.653E-13 | 1.653E-13 |
| **cd113m** | 1.284E+00 | 1.017E+00 | 1.004E+00 | 9.558E-01 | 9.100E-01 |
| **cd115m** | 1.679E+01 | 3.292E-11 | 7.746E-12 | 2.651E-14 | 9.067E-17 |
| **cd116** | 1.050E-15 | 1.050E-15 | 1.050E-15 | 1.050E-15 | 1.050E-15 |
| **ce139** | 8.615E+00 | 1.397E-03 | 8.748E-04 | 1.391E-04 | 2.214E-05 |
| **ce141** | 6.167E+03 | 5.522E-13 | 7.600E-14 | 3.169E-17 | 1.321E-20 |
| **ce144** | 6.073E+05 | 8.960E+03 | 7.148E+03 | 2.940E+03 | 1.210E+03 |
| **cf248** | 5.476E-09 | 1.493E-10 | 1.231E-10 | 5.765E-11 | 2.700E-11 |
| **cf249** | 1.010E-05 | 1.923E-05 | 1.926E-05 | 1.932E-05 | 1.933E-05 |
| **cf250** | 1.144E-04 | 8.894E-05 | 8.774E-05 | 8.317E-05 | 7.892E-05 |
| **cf251** | 7.686E-07 | 7.653E-07 | 7.653E-07 | 7.646E-07 | 7.640E-07 |
| **cf252** | 6.473E-05 | 1.866E-05 | 1.746E-05 | 1.344E-05 | 1.034E-05 |
| **cf253** | 1.801E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cf254** | 2.266E-09 | 5.399E-18 | 1.860E-18 | 2.841E-20 | 4.337E-22 |
| **cl 36** | 9.007E-17 | 9.007E-17 | 9.007E-17 | 9.007E-17 | 9.007E-17 |
| **cm240** | 2.886E-07 | 1.376E-26 | 1.264E-27 | 0.000E+00 | 0.000E+00 |
| **cm241** | 3.447E-04 | 4.288E-20 | 6.007E-21 | 2.684E-24 | 1.199E-27 |
| **cm242** | 5.956E+04 | 7.201E+01 | 5.973E+01 | 3.970E+01 | 3.534E+01 |
| **cm243** | 6.883E+01 | 6.147E+01 | 6.110E+01 | 5.966E+01 | 5.826E+01 |
| **cm244** | 7.215E+03 | 6.019E+03 | 5.960E+03 | 5.737E+03 | 5.522E+03 |
| **cm245** | 1.282E+00 | 1.281E+00 | 1.281E+00 | 1.281E+00 | 1.280E+00 |
| **cm246** | 1.216E-01 | 1.215E-01 | 1.215E-01 | 1.215E-01 | 1.215E-01 |
| **cm247** | 4.839E-07 | 4.839E-07 | 4.839E-07 | 4.839E-07 | 4.839E-07 |
| **cm248** | 1.172E-06 | 1.173E-06 | 1.173E-06 | 1.173E-06 | 1.173E-06 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **cm249** | 5.596E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cm250** | 4.647E-12 | 4.645E-12 | 4.645E-12 | 4.645E-12 | 4.644E-12 |
| **co 56** | 3.641E-21 | 6.405E-28 | 2.780E-28 | 1.051E-29 | 0.000E+00 |
| **co 57** | 8.224E-16 | 9.896E-18 | 7.805E-18 | 3.076E-18 | 1.213E-18 |
| **co 58** | 1.861E-14 | 8.084E-22 | 3.254E-22 | 9.159E-24 | 2.578E-25 |
| **co 60** | 9.359E-12 | 5.015E-12 | 4.850E-12 | 4.253E-12 | 3.729E-12 |
| **co 60m** | 2.178E-21 | 2.178E-21 | 2.178E-21 | 2.178E-21 | 2.178E-21 |
| **cr 51** | 9.186E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs131** | 1.707E-10 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs132** | 2.152E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs134** | 1.598E+05 | 3.250E+04 | 2.984E+04 | 2.134E+04 | 1.526E+04 |
| **cs135** | 9.677E-01 | 9.677E-01 | 9.677E-01 | 9.677E-01 | 9.677E-01 |
| **cs136** | 7.859E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **cs137** | 1.296E+05 | 1.162E+05 | 1.154E+05 | 1.128E+05 | 1.102E+05 |
| **dy159** | 1.213E-03 | 2.957E-07 | 1.892E-07 | 3.281E-08 | 5.690E-09 |
| **er169** | 7.998E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es252** | 2.644E-13 | 2.071E-14 | 1.807E-14 | 1.057E-14 | 6.180E-15 |
| **es253** | 3.771E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **es254** | 1.572E-09 | 2.015E-11 | 1.595E-11 | 6.370E-12 | 2.545E-12 |
| **es255** | 1.568E-11 | 1.224E-24 | 2.423E-25 | 4.203E-28 | 0.000E+00 |
| **eu147** | 9.027E-14 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **eu149** | 7.719E-07 | 1.923E-12 | 9.624E-13 | 6.354E-14 | 4.196E-15 |
| **eu152** | 8.516E+00 | 6.677E+00 | 6.591E+00 | 6.263E+00 | 5.950E+00 |
| **eu154** | 1.361E+04 | 9.286E+03 | 9.100E+03 | 8.396E+03 | 7.746E+03 |
| **eu155** | 5.978E+03 | 2.993E+03 | 2.883E+03 | 2.492E+03 | 2.154E+03 |
| **eu156** | 1.756E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **fe 55** | 3.714E-13 | 1.120E-13 | 1.050E-13 | 8.157E-14 | 6.339E-14 |
| **fe 59** | 4.284E-14 | 8.078E-26 | 1.896E-26 | 6.435E-29 | 0.000E+00 |
| **fe 60** | 2.178E-21 | 2.178E-21 | 2.178E-21 | 2.178E-21 | 2.178E-21 |
| **fr221** | 4.459E-08 | 4.712E-08 | 4.723E-08 | 4.799E-08 | 4.874E-08 |
| **fr223** | 7.613E-10 | 3.234E-09 | 3.370E-09 | 3.911E-09 | 4.456E-09 |
| **ga 68** | 9.478E-16 | 1.126E-17 | 8.874E-18 | 3.488E-18 | 1.371E-18 |
| **gd151** | 5.988E-04 | 3.716E-08 | 2.210E-08 | 2.872E-09 | 3.733E-10 |
| **gd152** | 1.921E-12 | 1.985E-12 | 1.988E-12 | 1.999E-12 | 2.010E-12 |
| **gd153** | 1.220E+01 | 8.244E-02 | 6.307E-02 | 2.202E-02 | 7.686E-03 |
| **ge 68** | 9.478E-16 | 1.126E-17 | 8.874E-18 | 3.487E-18 | 1.371E-18 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ge 71** | 5.751E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ge 73m** | 3.461E-06 | 1.103E-12 | 4.941E-13 | 2.116E-14 | 9.060E-16 |
| **h3** | 6.781E+02 | 5.194E+02 | 5.121E+02 | 4.840E+02 | 4.576E+02 |
| **hf172** | 1.549E-19 | 2.669E-20 | 2.428E-20 | 1.677E-20 | 1.158E-20 |
| **hf175** | 1.037E-11 | 3.658E-19 | 1.456E-19 | 3.923E-21 | 1.057E-22 |
| **hf177m** | 3.179E-14 | 1.781E-17 | 1.192E-17 | 2.462E-18 | 5.088E-19 |
| **hf181** | 3.283E-13 | 1.619E-25 | 3.540E-26 | 9.053E-29 | 0.000E+00 |
| **hf182** | 1.528E-19 | 1.528E-19 | 1.528E-19 | 1.528E-19 | 1.528E-19 |
| **hg194** | 8.217E-21 | 8.157E-21 | 8.151E-21 | 8.137E-21 | 8.124E-21 |
| **hg203** | 5.330E-14 | 3.390E-25 | 8.502E-26 | 3.726E-28 | 0.000E+00 |
| **hg206** | 6.618E-17 | 6.982E-17 | 7.075E-17 | 7.527E-17 | 8.144E-17 |
| **ho163** | 1.058E-07 | 1.057E-07 | 1.057E-07 | 1.057E-07 | 1.057E-07 |
| **ho166m** | 8.801E-04 | 8.781E-04 | 8.781E-04 | 8.774E-04 | 8.768E-04 |
| **i125** | 1.770E-05 | 2.919E-14 | 9.863E-15 | 1.394E-16 | 1.969E-18 |
| **i126** | 1.342E-06 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **i129** | 4.916E-02 | 4.917E-02 | 4.917E-02 | 4.917E-02 | 4.917E-02 |
| **i131** | 1.560E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **in113m** | 5.895E-07 | 1.728E-11 | 9.870E-12 | 1.096E-12 | 1.216E-13 |
| **in114** | 6.690E-03 | 1.942E-13 | 5.283E-14 | 3.189E-16 | 1.924E-18 |
| **in114m** | 6.916E-03 | 2.008E-13 | 5.460E-14 | 3.295E-16 | 1.989E-18 |
| **in115** | 2.466E-11 | 2.466E-11 | 2.466E-11 | 2.466E-11 | 2.466E-11 |
| **in115m** | 1.784E-03 | 3.498E-15 | 8.230E-16 | 2.816E-18 | 9.637E-21 |
| **ir190** | 2.041E-22 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir191m** | 3.646E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir192** | 3.495E-12 | 2.999E-19 | 1.252E-19 | 4.070E-21 | 1.322E-22 |
| **ir193m** | 1.495E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ir194** | 1.127E-18 | 6.513E-19 | 6.324E-19 | 5.634E-19 | 5.020E-19 |
| **k 40** | 5.040E-19 | 5.040E-19 | 5.040E-19 | 5.040E-19 | 5.040E-19 |
| **k 42** | 5.101E-21 | 4.616E-21 | 4.590E-21 | 4.495E-21 | 4.401E-21 |
| **kr 81** | 7.288E-07 | 7.288E-07 | 7.288E-07 | 7.288E-07 | 7.288E-07 |
| **kr 83m** | 9.863E-04 | 8.748E-10 | 4.142E-10 | 2.201E-11 | 1.169E-12 |
| **kr 85** | 6.737E+03 | 4.962E+03 | 4.881E+03 | 4.576E+03 | 4.291E+03 |
| **la137** | 2.152E-05 | 2.152E-05 | 2.152E-05 | 2.152E-05 | 2.152E-05 |
| **la138** | 6.138E-10 | 6.138E-10 | 6.138E-10 | 6.138E-10 | 6.138E-10 |
| **la140** | 1.231E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **lu172** | 1.563E-19 | 2.669E-20 | 2.429E-20 | 1.677E-20 | 1.158E-20 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **lu172m** | 1.549E-19 | 2.669E-20 | 2.429E-20 | 1.677E-20 | 1.158E-20 |
| **lu173** | 5.101E-15 | 4.624E-16 | 4.065E-16 | 2.452E-16 | 1.479E-16 |
| **lu174** | 6.797E-15 | 2.607E-15 | 2.472E-15 | 2.005E-15 | 1.626E-15 |
| **lu174m** | 1.849E-15 | 3.919E-19 | 2.489E-19 | 4.190E-20 | 7.055E-21 |
| **lu176** | 4.605E-22 | 4.605E-22 | 4.605E-22 | 4.605E-22 | 4.605E-22 |
| **lu177** | 9.033E-15 | 5.060E-18 | 3.386E-18 | 6.996E-19 | 1.445E-19 |
| **lu177m** | 4.045E-14 | 2.266E-17 | 1.517E-17 | 3.133E-18 | 6.473E-19 |
| **mn 53** | 5.609E-22 | 5.609E-22 | 5.609E-22 | 5.609E-22 | 5.609E-22 |
| **mn 54** | 1.538E-13 | 3.274E-15 | 2.664E-15 | 1.184E-15 | 5.263E-16 |
| **mo 93** | 3.299E-07 | 3.297E-07 | 3.297E-07 | 3.296E-07 | 3.295E-07 |
| **mo100** | 5.717E-13 | 5.717E-13 | 5.717E-13 | 5.717E-13 | 5.717E-13 |
| **na 22** | 5.494E-19 | 1.552E-19 | 1.451E-19 | 1.112E-19 | 8.522E-20 |
| **nb 91** | 5.882E-08 | 5.854E-08 | 5.852E-08 | 5.846E-08 | 5.840E-08 |
| **nb 91m** | 1.413E-10 | 3.785E-19 | 1.312E-19 | 2.054E-21 | 3.216E-23 |
| **nb 92** | 9.956E-11 | 9.956E-11 | 9.956E-11 | 9.956E-11 | 9.956E-11 |
| **nb 92m** | 1.987E-13 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nb 93m** | 1.363E-01 | 3.922E-01 | 4.045E-01 | 4.515E-01 | 4.966E-01 |
| **nb 94** | 5.617E-04 | 5.616E-04 | 5.616E-04 | 5.616E-04 | 5.616E-04 |
| **nb 95** | 1.873E+05 | 1.410E-03 | 5.143E-04 | 1.020E-05 | 1.963E-07 |
| **nb 95m** | 1.025E+03 | 7.301E-06 | 2.668E-06 | 5.132E-08 | 9.870E-10 |
| **nd144** | 1.035E-09 | 1.239E-09 | 1.240E-09 | 1.241E-09 | 1.242E-09 |
| **nd147** | 4.028E-02 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **nd150** | 7.898E-14 | 7.898E-14 | 7.898E-14 | 7.898E-14 | 7.898E-14 |
| **ni 59** | 7.036E-15 | 7.036E-15 | 7.036E-15 | 7.036E-15 | 7.036E-15 |
| **ni 63** | 8.635E-14 | 8.356E-14 | 8.343E-14 | 8.283E-14 | 8.230E-14 |
| **np235** | 2.450E-03 | 1.181E-04 | 1.004E-04 | 5.301E-05 | 2.799E-05 |
| **np236** | 2.989E-06 | 2.989E-06 | 2.989E-06 | 2.989E-06 | 2.989E-06 |
| **np237** | 1.124E-01 | 1.173E-01 | 1.178E-01 | 1.195E-01 | 1.215E-01 |
| **np238** | 1.971E-01 | 1.925E-01 | 1.923E-01 | 1.914E-01 | 1.904E-01 |
| **np239** | 5.430E+01 | 5.428E+01 | 5.427E+01 | 5.427E+01 | 5.427E+01 |
| **np240** | 1.423E-09 | 1.423E-09 | 1.423E-09 | 1.423E-09 | 1.423E-09 |
| **np240m** | 1.186E-06 | 1.186E-06 | 1.186E-06 | 1.186E-06 | 1.186E-06 |
| **os185** | 1.357E-15 | 3.624E-21 | 1.820E-21 | 1.219E-22 | 8.170E-24 |
| **os191** | 3.646E-19 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **os194** | 1.126E-18 | 6.511E-19 | 6.322E-19 | 5.632E-19 | 5.018E-19 |
| **p 32** | 1.635E-18 | 2.928E-19 | 2.925E-19 | 2.912E-19 | 2.899E-19 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **p 33** | 1.952E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa230** | 3.392E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pa231** | 1.207E-06 | 1.454E-06 | 1.467E-06 | 1.519E-06 | 1.571E-06 |
| **pa232** | 5.978E-09 | 5.977E-09 | 5.977E-09 | 5.977E-09 | 5.977E-09 |
| **pa233** | 1.124E-01 | 1.172E-01 | 1.176E-01 | 1.195E-01 | 1.215E-01 |
| **pa234** | 4.959E-04 | 4.961E-04 | 4.959E-04 | 4.959E-04 | 4.959E-04 |
| **pa234m** | 3.100E-01 | 3.100E-01 | 3.100E-01 | 3.100E-01 | 3.100E-01 |
| **pb209** | 4.459E-08 | 4.712E-08 | 4.723E-08 | 4.799E-08 | 4.874E-08 |
| **pb210** | 3.483E-09 | 3.676E-09 | 3.724E-09 | 3.960E-09 | 4.287E-09 |
| **pb211** | 5.126E-08 | 2.348E-07 | 2.399E-07 | 2.839E-07 | 3.235E-07 |
| **pb212** | 1.965E-03 | 1.280E-02 | 1.328E-02 | 1.493E-02 | 1.631E-02 |
| **pb214** | 1.563E-09 | 9.378E-09 | 1.004E-08 | 1.294E-08 | 1.633E-08 |
| **pd103** | 1.576E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pd107** | 2.995E-01 | 2.995E-01 | 2.995E-01 | 2.995E-01 | 2.995E-01 |
| **pm143** | 4.413E-09 | 4.744E-11 | 3.719E-11 | 1.432E-11 | 5.510E-12 |
| **pm144** | 9.863E-07 | 3.604E-08 | 3.017E-08 | 1.503E-08 | 7.487E-09 |
| **pm145** | 4.312E-03 | 3.615E-03 | 3.579E-03 | 3.442E-03 | 3.311E-03 |
| **pm146** | 2.032E-01 | 1.122E-01 | 1.087E-01 | 9.584E-02 | 8.456E-02 |
| **pm147** | 1.698E+05 | 4.849E+04 | 4.533E+04 | 3.481E+04 | 2.673E+04 |
| **pm148** | 3.563E+01 | 8.263E-12 | 1.734E-12 | 3.784E-15 | 8.257E-18 |
| **pm148m** | 7.381E+02 | 1.711E-10 | 3.591E-11 | 7.839E-14 | 1.710E-16 |
| **po209** | 1.832E-16 | 1.774E-16 | 1.771E-16 | 1.759E-16 | 1.747E-16 |
| **po210** | 3.003E-09 | 3.553E-09 | 3.589E-09 | 3.785E-09 | 4.060E-09 |
| **po211** | 1.415E-10 | 6.482E-10 | 6.622E-10 | 7.839E-10 | 8.927E-10 |
| **po212** | 1.258E-03 | 8.197E-03 | 8.509E-03 | 9.558E-03 | 1.045E-02 |
| **po213** | 4.361E-08 | 4.609E-08 | 4.619E-08 | 4.694E-08 | 4.767E-08 |
| **po214** | 1.639E-09 | 9.378E-09 | 1.004E-08 | 1.294E-08 | 1.633E-08 |
| **po215** | 5.126E-08 | 2.348E-07 | 2.399E-07 | 2.839E-07 | 3.235E-07 |
| **po216** | 1.965E-03 | 1.280E-02 | 1.328E-02 | 1.493E-02 | 1.631E-02 |
| **po218** | 1.563E-09 | 9.378E-09 | 1.005E-08 | 1.295E-08 | 1.633E-08 |
| **pr143** | 2.233E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **pr144** | 6.073E+05 | 8.960E+03 | 7.148E+03 | 2.940E+03 | 1.210E+03 |
| **pr144m** | 5.798E+03 | 8.555E+01 | 6.823E+01 | 2.808E+01 | 1.155E+01 |
| **pt193** | 6.611E-13 | 6.191E-13 | 6.169E-13 | 6.084E-13 | 6.000E-13 |
| **pu236** | 3.954E-01 | 1.251E-01 | 1.176E-01 | 9.226E-02 | 7.241E-02 |
| **pu237** | 1.146E-01 | 4.251E-13 | 1.035E-13 | 4.052E-16 | 1.586E-18 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **pu238** | 2.691E+03 | 2.887E+03 | 2.881E+03 | 2.859E+03 | 2.837E+03 |
| **pu239** | 1.138E+03 | 1.138E+03 | 1.138E+03 | 1.138E+03 | 1.138E+03 |
| **pu240** | 2.241E+03 | 2.243E+03 | 2.243E+03 | 2.243E+03 | 2.243E+03 |
| **pu241** | 5.147E+05 | 4.089E+05 | 4.039E+05 | 3.848E+05 | 3.665E+05 |
| **pu242** | 4.605E+00 | 4.605E+00 | 4.605E+00 | 4.605E+00 | 4.605E+00 |
| **pu243** | 4.839E-07 | 4.839E-07 | 4.839E-07 | 4.839E-07 | 4.839E-07 |
| **pu244** | 1.187E-06 | 1.187E-06 | 1.187E-06 | 1.187E-06 | 1.187E-06 |
| **pu246** | 8.363E-13 | 8.363E-13 | 8.363E-13 | 8.363E-13 | 8.363E-13 |
| **ra222** | 7.613E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **ra223** | 5.126E-08 | 2.348E-07 | 2.399E-07 | 2.839E-07 | 3.235E-07 |
| **ra224** | 1.965E-03 | 1.280E-02 | 1.328E-02 | 1.493E-02 | 1.631E-02 |
| **ra225** | 4.457E-08 | 4.712E-08 | 4.726E-08 | 4.799E-08 | 4.874E-08 |
| **ra226** | 1.576E-09 | 9.378E-09 | 1.005E-08 | 1.295E-08 | 1.633E-08 |
| **ra228** | 7.095E-12 | 1.349E-11 | 1.380E-11 | 1.499E-11 | 1.615E-11 |
| **rb 83** | 1.327E-03 | 1.177E-09 | 5.573E-10 | 2.961E-11 | 1.573E-12 |
| **rb 84** | 2.821E-03 | 3.589E-19 | 5.034E-20 | 2.260E-23 | 1.014E-26 |
| **rb 86** | 9.106E-02 | 9.080E-30 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rb 87** | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.384E-05 | 1.384E-05 |
| **re183** | 8.509E-19 | 2.999E-26 | 1.194E-26 | 3.216E-28 | 8.662E-30 |
| **re184** | 1.629E-16 | 1.242E-19 | 8.482E-20 | 1.906E-20 | 4.264E-21 |
| **re184m** | 1.611E-16 | 1.318E-19 | 9.007E-20 | 2.015E-20 | 4.509E-21 |
| **re186** | 2.041E-18 | 2.041E-18 | 2.041E-18 | 2.041E-18 | 2.041E-18 |
| **re186m** | 2.041E-18 | 2.041E-18 | 2.041E-18 | 2.041E-18 | 2.041E-18 |
| **re187** | 1.582E-20 | 1.582E-20 | 1.582E-20 | 1.582E-20 | 1.582E-20 |
| **re188** | 1.726E-14 | 5.766E-22 | 2.289E-22 | 0.000E+00 | 0.000E+00 |
| **rh 99** | 5.158E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **rh101** | 5.308E-04 | 1.959E-04 | 1.857E-04 | 1.506E-04 | 1.221E-04 |
| **rh102** | 4.693E+00 | 1.614E-02 | 1.225E-02 | 4.570E-03 | 2.145E-03 |
| **rh102m** | 1.642E+00 | 6.816E-01 | 6.505E-01 | 5.406E-01 | 4.493E-01 |
| **rh103m** | 2.117E+04 | 1.079E-09 | 2.089E-10 | 3.313E-13 | 5.255E-16 |
| **rh106** | 7.281E+05 | 2.877E+04 | 2.419E+04 | 1.225E+04 | 6.202E+03 |
| **rn217** | 3.121E-12 | 3.299E-12 | 3.306E-12 | 3.359E-12 | 3.412E-12 |
| **rn218** | 7.613E-11 | 1.876E-15 | 2.009E-15 | 2.590E-15 | 3.266E-15 |
| **rn219** | 5.126E-08 | 2.348E-07 | 2.399E-07 | 2.839E-07 | 3.235E-07 |
| **rn220** | 1.965E-03 | 1.280E-02 | 1.328E-02 | 1.493E-02 | 1.631E-02 |
| **rn222** | 1.563E-09 | 9.378E-09 | 1.005E-08 | 1.295E-08 | 1.633E-08 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **ru103** | 2.140E+04 | 1.091E-09 | 2.111E-10 | 3.349E-13 | 5.312E-16 |
| **ru106** | 7.281E+05 | 2.877E+04 | 2.419E+04 | 1.225E+04 | 6.202E+03 |
| **s 35** | 1.129E-13 | 1.234E-19 | 5.907E-20 | 3.279E-21 | 1.821E-22 |
| **sb120m** | 1.254E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sb124** | 5.656E+01 | 1.221E-07 | 4.183E-08 | 6.256E-10 | 9.359E-12 |
| **sb125** | 1.438E+04 | 4.365E+03 | 4.095E+03 | 3.185E+03 | 2.478E+03 |
| **sb126** | 7.042E-02 | 7.009E-02 | 7.009E-02 | 7.009E-02 | 7.002E-02 |
| **sb126m** | 5.004E-01 | 5.004E-01 | 5.004E-01 | 5.004E-01 | 5.004E-01 |
| **sb127** | 3.208E-16 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sc 45m** | 2.756E-18 | 1.706E-21 | 1.148E-21 | 2.423E-22 | 5.111E-23 |
| **sc 46** | 1.212E-12 | 7.201E-19 | 3.337E-19 | 1.629E-20 | 7.951E-22 |
| **se 75** | 1.025E-04 | 4.523E-09 | 2.641E-09 | 3.195E-10 | 3.866E-11 |
| **se 79** | 8.310E-02 | 8.310E-02 | 8.310E-02 | 8.310E-02 | 8.310E-02 |
| **si 32** | 2.991E-19 | 2.928E-19 | 2.924E-19 | 2.911E-19 | 2.898E-19 |
| **sm145** | 7.640E-04 | 2.232E-05 | 1.847E-05 | 8.774E-06 | 4.170E-06 |
| **sm146** | 6.816E-08 | 6.982E-08 | 6.989E-08 | 7.016E-08 | 7.036E-08 |
| **sm147** | 2.721E-06 | 5.725E-06 | 5.803E-06 | 6.063E-06 | 6.263E-06 |
| **sm148** | 5.740E-11 | 5.741E-11 | 5.741E-11 | 5.741E-11 | 5.741E-11 |
| **sm151** | 7.420E+02 | 7.155E+02 | 7.142E+02 | 7.089E+02 | 7.036E+02 |
| **sn113** | 5.891E-07 | 1.727E-11 | 9.863E-12 | 1.095E-12 | 1.215E-13 |
| **sn117m** | 1.943E-04 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn119m** | 2.333E+02 | 3.868E+00 | 3.104E+00 | 1.309E+00 | 5.519E-01 |
| **sn121** | 3.704E+01 | 3.437E+01 | 3.423E+01 | 3.370E+01 | 3.317E+01 |
| **sn121m** | 4.774E+01 | 4.429E+01 | 4.411E+01 | 4.342E+01 | 4.274E+01 |
| **sn123** | 6.876E+02 | 6.302E-02 | 3.826E-02 | 5.399E-03 | 7.620E-04 |
| **sn125** | 8.735E-05 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **sn126** | 5.004E-01 | 5.004E-01 | 5.004E-01 | 5.004E-01 | 5.004E-01 |
| **sr 85** | 2.908E-04 | 2.617E-12 | 9.684E-13 | 1.957E-14 | 3.953E-16 |
| **sr 89** | 1.580E+04 | 7.487E-07 | 2.091E-07 | 1.399E-09 | 9.365E-12 |
| **sr 90** | 4.574E+04 | 4.080E+04 | 4.055E+04 | 3.959E+04 | 3.865E+04 |
| **ta179** | 2.735E-17 | 4.488E-18 | 4.073E-18 | 2.784E-18 | 1.903E-18 |
| **ta182** | 4.919E-12 | 1.398E-16 | 7.978E-17 | 8.934E-18 | 1.121E-18 |
| **tb157** | 2.825E-05 | 2.697E-05 | 2.690E-05 | 2.664E-05 | 2.638E-05 |
| **tb158** | 1.188E-03 | 1.167E-03 | 1.166E-03 | 1.161E-03 | 1.157E-03 |
| **tb160** | 1.623E+02 | 9.883E-06 | 4.051E-06 | 1.225E-07 | 3.700E-09 |
| **tb161** | 7.859E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **tc 95** | 7.440E-12 | 2.085E-20 | 7.248E-21 | 1.146E-22 | 0.000E+00 |
| **tc 95m** | 1.891E-10 | 5.301E-19 | 1.843E-19 | 2.912E-21 | 4.601E-23 |
| **tc 97** | 7.586E-09 | 7.659E-09 | 7.659E-09 | 7.659E-09 | 7.659E-09 |
| **tc 97m** | 1.248E-03 | 2.309E-09 | 1.137E-09 | 7.055E-11 | 4.375E-12 |
| **tc 98** | 7.646E-06 | 7.646E-06 | 7.646E-06 | 7.646E-06 | 7.646E-06 |
| **tc 99** | 1.624E+01 | 1.624E+01 | 1.624E+01 | 1.624E+01 | 1.624E+01 |
| **te121** | 2.571E-20 | 1.710E-23 | 1.154E-23 | 2.141E-29 | 0.000E+00 |
| **te121** | 1.268E-03 | 8.429E-07 | 5.693E-07 | 1.219E-07 | 2.612E-08 |
| **te121m** | 1.264E-03 | 8.403E-07 | 5.675E-07 | 1.216E-07 | 2.604E-08 |
| **te123m** | 2.752E+00 | 1.157E-04 | 6.737E-05 | 8.064E-06 | 9.657E-07 |
| **te125m** | 3.502E+03 | 1.069E+03 | 1.003E+03 | 7.799E+02 | 6.068E+02 |
| **te127** | 2.820E+03 | 4.614E-02 | 2.554E-02 | 2.507E-03 | 2.461E-04 |
| **te127m** | 2.879E+03 | 4.710E-02 | 2.608E-02 | 2.559E-03 | 2.513E-04 |
| **te128** | 4.938E-14 | 4.938E-14 | 4.938E-14 | 4.938E-14 | 4.938E-14 |
| **te129** | 1.627E+02 | 4.843E-14 | 7.109E-15 | 3.817E-18 | 2.050E-21 |
| **te129m** | 2.580E+02 | 7.679E-14 | 1.127E-14 | 6.051E-18 | 3.248E-21 |
| **th226** | 7.613E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **th227** | 5.172E-08 | 2.316E-07 | 2.381E-07 | 2.800E-07 | 3.191E-07 |
| **th228** | 1.992E-03 | 1.275E-02 | 1.322E-02 | 1.487E-02 | 1.625E-02 |
| **th229** | 4.458E-08 | 4.712E-08 | 4.730E-08 | 4.799E-08 | 4.874E-08 |
| **th230** | 1.961E-06 | 5.925E-06 | 6.186E-06 | 7.255E-06 | 8.403E-06 |
| **th231** | 2.443E-03 | 2.448E-03 | 2.448E-03 | 2.450E-03 | 2.450E-03 |
| **th232** | 1.954E-11 | 2.364E-11 | 2.387E-11 | 2.474E-11 | 2.561E-11 |
| **th234** | 3.099E-01 | 3.100E-01 | 3.100E-01 | 3.100E-01 | 3.100E-01 |
| **tl202** | 3.961E-23 | 0.000E+00 | 7.049E-28 | 0.000E+00 | 0.000E+00 |
| **tl204** | 1.736E-14 | 7.281E-15 | 6.949E-15 | 5.785E-15 | 4.817E-15 |
| **tl206** | 4.666E-15 | 4.926E-15 | 4.989E-15 | 5.307E-15 | 5.744E-15 |
| **tl207** | 5.112E-08 | 2.342E-07 | 2.393E-07 | 2.831E-07 | 3.226E-07 |
| **tl208** | 7.062E-04 | 4.600E-03 | 4.774E-03 | 5.364E-03 | 5.860E-03 |
| **tl209** | 9.810E-10 | 1.037E-09 | 1.039E-09 | 1.056E-09 | 1.073E-09 |
| **tl210** | 3.283E-13 | 1.970E-12 | 2.110E-12 | 2.719E-12 | 3.429E-12 |
| **tm167** | 2.071E-15 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **tm168** | 7.142E-06 | 1.780E-11 | 8.907E-12 | 5.882E-13 | 3.884E-14 |
| **tm170** | 2.636E-01 | 2.314E-05 | 1.402E-05 | 1.960E-06 | 2.740E-07 |
| **tm171** | 1.572E-01 | 2.835E-02 | 2.587E-02 | 1.803E-02 | 1.257E-02 |
| **u230** | 7.606E-11 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

| Table C-10. Continued | | | | | |
|---|---|---|---|---|---|
| | **1/22/2009** | **10/21/2013** | **1/22/2014** | **1/22/2015** | **1/22/2016** |
| **u232** | 7.367E-03 | 1.792E-02 | 1.819E-02 | 1.905E-02 | 1.968E-02 |
| **u233** | 4.470E-06 | 6.996E-06 | 7.122E-06 | 7.693E-06 | 8.270E-06 |
| **u234** | 7.148E-02 | 1.104E-01 | 1.124E-01 | 1.205E-01 | 1.286E-01 |
| **u235** | 2.443E-03 | 2.448E-03 | 2.448E-03 | 2.450E-03 | 2.450E-03 |
| **u236** | 1.736E-02 | 1.768E-02 | 1.770E-02 | 1.776E-02 | 1.783E-02 |
| **u237** | 1.262E+01 | 1.003E+01 | 9.909E+00 | 9.438E+00 | 8.994E+00 |
| **u238** | 3.099E-01 | 3.099E-01 | 3.099E-01 | 3.099E-01 | 3.099E-01 |
| **u240** | 1.186E-06 | 1.186E-06 | 1.186E-06 | 1.186E-06 | 1.186E-06 |
| **v 49** | 3.718E-16 | 9.763E-18 | 8.031E-18 | 3.729E-18 | 1.732E-18 |
| **w181** | 4.155E-15 | 2.062E-19 | 1.211E-19 | 1.502E-20 | 1.862E-21 |
| **w185** | 9.219E-13 | 1.043E-19 | 4.419E-20 | 1.521E-21 | 5.238E-23 |
| **w188** | 1.708E-14 | 5.708E-22 | 2.266E-22 | 6.035E-24 | 1.607E-25 |
| **xe127** | 1.050E-03 | 4.889E-18 | 8.317E-19 | 7.971E-22 | 7.640E-25 |
| **xe129m** | 2.129E-08 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe131m** | 8.390E-03 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **xe133** | 1.901E-09 | 0.000E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| **y 88** | 3.177E-01 | 4.069E-06 | 2.223E-06 | 2.073E-07 | 1.932E-08 |
| **y 89m** | 1.524E+00 | 7.221E-11 | 2.016E-11 | 1.349E-13 | 9.027E-16 |
| **y 90** | 4.575E+04 | 4.081E+04 | 4.056E+04 | 3.960E+04 | 3.866E+04 |
| **y 91** | 3.733E+04 | 4.528E-05 | 1.505E-05 | 1.993E-07 | 2.640E-09 |
| **yb169** | 5.711E-08 | 2.904E-24 | 3.879E-25 | 1.436E-28 | 0.000E+00 |
| **zn 65** | 7.002E-16 | 5.086E-18 | 3.905E-18 | 1.385E-18 | 4.906E-19 |
| **zr 88** | 1.262E-07 | 7.009E-14 | 3.236E-14 | 1.558E-15 | 7.500E-17 |
| **zr 93** | 1.562E+00 | 1.562E+00 | 1.562E+00 | 1.562E+00 | 1.562E+00 |
| **zr 95** | 8.954E+04 | 6.378E-04 | 2.331E-04 | 4.483E-06 | 8.622E-08 |
| **zr 96** | 1.546E-13 | 1.546E-13 | 1.546E-13 | 1.546E-13 | 1.546E-13 |
| **Total** | **4.3784E+06** | **9.1470E+05** | **8.8857E+05** | **8.0889E+05** | **7.5214E+05** |