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FOR THE DEPARTMENT OF ENERGY

ORNL/TM-2010/296

AGR-2 Fuel Compacts Information Summary: Prepared for the NRC MELCOR Project

Revision 1

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Next Generation Nuclear Plant -
Advanced Gas Reactor Fuel Development Program

UT-BATTELLE
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Introduction

This document was prepared at the request of the NRC to provide summary information on the compacts used in the Department of Energy's Office of Nuclear Energy (DOE-NE) Advanced Gas Reactor Fuel Development and Qualification (AGR) program's second irradiation test, AGR-2. The data in this summary document is being provided to Robert P Wichner in support of a Nuclear Regulatory Commission (NRC) Methods for Estimation of Leakages and Consequences Of Release (MELCOR) code development effort.

The AGR-2 compacts described in this report contained two types of fuel kernels. Uranium oxide (UO_2) fuel kernels with a nominal diameter of 500 μm and mixed uranium oxide/uranium carbide (UCO) fuel kernels with a nominal diameter of 425 μm. The fuel kernels were produced by Babcock and Wilcox (B&W) in Lynchburg Virginia. The UCO kernels were identified as composite G73I-14-69307. The UO_2 kernels were identified as composite G73AA-10-69308.

The fuel kernels were coated with a tristructural-isotropic (TRISO) coating in a 150 mm diameter fluidized bed chemical vapor deposition (CVD) coating furnace at B&W. The TRISO-coated particles consisted of a spherical kernel coated with an approximately 50% dense carbon buffer layer (100 μm nominal thickness), followed by a dense inner pyrocarbon layer (40 μm nominal thickness), followed by a SiC layer (35 μm nominal thickness), followed by another dense outer pyrocarbon layer (40 μm nominal thickness).

The TRISO-coated particles were shipped to Oak Ridge National Laboratory (ORNL) to be fabricated into the final fuel form. Particles were overcoated in a resinated graphite powder and then these overcoated particles were pressed into cylindrical compacts. This document is a compilation of characterization data for four compact lots: AGR-2 UCO Variant fuel compact lot LEU06-OP1-Z, AGR-2 UCO Baseline fuel compact lot LEU07-OP1-Z, AGR-2 UCO Variant fuel compact lot LEU09-OP2-Z, and AGR-2 B&W UO_2 fuel compact lot LEU11-OP2-Z.

LEU06-OP1-Z was a compact lot fabricated using particle composite LEU06. LEU06 came from B&W coated particle lot G73J-14-93074A, which was an upgraded batch of TRISO-coated 425 μm diameter, 14% low enriched uranium oxide/uranium carbide kernels (LEUCO). LEU07-OP1-Z was a compact lot fabricated using particle composite LEU07. LEU07 came from B&W coated particle lot G73J-14-93072A, which was an upgraded batch of TRISO-coated 425 μm diameter, 14% LEUCO. These two compact lots were fully characterized, but were not used in the AGR-2 irradiation test.

LEU09-OP2-Z was a compact lot fabricated using particle composite LEU09. LEU09 came from B&W coated particle lot G73J-14-93073A, which was an upgraded batch of TRISO-coated 425 μm diameter, 14% LEUCO. LEU11-OP2-Z was a compact lot fabricated using particle composite LEU11. LEU11 came from B&W coated particle lot G73H-10-93085B, which was an upgraded batch of TRISO-coated 500 μm nominal diameter, 9.6% low enriched uranium oxide kernels. These two compact lots were fully characterized and were used in the AGR-2 irradiation test.

Compact Fabrication

After coating, particle batches were upgraded using sieves and shape separation tables. Material for compacting was then chute riffled from the final particle lots and shipped from B&W to ORNL. Further upgrading using a roller-micrometer was performed at ORNL on particle batches LEU09 and LEU11 to remove a small number of bare kernels, undersized particles, and heavily faceted particles. The particles were then washed multiple times in methanol by submerging the particles and then decanting off the liquid. Washing of particles prior to overcoating was adapted in order to help reduce the amount of contamination on the particles that may have been acquired during processing or general handling. This procedure also reduces the amount of loose carbon dust on the surface of the particles.

The roller-micrometer technique uses rotating inclined cylinders with a diverging gap to sort particles according to their size. Using a vibrating vee-trough feeder, particles are fed in a single stream into the gap between the rollers. The rollers are angled downward away from the feed point and rotate with an upward and outward motion. Particles travel down the gradually widening gap until they reach a point equal to their width, at which point they drop through the gap into a series of collection bins. The roller-micrometer is a very accurate and reliable device for sorting coated particles by size. It also tends to sort coated particles by shape because the particles continuously re-orient as they travel down the inclined rollers, and faceted particles fall through a narrower gap than spherical particles of the same diameter. Figure 1 shows the roller-micrometer equipment.

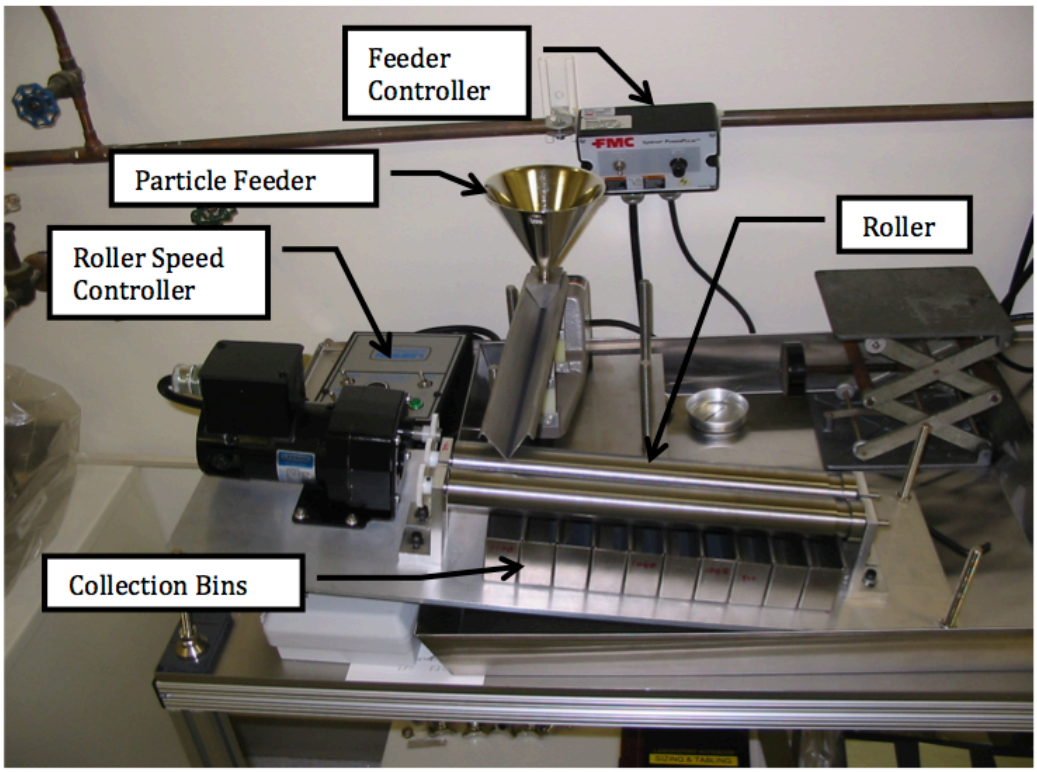


Figure 1. Photograph of roller-micrometer equipment showing the arrangement of the roller, particle feeder, and collection bins.

After washing, particle samples were riffled out for characterization. Average particle weight, diameter, envelope volume, and uranium content were measured. At this time, 20 gram aliquots for use as overcoater charges were also riffled. Riffling at ORNL was done using a 10 position rotary riffler.

Particles were overcoated by rolling in a matrix precursor prepared from a resinated mix of natural and synthetic graphite. The AGR-2 Fuel Specification (SPC-923) puts maximum limits on the elemental impurities Al, Ca, Ti, V, Cr, Mn, Fe, Co, and Ni. The natural graphite, synthetic graphite, and thermosetting resin used to make the matrix/overcoat material may contain these impurities. Therefore, the selection of graphite and resin used to make the matrix must have low concentrations of these impurities to ensure that compacts made using this matrix will be within specification. Part of the compacting development effort was selection and qualification of natural graphite, synthetic graphite, and resin. A graphite or resin was considered "qualified" if it could produce a compact that was within specification on impurities. The qualification process involved receiving natural graphite and synthetic graphite and testing them via glow discharge mass spectrometry (GDMS) in order to establish their initial impurity concentrations. The graphite and resin were then combined to produce matrix that was carbonized and heat treated in powder form. The impurity levels in the heat treated matrix were then measured by GDMS as well.

Table 1 shows the initial impurity levels for the natural graphite and synthetic graphite that were used to make all the AGR-2 compacts. Natural graphite (Asbury Graphite Mills RD13371), synthetic graphite (SGL Carbon KRB2000), and a thermosetting resin were combined in a weight ratio of 64:16:20 to make the matrix. A sample of one of the matrix batches (RDKrS-050809) used to make LEU09-OP2-Z is also shown in Table 1. The matrix was carbonized and heat treated in powder form prior to being tested for impurities by GDMS. Notice that the heat treatment processes significantly reduced impurity levels in the matrix for several elements. The vanadium impurity in the heat treated matrix is higher than in the graphite and is most likely being picked up during heat treatment in the graphite furnace. Low levels of vanadium (15-20 μg/compact) have been observed in all the AGR-2 compacts. Uranium in all of the matrix components was less than the detection limit.

Table 1. Matrix constituents that were used in AGR-2 LEU09-OP2-Z compacts

Element	Impurity concentration (ppm)		
	Natural graphite-RD13371	Synthetic graphite-KRB2000	Heat-treated matrix-RDKrS-050809
Al	36	0.35	1.2
Ca	9.4	0.7	0.51
Ti	0.43	0.06	0.92
V	0.6	0.02	8.8
Cr	4.5	<0.5	<0.5
Mn	0.54	<0.05	<0.05
Fe	34	1.4	0.11
Co	<0.05	0.25	<0.05
Ni	0.37	1.2	<0.1
U	<0.05	<0.05	<0.05

Overcoated particles were sorted for size by sieving and, in some cases, sorting by roller-micrometer. This process helped to control the average volume of overcoat on the particles (the amount of overcoat effects the final matrix density). The average weight per overcoated particle was determined and was used in conjunction with the average uranium per particle to calculate a compacting charge weight that would produce compacts meeting the specifications on dimension, matrix density, and uranium loading. A record of the weight of each compact charge can be found on data report form DRF-24D in Appendix A.

Note that all the uranium per particle measurements on the LEU06, LEU07 and LEU09 material were consistent to within the sampling error and measurement uncertainty, as expected given that the same kernel batch was used for all three coating runs. Table 2 shows the measured average uranium content per particle obtained directly from the uranium analyses of the individual particles compared to that calculated from the uranium analyses of the compacts divided by the average number of particles per compact.

Table 2. Average and standard deviation (± value) for uranium per particle based on particle and compact analyses of LEU06, LEU07 and LEU09

	LEU06	LEU07	LEU09
grams U/particle based on particle analysis	$3.953 \pm 0.010 \cdot 10^{-4}$	$3.930 \pm 0.007 \cdot 10^{-4}$	$3.964 \pm 0.009 \cdot 10^{-4}$
grams U/particle based on compact analysis	$3.942 \pm 0.006 \cdot 10^{-4}$	$3.938 \pm 0.016 \cdot 10^{-4}$	$3.958 \pm 0.009 \cdot 10^{-4}$

A significant change was made to the compacting equipment between the LEU06 and LEU07 campaigns and the LEU09 and LEU11 campaigns. A Carver manual hydraulic press was replaced with a Promess servo-electric press. The Promess press provided pressing rate and piston displacement control to three decimal place precision. This enabled the pressing rate and compact length to be precisely set and repeated for each individual compacting charge. The force for each compact was also recorded more accurately, to ±10N. Figure 2 and Figure 3 show the distribution in compact length for LEU06-OP1-Z and LEU09-OP2-Z. The effect of the introduction of the Promess press can clearly be seen. The AGR-2 specified compact length limits of ≥25.02 mm and ≤25.40 mm are shown in the figures as vertical lines.

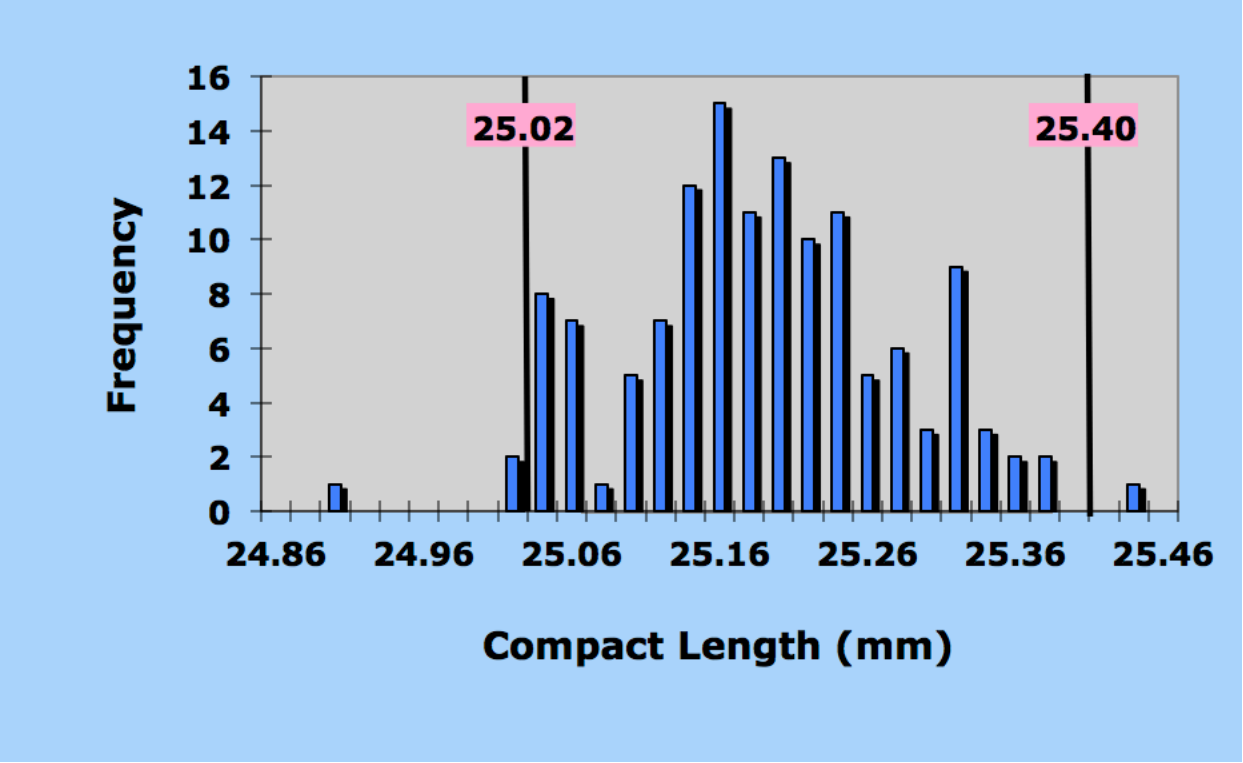


Figure 2. LEU06-OP1-Z compact length distribution.

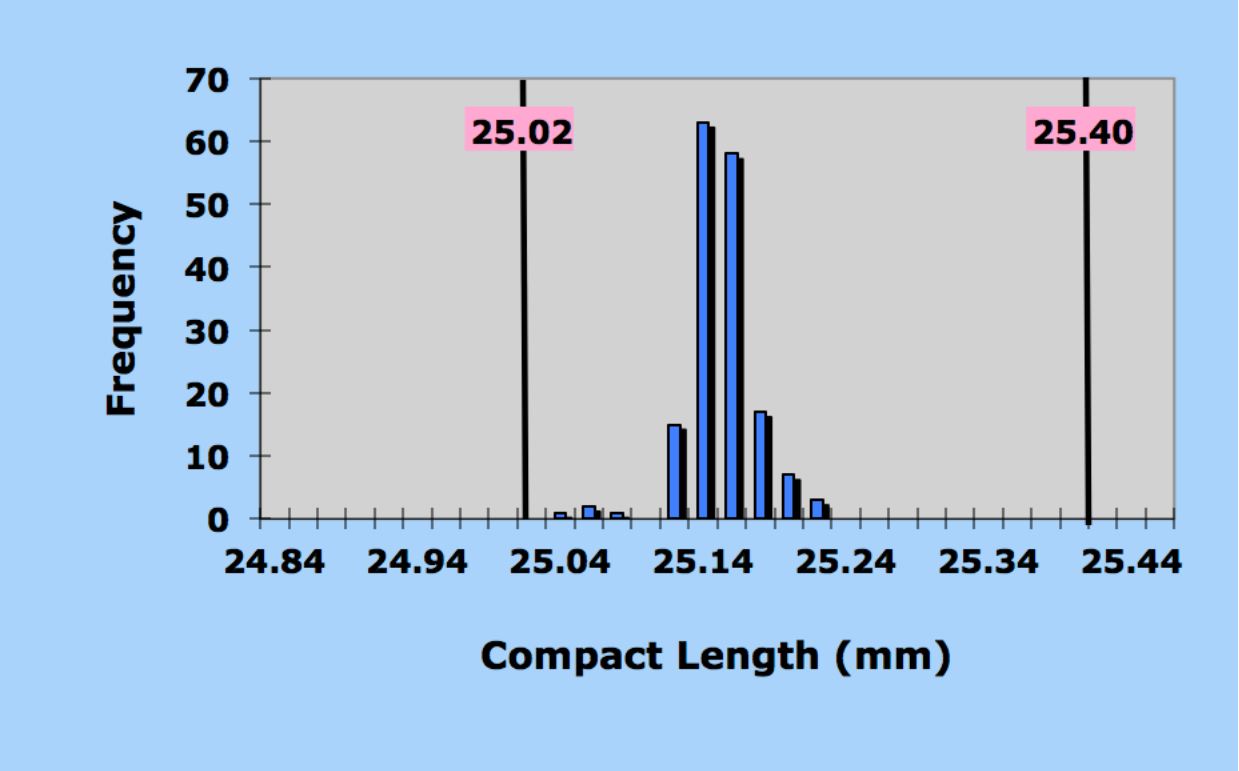


Figure 3. LEU09-OP2-Z compact length distribution.

The compacting charges were formed into green compacts using a heated, double acting die. The die was heated between 65°C and 75°C (except for LEU06, which was pressed at 95°C). Approximately 0.10 g of matrix was added to the top and bottom of the compact in order to create matrix "end caps." The end caps were formed with the compact by first pouring a matrix charge into the heated die, followed by the overcoated particles, and then a second charge of matrix. This forming method created a thin (<0.25 mm thick) fuel free zone on the ends of the compact, called end caps. These fuel free zones can be seen in the x-ray images in Figure 4. Molding pressure was less than 60 MPa. In total, 180-220 green compacts were fabricated. The compacts retained the designation of the riffled charges (e.g., LEU09-OP2-G001 through G185). The green compacts were carbonized and heat treated according to the following procedures.

Carbonization parameters: < 350°C/hr in He atmosphere
Hold at 950 ± 50°C for 1.0 ± 0.4 hr
Furnace cool

Heat treatment parameters: ~20°C/min in vacuum (<1.3 Pa)
Hold at 1650-1850°C for 60 ± 10 min
Furnace cool at ~20°C/min to below 700°C

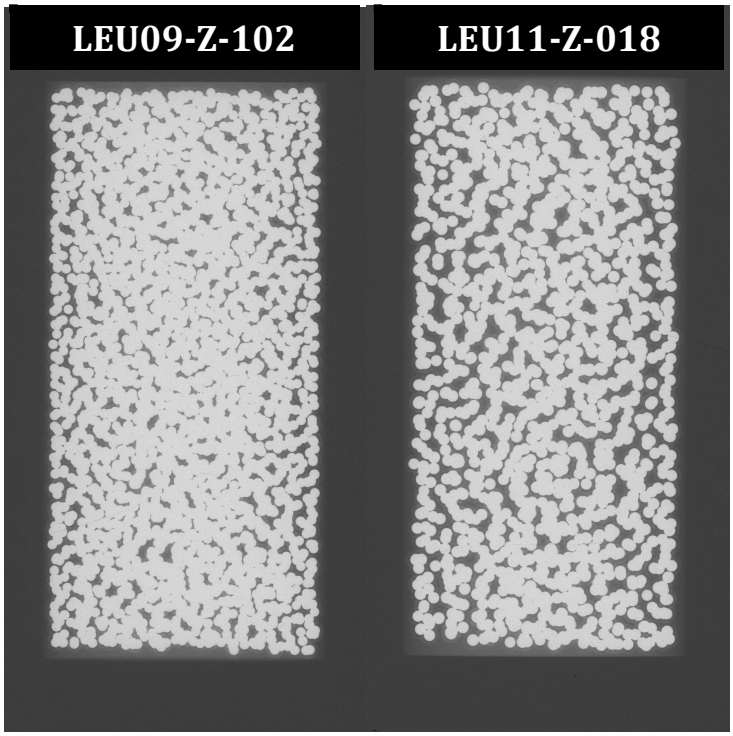


Figure 4. X-ray radiographs of compacts from LEU09-OP2-Z and LEU11-OP2-Z.

After compacting, an appropriate number of compacts were selected for use. Compacts with obvious processing defects, chips, or undesirable dimensions were sorted out and not included in the compacts selected for the final fuel compact lot. This down-select was part of the compacting process and was performed prior to random selection of compacts for acceptance testing. The selected compacts were randomized and relabeled, changing the G-number designation to a Z-number designation. A record of the original G-number for each Z-numbered compact can be found on data report form DRF-24C in Appendix A. After relabeling, the compacts were characterized for product acceptance. This included measurement of compact length, diameter, mass, matrix density, uranium content, and impurity content. In addition, analyses were performed to determine defect fractions for exposed uranium, defective SiC, uranium dispersion due to defective inner pyrocarbon (IPyC), and defective outer pyrocarbon (OPyC).

Summary of Particle and Compact Properties

The appendices to this report provide copies of some of the data report forms (DRF) generated during characterization of the particles and compacts. These forms contain the detailed data generated by the various inspections performed. Appendix A contains information on the compact length, diameter, mass measured for each individual compact and the calculated average packing fraction and average matrix density. Appendix B contains information on the particle diameter measured on individual particles using a shadowscope technique and average particle envelope volume measured on several thousand particles by mercury displacement. Appendix C contains information on the average uranium loading per particle and per compact.

Table 3 gives mean values and standard deviations for key variable properties of the compact lots and associated particle batches. Data report forms associated with the summary data in Table 3 are attached in the appendices to this report.

Table 3. Quick reference table for key variable properties

Property	LEU06	LEU07	LEU09	LEU11
Mean particle diameter (μm)	874.7 (22)	861.8 (24)	873.2 (23)	953.0 (28)
Mean particle volume (cc)	3.46E-4	3.29E-4	3.43E-4	4.45E-4
Mean particle weight (g)	1.036E-3 (2E-6)	1.004E-4 (5E-6)	1.032E-3 (3E-6)	1.462E-3 (5E-6)
Mean uranium per particle (g U)	3.95E-4 (2E-6)	3.93E-4 (1E-6)	3.96E-4 (1E-6)	6.39E-4 (1E-6)
Average numbers of particles/compact	3186	3177	3176	1543
Mean uranium per compact (g U)	1.256 (0.002)	1.251 (0.005)	1.257 (0.003)	0.993 (0.006)
% packing fraction (particle volume / compact volume)	37.08 (0.15)	35.09 (0.12)	36.81 (0.05)	23.46 (0.04)
Mean compact diameter (mm)	12.29 (0.011)	12.32 (0.007)	12.29 (0.004)	12.27 (0.008)
Mean compact length (mm)	25.18 (0.09)	25.19 (0.07)	25.14 (0.02)	25.13 (0.02)
Mean compact mass (g)	6.254 (0.011)	6.346 (0.008)	6.295 (0.012)	6.100 (0.017)
Mean compact matrix density (g/cm^3)	1.56 (0.012)	1.61 (0.008)	1.59 (0.005)	1.68 (0.008)

Values in parentheses are standard deviations of the mean.

Table 4 summarizes impurity data for the AGR-2 fuel compacts. This data was obtained by leach-burn-leach (LBL) followed by inductively coupled plasma mass spectrometry analysis of the nitric acid leach solutions. The table shows the possible range for the mean value of the measured impurities, where the upper limit is the as-reported mean and the lower limit is the possible minimum value calculated by accounting for the fact that the analytical mass spectrometer measurements reported as threshold values could have been

as low as zero. This range reflects the uncertainty in the measured impurity values due to the mass spectrometry measurement thresholds.

Table 4. Mean impurity levels in *μ*g/compact for AGR-2 fuel compacts measured by deconsolidation leach-burn-leach technique

Impurity	LEU06	LEU07	LEU09	LEU11
Iron	1.43 - 4.86	0.70 - 4.78	0.51 - 4.04	0.13 - 2.75
Chromium	0.30 - 0.64	0.37 - 0.59	0.46 - 0.61	0.34 - 0.48
Manganese	0.31 - 0.84	0.00 - 0.20	0.000 - 0.136	0.000 - 0.133
Cobalt	0.00 - 0.26	0.00 - 0.16	0.000 - 1.115	0.000 - 0.113
Nickel	0.00 - 1.28	0.02 - 0.84	0.38 - 0.96	0.02 - 0.59
Calcium	39.23 - 40.78	30.35 - 36.05	36.20 - 39.34	34.29 - 35.16
Aluminum	31.37 - 31.48	30.01 - 30.08	29.60 - 29.60	42.69
Titanium	7.77 - 9.12	2.17 - 3.05	2.20 - 2.81	2.76 - 3.31
Vanadium	20.06 - 20.37	18.01 - 18.23	16.94 - 17.09	15.27 - 15.41

Table 5 is a summary of the measured defect fractions for AGR-2 fuel compacts. Listed in the table are the actual numbers of defects observed for the numbers of particles analyzed. In parentheses are the binomial distribution calculated upper limits of the 95% confidence interval on the various defect fractions. In other words, these values are the lowest tolerance limits for which the compact lot would be deemed acceptable at 95% confidence, based on the particular sample that was measured. In many cases zero defects were observed. The defect fractions listed in the table for these cases are limited by the number of particles measured. The actual defect fraction could be much lower.

Table 5. Quick reference table for key attribute properties

Defect Property	LEU06	LEU07	LEU09	LEU11
Exposed kernel fraction	10/127448 (≤1.4E-4)	15/317690 (≤7.3E-5)	3/317625 (≤2.5E-5)	3/246840 (≤3.2E-5)
Defective SiC coating fraction	0/127448 (≤2.4E-5)	0/190614 (≤1.6E-5)	0/254100 (≤1.2E-5)	0/123420 (≤2.5E-5)
Defective IPyC coating fraction	0/63724 (≤4.8E-5)	443/63538 (≤7.6E-3)	0/63525 (≤4.8E-5)	1/61710 (≤7.7E-5)
Defective OPyC coating fraction	0/3186 (≤9.4E-4)	0/3177 (≤9.5E-4)	0/3176 (≤9.5E-4)	0/1543 (≤2.0E-3)

Values in parentheses are 95% confidence limits.

Exposed kernel defects are those kernels that are not protected by any coating layer, which can be due to fracture of the TRISO coating during particle handling operations or coating damage during compacting. The fraction of exposed kernels is determined from the dissolved uranium in the pre-burn leach solutions during deconsolidation-LBL analysis. Particles with SiC coating defects are particles whose kernels become exposed only after removal of exposed carbon during the burn step of the LBL analysis. This can indicate porous or cracked SiC layers that may not retain fission products during reactor operation. The fraction of particles with SiC coating defects is determined from the dissolved uranium in the post-burn leach solutions. Particles with defective IPyC coatings are particles that

allow unacceptable chlorine intrusion through the IPyC layer during SiC deposition. When particles are at an elevated temperature during coating and compacting, chlorine in the buffer layer can react with uranium in the kernel, causing it to migrate out of the kernel. Particles with defective IPyC coatings are detected by using x-ray imaging to look for excessive uranium dispersion in the buffer layer of particles deconsolidated from compacts. Particles with OPyC coating defects are particles that exhibit missing or damaged outer pyrocarbon, a condition that can occur during particle handling or compacting. The fraction of particles with defective OPyC is determined by visual inspection of particles deconsolidated from compacts.

The AGR-2 Fuel Specification (INL SPC-923) included a requirement for a uranium contamination fraction (grams exposed U per grams U in compact) of ≤2E-5 at 95% confidence. Uranium contamination is defined as uranium that is not encapsulated by a fission gas retentive coating layer. It is determined from analysis of the first series of acid leach solutions obtained by LBL (before the burn) and includes any exposed kernels, uranium in the compact's graphite matrix, and uranium near the surface of the TRISO particles. For AGR-2 compacts, the total uranium contamination fraction was dominated by the exposed kernel fraction described above. The relatively high fractions of particles with exposed kernels reported in Table 5 was determined to most likely have occurred at B&W during removal of the particles from the coating furnace via a suction transfer system. Compact lots LEU06–OP1–Z and LEU07–OP1–Z were rejected primarily because of these defects (LEU07 also had an unacceptable fraction of particles with defective IPyC). The uranium contamination fractions for LEU09–OP2–Z and LEU11–OP2–Z were also above the specified limit at 95% confidence, but these compacts were dispositioned as acceptable for use in the irradiation. This disposition was partially justified by the fact that the actual measured defect fractions were less than 2E-5 and analysis of a larger sample size may have eventually provided data that would satisfy the specification at 95% confidence.

Improvements in the particle handling systems have been made at B&W as a result of the lessons learned from the AGR-2 fuel fabrication campaign. Future exposed kernel fractions are expected to be significantly reduced from the levels reported in Table 5. In the LBL analysis, compacts were inspected in sets of five compacts each. It is useful to consider the results from the sample sets that did not contain compacts with exposed kernel defects. The total amount of uranium not contained by SiC can be determined by analyzing all the acid leach solutions obtained by LBL (both before and after the burn). Table 6 summarizes this analysis for only those fuel compact sets with no exposed kernels or defective SiC. This provides a measure of the uranium contamination in the outer pyrocarbon and graphite matrix.

Table 6. Uranium not contained by SiC in compacts with intact SiC

Defect Property	LEU06	LEU07	LEU09	LEU11
Number of compacts analyzed with no exposed kernels or defective SiC	10	20	65	75
Total uranium measured by LBL (gU)	2.82E-5	1.04E-4	3.18E-4	7.04E-5
Fraction of uranium outside SiC (gU/gU in compact)	2.24E-6	4.14E-6	3.89E-6	9.45E-7

Appendix A : Compact dimensions, mass, matrix density, and packing fraction

The diameter of a nominally cylindrical compact is inspected by measuring two orthogonal thicknesses near the top, middle and bottom using a digital caliper. Because these six chord measurements do not determine maximum diameter at all points or curvature of the compact, the conformance of the compact to fit within a cylinder of specified maximum diameter is checked by passing through a 12.460(+0.000/-0.001) mm inner diameter and 20-mm-thick ring gauge. The length of a compact is determined by measuring the distance between the ends of the compact using a vertical height gauge. The two contact faces of the height gauge are parallel and larger in diameter than the ends of the compact.

Average matrix density is calculated from

$$\frac{matrix\ \ weight}{matrix\ \ volume} = \frac{compact\ \ weight - particle\ \ weight}{compact\ \ volume - particle\ \ volume}.$$

Compact weight is measured directly on each compact. Compact volume is calculated for each compact from the measured length and average of the measured diameters, assuming a cylindrical geometry. Total particle weight is estimated from the average weight per TRISO particle multiplied by the number of particles in the compact. The number of particles in the compact is estimated from the total weight of the overcoated particles used in the compact charge divided by the average weight per overcoated particle.

$$particle\ \ weight = average\ \ weight\ \ per\ \ TRISO\ \ particle \times approximate\ \ number\ \ of\ \ particles$$

$$approximate\ \ number\ \ of\ \ particles = Round\ \ to\ \ Integer\left(\frac{overcoated\ \ particle\ \ weight}{average\ \ weight\ \ per\ \ overcoated\ \ particle}\right)$$

The particle volume is estimated from the average TRISO particle volume multiplied by the number of particles in the compact, which is estimated as for particle weight.

$$particle\ \ volume = average\ \ volume\ \ per\ \ TRISO\ \ particle \times approximate\ \ number\ \ of\ \ particles$$

Average packing fraction is determined as the total particle volume divided by the compact volume.

This appendix contains information on the compact length, diameter, mass for each individual compact in DRF-24A and the calculated packing fraction and matrix density in DRF-24B.

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/5/09
Pass-thru block calibration due date:	1/17/09
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z001	25.177	12.29	12.27	12.29	12.29	12.28	12.28	Y	6.2480	pass
Z002	25.025	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2585	pass
Z003	25.192	12.29	12.28	12.30	12.30	12.30	12.30	Y	6.2521	pass
Z004	25.133	12.28	12.27	12.29	12.29	12.28	12.28	Y	6.2508	pass
Z005	25.003	12.29	12.28	12.29	12.30	12.28	12.28	Y	6.2698	fail
Z006	25.099	12.27	12.27	12.28	12.28	12.28	12.27	Y	6.2659	pass
Z007	25.265	12.30	12.30	12.30	12.29	12.31	12.30	Y	6.2593	pass
Z008	25.242	12.28	12.28	12.28	12.28	12.28	12.28	Y	6.2668	pass
Z009	25.199	12.29	12.28	12.29	12.30	12.27	12.28	Y	6.2563	pass
Z010	25.031	12.28	12.29	12.29	12.29	12.27	12.27	Y	6.2610	pass
Z011	25.117	12.28	12.27	12.30	12.30	12.28	12.28	Y	6.2700	pass
Z012	25.318	12.29	12.30	12.30	12.30	12.28	12.28	Y	6.2599	pass
Z013	25.173	12.28	12.29	12.29	12.30	12.30	12.28	Y	6.2544	pass
Z014	25.235	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2670	pass
Z015	25.056	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.2614	pass
Z016	25.098	12.27	12.28	12.28	12.28	12.28	12.28	Y	6.2468	pass
Z017	25.095	12.28	12.27	12.29	12.29	12.27	12.28	Y	6.2747	pass
Z018	25.153	12.27	12.28	12.29	12.29	12.27	12.27	Y	6.2644	pass
Z019	25.173	12.27	12.28	12.28	12.28	12.28	12.28	Y	6.2449	pass
Z020	25.314	12.27	12.27	12.27	12.28	12.27	12.27	Y	6.2618	pass
Z021	25.151	12.27	12.27	12.28	12.28	12.27	12.27	Y	6.2629	pass
Z022	25.205	12.27	12.28	12.29	12.28	12.27	12.27	Y	6.2646	pass
Z023	25.029	12.27	12.27	12.28	12.27	12.26	12.26	Y	6.2530	pass
Z024	25.150	12.28	12.28	12.29	12.29	12.27	12.27	Y	6.2486	pass
Z025	25.149	12.27	12.28	12.29	12.29	12.28	12.28	Y	6.2617	pass
Z026	25.225	12.28	12.27	12.29	12.28	12.27	12.28	Y	6.2462	pass
Z027	25.361	12.29	12.28	12.29	12.29	12.27	12.27	Y	6.2610	pass
Z028	25.189	12.29	12.28	12.29	12.29	12.28	12.27	Y	6.2592	pass
Z029	25.129	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2610	pass
Z030	25.319	12.29	12.27	12.28	12.28	12.28	12.27	Y	6.2406	pass
Z031	25.325	12.29	12.28	12.29	12.29	12.28	12.27	Y	6.2613	pass
Z032	25.173	12.27	12.27	12.29	12.29	12.29	12.28	Y	6.2553	pass
Z033	25.175	12.29	12.28	12.30	12.30	12.30	12.29	Y	6.2416	pass
Z034	25.191	12.28	12.27	12.29	12.29	12.28	12.29	Y	6.2526	pass
Z035	25.035	12.27	12.26	12.28	12.27	12.26	12.26	Y	6.2667	pass
Z036	25.225	12.27	12.27	12.29	12.29	12.29	12.28	Y	6.2640	pass
Z037	25.148	12.28	12.27	12.29	12.29	12.29	12.28	Y	6.2580	pass
Z038	25.151	12.26	12.26	12.27	12.27	12.26	12.27	Y	6.2720	pass
Z039	25.057	12.27	12.27	12.28	12.27	12.27	12.27	Y	6.2644	pass
Z040	25.215	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2623	pass

Comments

Compact LEU06-OP1-Z005 was 0.017 mm below the lower limit on compact length; this compact was used for LBL analysis.

Operator	2-27-09
QC Supervisor	7-24-09
QA Reviewer	12/8/09

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/5/09
Pass-thru block calibration due date:	1/17/09
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z041	25.263	12.28	12.27	12.29	12.29	12.28	12.28	Y	6.2570	pass
Z042	25.248	12.28	12.27	12.29	12.28	12.28	12.27	Y	6.2592	pass
Z043	25.059	12.28	12.27	12.29	12.29	12.27	12.28	Y	6.2391	pass
Z044	25.015	12.27	12.27	12.28	12.29	12.27	12.27	Y	6.2207	fail
Z045	25.111	12.27	12.27	12.29	12.28	12.26	12.27	Y	6.2484	pass
Z046	25.236	12.26	12.27	12.28	12.27	12.27	12.27	Y	6.2633	pass
Z047	25.305	12.27	12.26	12.28	12.29	12.27	12.26	Y	6.2569	pass
Z048	25.180	12.28	12.28	12.29	12.30	12.28	12.29	Y	6.2583	pass
Z049	25.340	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2775	pass
Z050	25.262	12.27	12.28	12.28	12.28	12.27	12.27	Y	6.2359	pass
Z051	25.133	12.26	12.26	12.29	12.28	12.26	12.27	Y	6.2435	pass
Z052	25.205	12.27	12.26	12.28	12.28	12.27	12.27	Y	6.2631	pass
Z053	25.123	12.27	12.26	12.28	12.29	12.28	12.27	Y	6.2432	pass
Z054	25.270	12.28	12.29	12.30	12.29	12.28	12.29	Y	6.2561	pass
Z055	25.175	12.28	12.28	12.29	12.28	12.28	12.27	Y	6.2570	pass
Z056	25.182	12.28	12.27	12.29	12.29	12.27	12.28	Y	6.2478	pass
Z057	25.101	12.26	12.26	12.27	12.27	12.26	12.27	Y	6.2667	pass
Z058	25.138	12.28	12.27	12.29	12.28	12.27	12.27	Y	6.2384	pass
Z059	25.292	12.28	12.27	12.28	12.28	12.28	12.28	Y	6.2209	pass
Z060	25.157	12.27	12.28	12.28	12.28	12.27	12.28	Y	6.2519	pass
Z061	25.148	12.28	12.29	12.28	12.28	12.27	12.28	Y	6.2444	pass
Z062	25.264	12.28	12.28	12.28	12.28	12.27	12.27	Y	6.2791	pass
Z063	25.214	12.27	12.27	12.29	12.28	12.27	12.27	Y	6.2543	pass
Z064	25.238	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2576	pass
Z065	25.130	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2621	pass
Z066	25.104	12.27	12.27	12.29	12.28	12.27	12.27	Y	6.2522	pass
Z067	25.118	12.27	12.28	12.29	12.29	12.28	12.28	Y	6.2561	pass
Z068	25.140	12.28	12.27	12.29	12.29	12.28	12.29	Y	6.2603	pass
Z069	25.201	12.29	12.29	12.30	12.28	12.29	12.29	Y	6.2533	pass
Z070	25.229	12.29	12.28	12.30	12.29	12.28	12.28	Y	6.2581	pass
Z071	25.052	12.29	12.28	12.30	12.30	12.29	12.29	Y	6.2468	pass
Z072	25.040	12.30	12.30	12.31	12.31	12.29	12.29	Y	6.2603	pass
Z073	25.185	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2516	pass
Z074	25.209	12.29	12.30	12.30	12.30	12.29	12.30	Y	6.2532	pass
Z075	25.097	12.29	12.29	12.30	12.31	12.29	12.30	Y	6.2532	pass
Z076	25.152	12.28	12.28	12.30	12.29	12.28	12.28	Y	6.2613	pass
Z077	25.255	12.29	12.29	12.30	12.29	12.28	12.29	Y	6.2377	pass
Z078	25.242	12.30	12.30	12.30	12.31	12.29	12.29	Y	6.2327	pass
Z079	25.179	12.29	12.28	12.30	12.30	12.29	12.30	Y	6.2446	pass
Z080	25.317	12.29	12.30	12.31	12.31	12.30	12.30	Y	6.2702	pass

Comments
Compact LEU06-OP1-Z044 was 0.005 mm below the lower limit on compact length; this compact is available for irradiation.

IDL — Operator

2-27-09 — Date

John Kim — QC Supervisor

7-24-09 — Date

M. C. Price — QA Reviewer

12/8/09 — Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

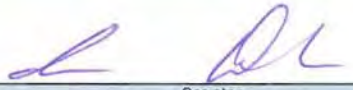
Vertical height gauge calibration due date:	3/5/09
Pass-thru block calibration due date:	1/17/09
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z081	25.355	12.30	12.30	12.30	12.30	12.30	12.30	Y	6.2417	pass
Z082	25.110	12.30	12.30	12.30	12.31	12.30	12.30	Y	6.2533	pass
Z083	25.318	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2374	pass
Z084	25.258	12.30	12.30	12.31	12.31	12.30	12.29	Y	6.2519	pass
Z085	25.157	12.30	12.29	12.32	12.31	12.30	12.30	Y	6.2596	pass
Z086	25.145	12.30	12.30	12.31	12.31	12.30	12.29	Y	6.2504	pass
Z087	24.888	12.29	12.29	12.30	12.29	12.28	12.28	Y	6.2392	fail
Z088	25.183	12.29	12.29	12.31	12.30	12.29	12.29	Y	6.2598	pass
Z089	25.185	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2505	pass
Z090	25.145	12.30	12.30	12.30	12.30	12.30	12.30	Y	6.2583	pass
Z091	25.312	12.30	12.30	12.31	12.30	12.29	12.29	Y	6.2630	pass
Z092	25.140	12.31	12.30	12.31	12.30	12.31	12.31	Y	6.2565	pass
Z093	25.222	12.29	12.29	12.31	12.31	12.29	12.30	Y	6.2624	pass
Z094	25.231	12.29	12.29	12.30	12.30	12.30	12.29	Y	6.2673	pass
Z095	25.052	12.29	12.30	12.30	12.30	12.29	12.28	Y	6.2520	pass
Z096	25.031	12.29	12.30	12.30	12.31	12.29	12.28	Y	6.2423	pass
Z097	25.208	12.30	12.30	12.30	12.30	12.30	12.29	Y	6.2401	pass
Z098	25.284	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2372	pass
Z099	25.436	12.31	12.31	12.31	12.31	12.30	12.30	Y	6.2695	fail
Z100	25.200	12.29	12.30	12.31	12.29	12.30	12.29	Y	6.2560	pass
Z101	25.130	12.31	12.31	12.31	12.31	12.31	12.31	Y	6.2578	pass
Z102	25.055	12.30	12.29	12.30	12.30	12.30	12.30	Y	6.2366	pass
Z103	25.105	12.29	12.30	12.31	12.31	12.29	12.28	Y	6.2580	pass
Z104	25.090	12.30	12.30	12.31	12.31	12.30	12.29	Y	6.2679	pass
Z105	25.030	12.30	12.30	12.30	12.31	12.30	12.30	Y	6.2612	pass
Z106	25.048	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.2478	pass
Z107	25.137	12.30	12.29	12.29	12.29	12.29	12.29	Y	6.2567	pass
Z108	25.361	12.30	12.29	12.31	12.30	12.29	12.29	Y	6.2392	pass
Z109	25.154	12.30	12.30	12.31	12.31	12.31	12.30	Y	6.2475	pass
Z110	25.261	12.29	12.28	12.30	12.30	12.29	12.29	Y	6.2650	pass
Z111	25.152	12.29	12.28	12.28	12.28	12.28	12.28	Y	6.2692	pass
Z112	25.214	12.29	12.29	12.31	12.31	12.30	12.31	Y	6.2469	pass
Z113	25.204	12.30	12.29	12.30	12.31	12.30	12.29	Y	6.2511	pass
Z114	25.133	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.2580	pass
Z115	25.306	12.30	12.28	12.30	12.30	12.29	12.29	Y	6.2647	pass
Z116	25.236	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2417	pass
Z117	25.213	12.28	12.29	12.30	12.30	12.28	12.29	Y	6.2448	pass
Z118	25.161	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.2392	pass
Z119	25.233	12.30	12.30	12.31	12.31	12.31	12.30	Y	6.2487	pass
Z120	25.130	12.30	12.31	12.29	12.30	12.30	12.29	Y	6.2484	pass

Comments

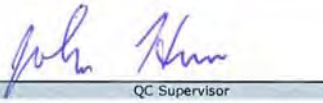
Compact LEU06-OP1-Z087 was 0.132 mm below the lower limit on compact length; this compact was used for LBL analysis.
Compact LEU06-OP1-Z099 was 0.036 mm over the upper limit on compact length; this compact was used for LBL analysis.



Operator

2-27-09

Date



QC Supervisor

7-24-09

Date

QA Reviewer

12/8/09

Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/5/09
Pass-thru block calibration due date:	1/17/09
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z121	25.065	12.28	12.28	12.30	12.30	12.29	12.29	Y	6.2379	pass
Z122	25.172	12.29	12.29	12.30	12.31	12.29	12.29	Y	6.2575	pass
Z123	25.194	12.30	12.30	12.31	12.31	12.29	12.29	Y	6.2614	pass
Z124	25.192	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2667	pass
Z125	25.193	12.30	12.29	12.30	12.30	12.30	12.29	Y	6.2300	pass
Z126	25.309	12.30	12.28	12.31	12.30	12.29	12.30	Y	6.2488	pass
Z127	25.345	12.30	12.30	12.30	12.30	12.30	12.30	Y	6.2608	pass
Z128	25.299	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.2596	pass
Z129	25.154	12.30	12.30	12.31	12.32	12.31	12.31	Y	6.2658	pass
Z130	25.175	12.30	12.30	12.30	12.30	12.29	12.29	Y	6.2507	pass
Z131	25.040	12.28	12.29	12.31	12.30	12.30	12.30	Y	6.2226	pass
Z132	25.224	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.2618	pass
Z133	25.176	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2496	pass
Z134	25.325	12.29	12.29	12.30	12.30	12.30	12.29	Y	6.2204	pass
Z135	25.199	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2543	pass
Z136										
Z137										
Z138										
Z139										
Z140										
Z141										
Z142										
Z143										
Z144										
Z145										
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Z158										
Z159										
Z160										

Comments

Operator — Date: 2-27-09

QC Supervisor — Date: 7-24-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.036E-03
Average weight per overcoated particle (g):	1.977E-03
Average TRISO particle volume (cm3):	3.460E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z001	6.2480	25.177	12.28	2.98	6.3268	3.3152	1.11	37%	1.56	pass
Z002	6.2585	25.025	12.29	2.97	6.3272	3.3152	1.11	37%	1.58	pass
Z003	6.2521	25.192	12.30	2.99	6.3275	3.3162	1.11	37%	1.56	pass
Z004	6.2508	25.133	12.28	2.98	6.3268	3.3152	1.11	37%	1.57	pass
Z005	6.2698	25.003	12.29	2.96	6.3264	3.3152	1.11	37%	1.59	pass
Z006	6.2659	25.099	12.28	2.97	6.3273	3.3152	1.11	37%	1.58	pass
Z007	6.2593	25.265	12.30	3.00	6.3271	3.3152	1.11	37%	1.55	pass
Z008	6.2668	25.242	12.28	2.99	6.3254	3.3142	1.11	37%	1.57	pass
Z009	6.2563	25.199	12.29	2.99	6.3264	3.3152	1.11	37%	1.56	pass
Z010	6.2610	25.031	12.28	2.97	6.3262	3.3152	1.11	37%	1.59	pass
Z011	6.2700	25.117	12.29	2.98	6.3273	3.3152	1.11	37%	1.58	pass
Z012	6.2599	25.318	12.29	3.00	6.3263	3.3152	1.11	37%	1.55	pass
Z013	6.2544	25.173	12.29	2.99	6.3280	3.3162	1.11	37%	1.56	pass
Z014	6.2670	25.235	12.29	3.00	6.3274	3.3162	1.11	37%	1.56	pass
Z015	6.2614	25.056	12.29	2.97	6.3268	3.3152	1.11	37%	1.58	pass
Z016	6.2468	25.098	12.28	2.97	6.3268	3.3152	1.11	37%	1.57	pass
Z017	6.2747	25.095	12.28	2.97	6.3278	3.3162	1.11	37%	1.59	pass
Z018	6.2644	25.153	12.28	2.98	6.3278	3.3162	1.11	37%	1.58	pass
Z019	6.2449	25.173	12.28	2.98	6.3276	3.3162	1.11	37%	1.56	pass
Z020	6.2618	25.314	12.27	2.99	6.3276	3.3162	1.11	37%	1.56	pass
Z021	6.2629	25.151	12.27	2.98	6.3277	3.3162	1.11	37%	1.58	pass
Z022	6.2646	25.205	12.28	2.98	6.3275	3.3162	1.11	37%	1.57	pass
Z023	6.2530	25.029	12.27	2.96	6.3270	3.3152	1.11	37%	1.59	pass
Z024	6.2486	25.150	12.28	2.98	6.3278	3.3162	1.11	37%	1.57	pass
Z025	6.2617	25.149	12.28	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z026	6.2462	25.225	12.28	2.99	6.3281	3.3162	1.11	37%	1.56	pass
Z027	6.2610	25.361	12.28	3.00	6.3281	3.3162	1.11	37%	1.55	pass
Z028	6.2592	25.189	12.28	2.98	6.3285	3.3162	1.11	37%	1.57	pass
Z029	6.2610	25.129	12.29	2.98	6.3261	3.3152	1.11	37%	1.57	pass
Z030	6.2406	25.319	12.28	3.00	6.3280	3.3162	1.11	37%	1.55	pass
Z031	6.2613	25.325	12.28	3.00	6.3268	3.3152	1.11	37%	1.56	pass
Z032	6.2553	25.173	12.28	2.98	6.3272	3.3152	1.11	37%	1.57	pass
Z033	6.2416	25.175	12.29	2.99	6.3268	3.3152	1.11	37%	1.56	pass
Z034	6.2526	25.191	12.28	2.99	6.3264	3.3152	1.11	37%	1.56	pass
Z035	6.2667	25.035	12.27	2.96	6.3269	3.3152	1.11	37%	1.59	pass
Z036	6.2640	25.225	12.28	2.99	6.3267	3.3152	1.11	37%	1.57	pass
Z037	6.2580	25.148	12.28	2.98	6.3271	3.3152	1.11	37%	1.57	pass
Z038	6.2720	25.151	12.27	2.97	6.3267	3.3152	1.11	37%	1.59	pass
Z039	6.2644	25.057	12.27	2.96	6.3262	3.3152	1.11	37%	1.59	pass
Z040	6.2623	25.215	12.28	2.99	6.3267	3.3152	1.11	37%	1.57	pass

Comments
Overcoated particle weight from combined results of 2 independent measurements (W09011401 and W09011402).

Operator	2-27-09 Date
QC Supervisor	7-24-09 Date
QA Reviewer	12/8/09 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.036E-03
Average weight per overcoated particle (g):	1.977E-03
Average TRISO particle volume (cm3):	3.460E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z041	6.2570	25.263	12.28	2.99	6.3273	3.3152	1.11	37%	1.56	pass
Z042	6.2592	25.248	12.28	2.99	6.3271	3.3152	1.11	37%	1.56	pass
Z043	6.2391	25.059	12.28	2.97	6.3267	3.3152	1.11	37%	1.57	pass
Z044	6.2207	25.015	12.28	2.96	6.3266	3.3152	1.11	37%	1.57	pass
Z045	6.2484	25.111	12.27	2.97	6.3272	3.3152	1.11	37%	1.57	pass
Z046	6.2633	25.236	12.27	2.98	6.3274	3.3162	1.11	37%	1.57	pass
Z047	6.2569	25.305	12.27	2.99	6.3274	3.3162	1.11	37%	1.56	pass
Z048	6.2583	25.180	12.29	2.99	6.3279	3.3162	1.11	37%	1.57	pass
Z049	6.2775	25.340	12.28	3.00	6.3258	3.3152	1.11	37%	1.56	pass
Z050	6.2359	25.262	12.28	2.99	6.3271	3.3152	1.11	37%	1.55	pass
Z051	6.2435	25.133	12.27	2.97	6.3271	3.3152	1.11	37%	1.57	pass
Z052	6.2631	25.205	12.27	2.98	6.3272	3.3152	1.11	37%	1.57	pass
Z053	6.2432	25.123	12.28	2.97	6.3276	3.3162	1.11	37%	1.57	pass
Z054	6.2561	25.270	12.29	3.00	6.3279	3.3162	1.11	37%	1.56	pass
Z055	6.2570	25.175	12.28	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z056	6.2478	25.182	12.28	2.98	6.3268	3.3152	1.11	37%	1.56	pass
Z057	6.2667	25.101	12.27	2.97	6.3273	3.3152	1.11	37%	1.59	pass
Z058	6.2384	25.138	12.28	2.98	6.3270	3.3152	1.11	37%	1.56	pass
Z059	6.2209	25.292	12.28	2.99	6.3260	3.3152	1.11	37%	1.54	pass
Z060	6.2519	25.157	12.28	2.98	6.3279	3.3162	1.11	37%	1.57	pass
Z061	6.2444	25.148	12.28	2.98	6.3272	3.3152	1.11	37%	1.57	pass
Z062	6.2791	25.264	12.28	2.99	6.3263	3.3152	1.11	37%	1.57	pass
Z063	6.2543	25.214	12.28	2.98	6.3274	3.3162	1.11	37%	1.57	pass
Z064	6.2576	25.238	12.29	2.99	6.3272	3.3152	1.11	37%	1.56	pass
Z065	6.2621	25.130	12.29	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z066	6.2522	25.104	12.28	2.97	6.3262	3.3152	1.11	37%	1.58	pass
Z067	6.2561	25.118	12.28	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z068	6.2603	25.140	12.28	2.98	6.3264	3.3152	1.11	37%	1.57	pass
Z069	6.2533	25.201	12.29	2.99	6.3279	3.3162	1.11	37%	1.56	pass
Z070	6.2581	25.229	12.29	2.99	6.3260	3.3152	1.11	37%	1.56	pass
Z071	6.2468	25.052	12.29	2.97	6.3267	3.3152	1.11	37%	1.57	pass
Z072	6.2603	25.040	12.30	2.98	6.3270	3.3152	1.11	37%	1.58	pass
Z073	6.2516	25.185	12.29	2.99	6.3270	3.3152	1.11	37%	1.56	pass
Z074	6.2532	25.209	12.30	2.99	6.3271	3.3152	1.11	37%	1.56	pass
Z075	6.2532	25.097	12.30	2.98	6.3279	3.3162	1.11	37%	1.57	pass
Z076	6.2613	25.152	12.29	2.98	6.3273	3.3152	1.11	37%	1.57	pass
Z077	6.2377	25.255	12.29	3.00	6.3263	3.3152	1.11	37%	1.55	pass
Z078	6.2327	25.242	12.30	3.00	6.3282	3.3162	1.11	37%	1.54	pass
Z079	6.2446	25.179	12.29	2.99	6.3282	3.3162	1.11	37%	1.56	pass
Z080	6.2702	25.317	12.30	3.01	6.3278	3.3162	1.11	37%	1.55	pass

Comments

Operator — Date: 2-27-09

QC Supervisor — Date: 7-24-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.036E-03
Average weight per overcoated particle (g):	1.977E-03
Average TRISO particle volume (cm3):	3.460E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z081	6.2417	25.355	12.30	3.01	6.3276	3.3162	1.11	37%	1.54	pass
Z082	6.2533	25.110	12.30	2.98	6.3279	3.3162	1.11	37%	1.56	pass
Z083	6.2374	25.318	12.29	3.00	6.3273	3.3152	1.11	37%	1.54	pass
Z084	6.2519	25.258	12.30	3.00	6.3269	3.3152	1.11	37%	1.55	pass
Z085	6.2596	25.157	12.30	2.99	6.3271	3.3152	1.11	37%	1.56	pass
Z086	6.2504	25.145	12.30	2.99	6.3261	3.3152	1.11	37%	1.56	pass
Z087	6.2392	24.888	12.29	2.95	6.3257	3.3152	1.11	38%	1.59	pass
Z088	6.2598	25.183	12.30	2.99	6.3274	3.3162	1.11	37%	1.56	pass
Z089	6.2505	25.185	12.29	2.99	6.3273	3.3152	1.11	37%	1.56	pass
Z090	6.2583	25.145	12.30	2.99	6.3270	3.3152	1.11	37%	1.56	pass
Z091	6.2630	25.312	12.30	3.01	6.3276	3.3162	1.11	37%	1.55	pass
Z092	6.2565	25.140	12.31	2.99	6.3268	3.3152	1.11	37%	1.56	pass
Z093	6.2624	25.222	12.30	3.00	6.3276	3.3162	1.11	37%	1.56	pass
Z094	6.2673	25.231	12.30	3.00	6.3282	3.3162	1.11	37%	1.56	pass
Z095	6.2520	25.052	12.29	2.97	6.3286	3.3162	1.11	37%	1.57	pass
Z096	6.2423	25.031	12.30	2.97	6.3270	3.3152	1.11	37%	1.57	pass
Z097	6.2401	25.208	12.30	2.99	6.3282	3.3162	1.11	37%	1.55	pass
Z098	6.2372	25.284	12.29	3.00	6.3270	3.3152	1.11	37%	1.54	pass
Z099	6.2695	25.436	12.31	3.03	6.3264	3.3152	1.11	37%	1.54	pass
Z100	6.2560	25.200	12.30	2.99	6.3266	3.3152	1.11	37%	1.56	pass
Z101	6.2578	25.130	12.31	2.99	6.3271	3.3152	1.11	37%	1.56	pass
Z102	6.2366	25.055	12.30	2.98	6.3264	3.3152	1.11	37%	1.56	pass
Z103	6.2580	25.105	12.30	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z104	6.2679	25.090	12.30	2.98	6.3270	3.3152	1.11	37%	1.57	pass
Z105	6.2612	25.030	12.30	2.97	6.3279	3.3162	1.11	37%	1.58	pass
Z106	6.2478	25.048	12.30	2.98	6.3266	3.3152	1.11	37%	1.57	pass
Z107	6.2567	25.137	12.29	2.98	6.3274	3.3162	1.11	37%	1.57	pass
Z108	6.2392	25.361	12.30	3.01	6.3263	3.3152	1.11	37%	1.54	pass
Z109	6.2475	25.154	12.31	2.99	6.3278	3.3162	1.11	37%	1.56	pass
Z110	6.2650	25.261	12.29	3.00	6.3275	3.3162	1.11	37%	1.56	pass
Z111	6.2692	25.152	12.28	2.98	6.3272	3.3152	1.11	37%	1.58	pass
Z112	6.2469	25.214	12.30	3.00	6.3266	3.3152	1.11	37%	1.55	pass
Z113	6.2511	25.204	12.30	2.99	6.3271	3.3152	1.11	37%	1.56	pass
Z114	6.2580	25.133	12.30	2.99	6.3274	3.3162	1.11	37%	1.56	pass
Z115	6.2647	25.306	12.29	3.00	6.3279	3.3162	1.11	37%	1.55	pass
Z116	6.2417	25.236	12.29	3.00	6.3275	3.3162	1.11	37%	1.55	pass
Z117	6.2448	25.213	12.29	2.99	6.3266	3.3152	1.11	37%	1.56	pass
Z118	6.2392	25.161	12.30	2.99	6.3290	3.3162	1.11	37%	1.55	pass
Z119	6.2487	25.233	12.31	3.00	6.3265	3.3152	1.11	37%	1.55	pass
Z120	6.2484	25.130	12.30	2.99	6.3266	3.3152	1.11	37%	1.56	pass

Comments

Operator — Date: 2-27-09

QC Supervisor — Date: 7-24-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.036E-03
Average weight per overcoated particle (g):	1.977E-03
Average TRISO particle volume (cm3):	3.460E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z121	6.2379	25.065	12.29	2.97	6.3275	3.3162	1.11	37%	1.57	pass
Z122	6.2575	25.172	12.30	2.99	6.3278	3.3162	1.11	37%	1.56	pass
Z123	6.2614	25.194	12.30	2.99	6.3260	3.3152	1.11	37%	1.56	pass
Z124	6.2667	25.192	12.29	2.99	6.3265	3.3152	1.11	37%	1.57	pass
Z125	6.2300	25.193	12.30	2.99	6.3270	3.3152	1.11	37%	1.55	pass
Z126	6.2488	25.309	12.30	3.01	6.3281	3.3162	1.11	37%	1.54	pass
Z127	6.2608	25.345	12.30	3.01	6.3264	3.3152	1.11	37%	1.55	pass
Z128	6.2596	25.299	12.30	3.01	6.3272	3.3152	1.11	37%	1.55	pass
Z129	6.2658	25.154	12.31	2.99	6.3267	3.3152	1.11	37%	1.56	pass
Z130	6.2507	25.175	12.30	2.99	6.3279	3.3162	1.11	37%	1.56	pass
Z131	6.2226	25.040	12.30	2.97	6.3270	3.3152	1.11	37%	1.56	pass
Z132	6.2618	25.224	12.30	3.00	6.3279	3.3162	1.11	37%	1.56	pass
Z133	6.2496	25.176	12.29	2.99	6.3287	3.3162	1.11	37%	1.56	pass
Z134	6.2204	25.325	12.30	3.01	6.3276	3.3162	1.11	37%	1.53	pass
Z135	6.2543	25.199	12.29	2.99	6.3279	3.3162	1.11	37%	1.56	pass
Z136										
Z137										
Z138										
Z139										
Z140										
Z141										
Z142										
Z143										
Z144										
Z145										
Z146										
Z147										
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Z150										
Z151										
Z152										
Z153										
Z154										
Z155										
Z156										
Z157										
Z158										
Z159										
Z160										

Comments

Operator — Date: 2-27-09

QC Supervisor — Date: 7-24-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24C: Compact Tracking

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Compact Z Number	Compact G Number
Z001	G043
Z002	G165
Z003	G104
Z004	G040
Z005	G177
Z006	G158
Z007	G094
Z008	G142
Z009	G125
Z010	G154
Z011	G173
Z012	G128
Z013	G096
Z014	G123
Z015	G122
Z016	G055
Z017	G179
Z018	G095
Z019	G037
Z020	G087
Z021	G159
Z022	G075
Z023	G083
Z024	G109
Z025	G066
Z026	G036
Z027	G117
Z028	G099
Z029	G129
Z030	G008
Z031	G118
Z032	G126
Z033	G110
Z034	G124
Z035	G162
Z036	G130
Z037	G127
Z038	G176
Z039	G161
Z040	G093

Compact Z Number	Compact G Number
Z041	G116
Z042	G084
Z043	G028
Z044	G032
Z045	G073
Z046	G147
Z047	G078
Z048	G065
Z049	G143
Z050	G019
Z051	G033
Z052	G156
Z053	G027
Z054	G092
Z055	G053
Z056	G061
Z057	G160
Z058	G017
Z059	G009
Z060	G089
Z061	G112
Z062	G144
Z063	G041
Z064	G085
Z065	G137
Z066	G046
Z067	G121
Z068	G139
Z069	G068
Z070	G148
Z071	G030
Z072	G152
Z073	G115
Z074	G070
Z075	G090
Z076	G145
Z077	G013
Z078	G015
Z079	G057
Z080	G100

Compact Z Number	Compact G Number
Z081	G011
Z082	G067
Z083	G007
Z084	G105
Z085	G134
Z086	G131
Z087	G164
Z088	G074
Z089	G051
Z090	G101
Z091	G080
Z092	G133
Z093	G077
Z094	G006
Z095	G047
Z096	G114
Z097	G016
Z098	G005
Z099	G098
Z100	G049
Z101	G064
Z102	G060
Z103	G153
Z104	G163
Z105	G171
Z106	G108
Z107	G097
Z108	G021
Z109	G111
Z110	G138
Z111	G172
Z112	G062
Z113	G052
Z114	G132
Z115	G076
Z116	G014
Z117	G038
Z118	G004
Z119	G091
Z120	G069

Compact Z Number	Compact G Number
Z121	G034
Z122	G072
Z123	G135
Z124	G149
Z125	G018
Z126	G113
Z127	G136
Z128	G119
Z129	G141
Z130	G039
Z131	G035
Z132	G086
Z133	G058
Z134	G010
Z135	G103
Z136	
Z137	
Z138	
Z139	
Z140	
Z141	
Z142	
Z143	
Z144	
Z145	
Z146	
Z147	
Z148	
Z149	
Z150	
Z151	
Z152	
Z153	
Z154	
Z155	
Z156	
Z157	
Z158	
Z159	
Z160	

Comments

Operator

2-16-09

Date

Data Report Form DRF-24D: Compact Charge Weight

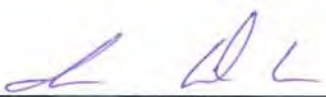
Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU06-OP1
Compact Lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU06-OP1_DRF24R6.xls

Analytical balance calibration due date:	10/29/09

Target compact charge weight (g):	6.3270
Allowable tolerance in compact charge weight (g):	0.0020
Average weight per overcoated particle (g):	1.977E-03
Approximate number of particles per compact:	3200
Average uranium loading per particle (g):	3.953E-04
Approximate uranium loading per compact (g):	1.265

Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)
G001	6.3272	G046	6.3262	G091	6.3265	G136	6.3264
G002	6.3280	G047	6.3286	G092	6.3279	G137	6.3270
G003	6.3274	G048	6.3267	G093	6.3267	G138	6.3275
G004	6.3290	G049	6.3266	G094	6.3271	G139	6.3264
G005	6.3270	G050	6.3275	G095	6.3278	G140	6.3275
G006	6.3282	G051	6.3273	G096	6.3280	G141	6.3267
G007	6.3273	G052	6.3271	G097	6.3274	G142	6.3254
G008	6.3280	G053	6.3270	G098	6.3264	G143	6.3258
G009	6.3260	G054	6.3277	G099	6.3285	G144	6.3263
G010	6.3276	G055	6.3268	G100	6.3278	G145	6.3273
G011	6.3276	G056	6.3286	G101	6.3270	G146	6.3262
G012	6.3264	G057	6.3282	G102	6.3274	G147	6.3274
G013	6.3263	G058	6.3287	G103	6.3279	G148	6.3260
G014	6.3275	G059	6.3266	G104	6.3275	G149	6.3265
G015	6.3282	G060	6.3264	G105	6.3269	G150	6.3269
G016	6.3282	G061	6.3268	G106	6.3272	G151	6.3276
G017	6.3270	G062	6.3266	G107	6.3281	G152	6.3270
G018	6.3270	G063	6.3278	G108	6.3266	G153	6.3270
G019	6.3271	G064	6.3271	G109	6.3278	G154	6.3262
G020	6.3278	G065	6.3279	G110	6.3268	G155	6.3279
G021	6.3263	G066	6.3270	G111	6.3278	G156	6.3272
G022	6.3252	G067	6.3279	G112	6.3272	G157	6.3264
G023	6.3282	G068	6.3279	G113	6.3281	G158	6.3273
G024	6.3272	G069	6.3266	G114	6.3270	G159	6.3277
G025	6.3283	G070	6.3271	G115	6.3270	G160	6.3273
G026	6.3286	G071	6.3269	G116	6.3273	G161	6.3262
G027	6.3276	G072	6.3278	G117	6.3281	G162	6.3269
G028	6.3267	G073	6.3272	G118	6.3268	G163	6.3270
G029	6.3261	G074	6.3274	G119	6.3272	G164	6.3257
G030	6.3267	G075	6.3275	G120	6.3276	G165	6.3272
G031	6.3266	G076	6.3279	G121	6.3270	G166	6.3264
G032	6.3266	G077	6.3276	G122	6.3268	G167	6.3280
G033	6.3271	G078	6.3274	G123	6.3274	G168	6.3266
G034	6.3275	G079	6.3273	G124	6.3264	G169	6.3269
G035	6.3270	G080	6.3276	G125	6.3264	G170	6.3261
G036	6.3281	G081	6.3281	G126	6.3272	G171	6.3279
G037	6.3276	G082	6.3276	G127	6.3271	G172	6.3272
G038	6.3266	G083	6.3270	G128	6.3263	G173	6.3273
G039	6.3279	G084	6.3271	G129	6.3261	G174	6.3270
G040	6.3268	G085	6.3272	G130	6.3267	G175	6.3278
G041	6.3274	G086	6.3279	G131	6.3261	G176	6.3267
G042	6.3268	G087	6.3276	G132	6.3274	G177	6.3264
G043	6.3268	G088	6.3266	G133	6.3268	G178	6.3270
G044	6.3269	G089	6.3279	G134	6.3271	G179	6.3278
G045	6.3284	G090	6.3279	G135	6.3260	G180	6.3270

Comments
Overcoated particle weight from combined results of 2 independent measurements (W09011401 and W09011402).



Operator

2-4-09

Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z001	25.242	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3449	pass
Z002	25.284	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3501	pass
Z003	25.159	12.31	12.31	12.32	12.32	12.32	12.32	Y	6.3504	pass
Z004	25.124	12.31	12.30	12.32	12.32	12.31	12.31	Y	6.3500	pass
Z005	25.218	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3466	pass
Z006	25.225	12.31	12.31	12.33	12.32	12.32	12.32	Y	6.3508	pass
Z007	25.242	12.31	12.31	12.32	12.32	12.31	12.32	Y	6.3453	pass
Z008	25.197	12.32	12.33	12.33	12.34	12.33	12.33	Y	6.3609	pass
Z009	25.165	12.30	12.31	12.32	12.32	12.31	12.31	Y	6.3542	pass
Z010	25.204	12.31	12.31	12.32	12.32	12.31	12.30	Y	6.3419	pass
Z011	25.144	12.31	12.31	12.32	12.32	12.30	12.30	Y	6.3376	pass
Z012	25.358	12.31	12.30	12.31	12.31	12.30	12.31	Y	6.3532	pass
Z013	25.217	12.30	12.30	12.32	12.32	12.31	12.31	Y	6.3393	pass
Z014	25.212	12.30	12.31	12.32	12.32	12.31	12.31	Y	6.3355	pass
Z015	25.352	12.32	12.32	12.33	12.33	12.31	12.31	Y	6.3399	pass
Z016	25.232	12.32	12.31	12.33	12.33	12.31	12.31	Y	6.3613	pass
Z017	25.063	12.31	12.31	12.32	12.31	12.30	12.30	Y	6.3530	pass
Z018	25.172	12.31	12.31	12.32	12.31	12.30	12.30	Y	6.3494	pass
Z019	25.215	12.31	12.30	12.32	12.32	12.30	12.30	Y	6.3473	pass
Z020	25.232	12.31	12.31	12.33	12.33	12.31	12.31	Y	6.3604	pass
Z021	25.073	12.31	12.30	12.31	12.32	12.30	12.31	Y	6.3369	pass
Z022	25.222	12.31	12.31	12.32	12.32	12.30	12.30	Y	6.3438	pass
Z023	25.152	12.30	12.31	12.32	12.32	12.30	12.30	Y	6.3443	pass
Z024	25.151	12.31	12.30	12.32	12.32	12.30	12.31	Y	6.3502	pass
Z025	25.112	12.31	12.31	12.32	12.31	12.32	12.32	Y	6.3495	pass
Z026	25.196	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3415	pass
Z027	25.233	12.31	12.30	12.32	12.32	12.31	12.31	Y	6.3492	pass
Z028	25.134	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3530	pass
Z029	25.093	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3447	pass
Z030	25.156	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3453	pass
Z031	25.134	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3499	pass
Z032	25.201	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3590	pass
Z033	25.093	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3267	pass
Z034	25.221	12.32	12.32	12.32	12.32	12.31	12.32	Y	6.3420	pass
Z035	25.303	12.30	12.30	12.32	12.32	12.30	12.30	Y	6.3611	pass
Z036	25.224	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3464	pass
Z037	25.134	12.30	12.30	12.31	12.32	12.31	12.30	Y	6.3399	pass
Z038	25.132	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3407	pass
Z039	25.185	12.31	12.31	12.32	12.33	12.32	12.31	Y	6.3449	pass
Z040	25.204	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3496	pass

Comments

Operator

4-17-09

Date

QC Supervisor

7-6-09

Date

QA Reviewer

12/8/09

Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z041	25.121	12.31	12.30	12.31	12.31	12.31	12.30	Y	6.3464	pass
Z042	25.226	12.31	12.31	12.32	12.33	12.32	12.31	Y	6.3584	pass
Z043	25.063	12.31	12.30	12.32	12.31	12.31	12.31	Y	6.3437	pass
Z044	25.091	12.30	12.31	12.31	12.32	12.30	12.30	Y	6.3397	pass
Z045	25.163	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3478	pass
Z046	25.076	12.30	12.30	12.32	12.32	12.30	12.30	Y	6.3524	pass
Z047	25.205	12.31	12.32	12.32	12.32	12.32	12.32	Y	6.3480	pass
Z048	25.120	12.32	12.31	12.32	12.32	12.31	12.32	Y	6.3350	pass
Z049	25.245	12.31	12.31	12.32	12.32	12.30	12.31	Y	6.3393	pass
Z050	25.134	12.31	12.32	12.34	12.34	12.31	12.32	Y	6.3517	pass
Z051	25.201	12.31	12.32	12.32	12.32	12.30	12.31	Y	6.3400	pass
Z052	25.234	12.31	12.32	12.32	12.33	12.32	12.32	Y	6.3528	pass
Z053	25.273	12.30	12.31	12.32	12.33	12.31	12.31	Y	6.3563	pass
Z054	25.157	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3552	pass
Z055	25.062	12.31	12.32	12.31	12.32	12.32	12.31	Y	6.3535	pass
Z056	25.241	12.31	12.31	12.32	12.32	12.31	12.32	Y	6.3569	pass
Z057	25.242	12.31	12.30	12.31	12.31	12.30	12.31	Y	6.3532	pass
Z058	25.174	12.32	12.31	12.32	12.31	12.32	12.31	Y	6.3426	pass
Z059	25.030	12.30	12.30	12.31	12.31	12.31	12.30	Y	6.3389	pass
Z060	25.267	12.32	12.32	12.33	12.33	12.33	12.32	Y	6.3550	pass
Z061	25.336	12.33	12.32	12.33	12.33	12.33	12.32	Y	6.3425	pass
Z062	25.218	12.31	12.32	12.32	12.32	12.30	12.31	Y	6.3434	pass
Z063	25.095	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3432	pass
Z064	25.131	12.32	12.32	12.32	12.32	12.31	12.31	Y	6.3355	pass
Z065	25.288	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3456	pass
Z066	25.134	12.33	12.32	12.33	12.33	12.32	12.32	Y	6.3521	pass
Z067	25.212	12.31	12.32	12.33	12.33	12.31	12.32	Y	6.3400	pass
Z068	25.165	12.31	12.31	12.32	12.32	12.32	12.32	Y	6.3575	pass
Z069	25.214	12.32	12.32	12.33	12.33	12.31	12.31	Y	6.3450	pass
Z070	25.177	12.31	12.31	12.33	12.33	12.31	12.31	Y	6.3416	pass
Z071	25.215	12.32	12.32	12.32	12.33	12.32	12.31	Y	6.3573	pass
Z072	25.152	12.31	12.31	12.32	12.32	12.30	12.30	Y	6.3374	pass
Z073	25.246	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3604	pass
Z074	25.134	12.32	12.31	12.32	12.32	12.31	12.31	Y	6.3449	pass
Z075	25.234	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3514	pass
Z076	25.251	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3512	pass
Z077	25.143	12.32	12.32	12.32	12.33	12.31	12.31	Y	6.3576	pass
Z078	25.234	12.31	12.31	12.32	12.32	12.31	12.32	Y	6.3293	pass
Z079	25.315	12.31	12.30	12.32	12.32	12.32	12.32	Y	6.3491	pass
Z080	25.161	12.32	12.31	12.32	12.32	12.30	12.31	Y	6.3478	pass

Comments

Operator

4-17-09
Date

QC Supervisor

7-6-09
Date

QA Reviewer

12/8/09
Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z081	25.083	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3519	pass
Z082	25.078	12.31	12.32	12.31	12.32	12.31	12.30	Y	6.3452	pass
Z083	25.155	12.31	12.32	12.32	12.32	12.31	12.31	Y	6.3436	pass
Z084	25.219	12.32	12.32	12.33	12.33	12.32	12.31	Y	6.3638	pass
Z085	25.196	12.32	12.30	12.33	12.32	12.31	12.31	Y	6.3373	pass
Z086	25.219	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3558	pass
Z087	25.340	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3544	pass
Z088	25.236	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3484	pass
Z089	25.223	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3548	pass
Z090	25.181	12.31	12.31	12.32	12.31	12.31	12.30	Y	6.3432	pass
Z091	25.115	12.32	12.32	12.33	12.33	12.32	12.31	Y	6.3576	pass
Z092	25.147	12.30	12.30	12.32	12.32	12.30	12.31	Y	6.3390	pass
Z093	25.163	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3559	pass
Z094	25.135	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3409	pass
Z095	25.233	12.31	12.31	12.33	12.33	12.32	12.32	Y	6.3616	pass
Z096	25.252	12.31	12.31	12.32	12.32	12.30	12.31	Y	6.3530	pass
Z097	25.185	12.31	12.31	12.32	12.33	12.32	12.31	Y	6.3451	pass
Z098	25.195	12.32	12.31	12.33	12.33	12.32	12.32	Y	6.3492	pass
Z099	25.206	12.32	12.31	12.33	12.32	12.30	12.31	Y	6.3549	pass
Z100	25.142	12.31	12.31	12.33	12.32	12.32	12.31	Y	6.3409	pass
Z101	25.146	12.30	12.30	12.32	12.32	12.30	12.31	Y	6.3309	pass
Z102	25.336	12.31	12.31	12.33	12.33	12.32	12.31	Y	6.3570	pass
Z103	25.195	12.32	12.32	12.33	12.33	12.33	12.32	Y	6.3386	pass
Z104	25.077	12.30	12.31	12.32	12.32	12.30	12.30	Y	6.3266	pass
Z105	25.133	12.30	12.30	12.32	12.32	12.31	12.31	Y	6.3386	pass
Z106	25.184	12.30	12.31	12.32	12.33	12.30	12.31	Y	6.3277	pass
Z107	25.175	12.31	12.31	12.33	12.33	12.31	12.32	Y	6.3457	pass
Z108	25.151	12.31	12.31	12.33	12.33	12.32	12.32	Y	6.3570	pass
Z109	25.194	12.32	12.32	12.34	12.33	12.32	12.31	Y	6.3308	pass
Z110	25.032	12.31	12.31	12.32	12.33	12.31	12.31	Y	6.3430	pass
Z111	25.238	12.31	12.32	12.32	12.33	12.31	12.31	Y	6.3402	pass
Z112	25.217	12.30	12.30	12.32	12.32	12.30	12.31	Y	6.3430	pass
Z113	25.177	12.30	12.30	12.32	12.31	12.30	12.31	Y	6.3466	pass
Z114	25.142	12.31	12.30	12.32	12.31	12.30	12.31	Y	6.3289	pass
Z115	25.192	12.31	12.32	12.32	12.32	12.31	12.31	Y	6.3347	pass
Z116	25.278	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3665	pass
Z117	25.135	12.30	12.30	12.32	12.32	12.31	12.31	Y	6.3332	pass
Z118	25.228	12.30	12.31	12.32	12.32	12.31	12.31	Y	6.3454	pass
Z119	25.112	12.32	12.31	12.32	12.32	12.30	12.30	Y	6.3501	pass
Z120	25.298	12.32	12.31	12.32	12.32	12.30	12.31	Y	6.3380	pass

Comments

Operator — Date: 4-17-09

QC Supervisor — Date: 7-6-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/22/09
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z121	25.198	12.30	12.31	12.32	12.32	12.30	12.30	Y	6.3425	pass
Z122	25.212	12.30	12.31	12.32	12.32	12.31	12.32	Y	6.3314	pass
Z123	25.446	12.32	12.32	12.33	12.33	12.31	12.31	Y	6.3512	fail
Z124	25.223	12.31	12.31	12.32	12.32	12.32	12.31	Y	6.3547	pass
Z125	25.217	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3364	pass
Z126	25.236	12.32	12.32	12.33	12.32	12.31	12.31	Y	6.3511	pass
Z127	25.178	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3486	pass
Z128	25.133	12.31	12.31	12.33	12.32	12.31	12.32	Y	6.3375	pass
Z129	25.215	12.32	12.31	12.34	12.33	12.32	12.32	Y	6.3397	pass
Z130	25.034	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3357	pass
Z131	25.172	12.34	12.34	12.34	12.34	12.32	12.33	Y	6.3512	pass
Z132	25.270	12.33	12.32	12.33	12.33	12.32	12.32	Y	6.3389	pass
Z133	25.214	12.32	12.31	12.33	12.33	12.32	12.32	Y	6.3505	pass
Z134	25.280	12.32	12.32	12.34	12.34	12.33	12.33	Y	6.3431	pass
Z135	25.155	12.32	12.31	12.32	12.32	12.32	12.31	Y	6.3369	pass
Z136	25.146	12.32	12.32	12.32	12.32	12.32	12.32	Y	6.3447	pass
Z137	25.218	12.33	12.33	12.34	12.34	12.34	12.33	Y	6.3539	pass
Z138	25.121	12.31	12.31	12.31	12.31	12.30	12.30	Y	6.3414	pass
Z139	25.213	12.32	12.32	12.33	12.33	12.31	12.31	Y	6.3589	pass
Z140	25.312	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3557	pass
Z141	25.126	12.30	12.31	12.31	12.32	12.30	12.30	Y	6.3407	pass
Z142	25.115	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3375	pass
Z143	25.204	12.33	12.33	12.34	12.34	12.32	12.33	Y	6.3528	pass
Z144	25.088	12.32	12.32	12.33	12.33	12.32	12.31	Y	6.3520	pass
Z145	25.154	12.31	12.31	12.32	12.32	12.31	12.31	Y	6.3434	pass
Z146	25.091	12.30	12.30	12.32	12.32	12.31	12.31	Y	6.3450	pass
Z147	25.194	12.33	12.33	12.34	12.34	12.33	12.32	Y	6.3492	pass
Z148	25.323	12.31	12.32	12.33	12.33	12.31	12.32	Y	6.3374	pass
Z149	25.260	12.33	12.33	12.33	12.33	12.32	12.33	Y	6.3448	pass
Z150	25.203	12.33	12.32	12.33	12.33	12.33	12.32	Y	6.3491	pass
Z151	25.186	12.32	12.32	12.33	12.33	12.32	12.32	Y	6.3405	pass
Z152	25.215	12.31	12.31	12.32	12.33	12.31	12.31	Y	6.3460	pass
Z153	25.142	12.31	12.31	12.32	12.32	12.31	12.30	Y	6.3440	pass
Z154	25.161	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3476	pass
Z155	25.088	12.32	12.31	12.32	12.32	12.32	12.33	Y	6.3344	pass
Z156										
Z157										
Z158										
Z159										
Z160										

Comments
Compact LEU07-OP1-Z123 was 0.046 mm over the upper limit on compact length; this compact was used for LBL analysis.

Operator — Date: 4-17-09

QC Supervisor — Date: 7-6-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.004E-03
Average weight per overcoated particle (g):	2.018E-03
Average TRISO particle volume (cm3):	3.290E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z001	6.3449	25.242	12.31	3.01	6.4589	3.2138	1.05	35%	1.60	pass
Z002	6.3501	25.284	12.31	3.01	6.4584	3.2128	1.05	35%	1.60	pass
Z003	6.3504	25.159	12.32	3.00	6.4589	3.2138	1.05	35%	1.61	pass
Z004	6.3500	25.124	12.31	2.99	6.4582	3.2128	1.05	35%	1.62	pass
Z005	6.3466	25.218	12.31	3.00	6.4576	3.2128	1.05	35%	1.61	pass
Z006	6.3508	25.225	12.32	3.01	6.4587	3.2138	1.05	35%	1.61	pass
Z007	6.3453	25.242	12.32	3.01	6.4582	3.2128	1.05	35%	1.60	pass
Z008	6.3609	25.197	12.33	3.01	6.4585	3.2128	1.05	35%	1.61	pass
Z009	6.3542	25.165	12.31	3.00	6.4583	3.2128	1.05	35%	1.62	pass
Z010	6.3419	25.204	12.31	3.00	6.4596	3.2138	1.05	35%	1.61	pass
Z011	6.3376	25.144	12.31	2.99	6.4575	3.2128	1.05	35%	1.61	pass
Z012	6.3532	25.358	12.31	3.02	6.4587	3.2138	1.05	35%	1.60	pass
Z013	6.3393	25.217	12.31	3.00	6.4572	3.2128	1.05	35%	1.60	pass
Z014	6.3355	25.212	12.31	3.00	6.4586	3.2128	1.05	35%	1.60	pass
Z015	6.3399	25.352	12.32	3.02	6.4568	3.2128	1.05	35%	1.59	pass
Z016	6.3613	25.232	12.32	3.01	6.4583	3.2128	1.05	35%	1.61	pass
Z017	6.3530	25.063	12.31	2.98	6.4592	3.2138	1.05	35%	1.63	pass
Z018	6.3494	25.172	12.31	3.00	6.4568	3.2128	1.05	35%	1.61	pass
Z019	6.3473	25.215	12.31	3.00	6.4592	3.2138	1.05	35%	1.61	pass
Z020	6.3604	25.232	12.32	3.01	6.4575	3.2128	1.05	35%	1.61	pass
Z021	6.3369	25.073	12.31	2.98	6.4569	3.2128	1.05	35%	1.62	pass
Z022	6.3438	25.222	12.31	3.00	6.4594	3.2138	1.05	35%	1.61	pass
Z023	6.3443	25.152	12.31	2.99	6.4568	3.2128	1.05	35%	1.61	pass
Z024	6.3502	25.151	12.31	2.99	6.4570	3.2128	1.05	35%	1.62	pass
Z025	6.3495	25.112	12.32	2.99	6.4573	3.2128	1.05	35%	1.62	pass
Z026	6.3415	25.196	12.31	3.00	6.4583	3.2128	1.05	35%	1.61	pass
Z027	6.3492	25.233	12.31	3.00	6.4593	3.2138	1.05	35%	1.61	pass
Z028	6.3530	25.134	12.31	2.99	6.4587	3.2138	1.05	35%	1.62	pass
Z029	6.3447	25.093	12.30	2.98	6.4580	3.2128	1.05	35%	1.62	pass
Z030	6.3453	25.156	12.30	2.99	6.4574	3.2128	1.05	35%	1.62	pass
Z031	6.3499	25.134	12.30	2.99	6.4580	3.2128	1.05	35%	1.62	pass
Z032	6.3590	25.201	12.32	3.01	6.4588	3.2138	1.05	35%	1.61	pass
Z033	6.3267	25.093	12.31	2.99	6.4577	3.2128	1.05	35%	1.61	pass
Z034	6.3420	25.221	12.32	3.01	6.4579	3.2128	1.05	35%	1.60	pass
Z035	6.3611	25.303	12.31	3.01	6.4580	3.2128	1.05	35%	1.61	pass
Z036	6.3464	25.224	12.30	3.00	6.4575	3.2128	1.05	35%	1.61	pass
Z037	6.3399	25.134	12.31	2.99	6.4593	3.2138	1.05	35%	1.61	pass
Z038	6.3407	25.132	12.31	2.99	6.4592	3.2138	1.05	35%	1.61	pass
Z039	6.3449	25.185	12.32	3.00	6.4569	3.2128	1.05	35%	1.61	pass
Z040	6.3496	25.204	12.30	3.00	6.4572	3.2128	1.05	35%	1.61	pass

Comments

Particle weight from combined results of 2 independent measurements (W09010801 and W09011403).

Operator — Date: 4-17-09

QC Supervisor — Date: 7-6-09

QA Reviewer — Date: 12/8/09

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.004E-03
Average weight per overcoated particle (g):	2.018E-03
Average TRISO particle volume (cm3):	3.290E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z041	6.3464	25.121	12.31	2.99	6.4576	3.2128	1.05	35%	1.62	pass
Z042	6.3584	25.226	12.32	3.01	6.4564	3.2118	1.05	35%	1.61	pass
Z043	6.3437	25.063	12.31	2.98	6.4593	3.2138	1.05	35%	1.62	pass
Z044	6.3397	25.091	12.31	2.98	6.4595	3.2138	1.05	35%	1.62	pass
Z045	6.3478	25.163	12.31	3.00	6.4594	3.2138	1.05	35%	1.61	pass
Z046	6.3524	25.076	12.31	2.98	6.4577	3.2128	1.05	35%	1.63	pass
Z047	6.3480	25.205	12.32	3.00	6.4572	3.2128	1.05	35%	1.61	pass
Z048	6.3350	25.120	12.32	2.99	6.4583	3.2128	1.05	35%	1.61	pass
Z049	6.3393	25.245	12.31	3.01	6.4585	3.2128	1.05	35%	1.60	pass
Z050	6.3517	25.134	12.32	3.00	6.4590	3.2138	1.05	35%	1.61	pass
Z051	6.3400	25.201	12.31	3.00	6.4579	3.2128	1.05	35%	1.61	pass
Z052	6.3528	25.234	12.32	3.01	6.4574	3.2128	1.05	35%	1.61	pass
Z053	6.3563	25.273	12.31	3.01	6.4597	3.2138	1.05	35%	1.61	pass
Z054	6.3552	25.157	12.32	3.00	6.4580	3.2128	1.05	35%	1.61	pass
Z055	6.3535	25.062	12.32	2.99	6.4581	3.2128	1.05	35%	1.63	pass
Z056	6.3569	25.241	12.32	3.01	6.4589	3.2138	1.05	35%	1.61	pass
Z057	6.3532	25.242	12.31	3.00	6.4575	3.2128	1.05	35%	1.61	pass
Z058	6.3426	25.174	12.32	3.00	6.4591	3.2138	1.05	35%	1.61	pass
Z059	6.3389	25.030	12.31	2.98	6.4583	3.2128	1.05	35%	1.62	pass
Z060	6.3550	25.267	12.33	3.01	6.4583	3.2128	1.05	35%	1.60	pass
Z061	6.3425	25.336	12.33	3.02	6.4581	3.2128	1.05	35%	1.59	pass
Z062	6.3434	25.218	12.31	3.00	6.4575	3.2128	1.05	35%	1.61	pass
Z063	6.3432	25.095	12.32	2.99	6.4593	3.2138	1.05	35%	1.61	pass
Z064	6.3355	25.131	12.32	2.99	6.4579	3.2128	1.05	35%	1.61	pass
Z065	6.3456	25.288	12.32	3.02	6.4586	3.2128	1.05	35%	1.60	pass
Z066	6.3521	25.134	12.33	3.00	6.4591	3.2138	1.05	35%	1.61	pass
Z067	6.3400	25.212	12.32	3.01	6.4585	3.2128	1.05	35%	1.60	pass
Z068	6.3575	25.165	12.32	3.00	6.4587	3.2138	1.05	35%	1.62	pass
Z069	6.3450	25.214	12.32	3.01	6.4582	3.2128	1.05	35%	1.60	pass
Z070	6.3416	25.177	12.32	3.00	6.4572	3.2128	1.05	35%	1.61	pass
Z071	6.3573	25.215	12.32	3.01	6.4591	3.2138	1.05	35%	1.61	pass
Z072	6.3374	25.152	12.31	2.99	6.4590	3.2138	1.05	35%	1.61	pass
Z073	6.3604	25.246	12.32	3.01	6.4583	3.2128	1.05	35%	1.61	pass
Z074	6.3449	25.134	12.32	2.99	6.4570	3.2128	1.05	35%	1.61	pass
Z075	6.3514	25.234	12.32	3.01	6.4575	3.2128	1.05	35%	1.60	pass
Z076	6.3512	25.251	12.31	3.01	6.4581	3.2128	1.05	35%	1.61	pass
Z077	6.3576	25.143	12.32	3.00	6.4595	3.2138	1.05	35%	1.62	pass
Z078	6.3293	25.234	12.32	3.01	6.4592	3.2138	1.05	35%	1.60	pass
Z079	6.3491	25.315	12.32	3.02	6.4587	3.2138	1.05	35%	1.60	pass
Z080	6.3478	25.161	12.31	3.00	6.4597	3.2138	1.05	35%	1.61	pass

Comments

Operator	4-17-09 Date
QC Supervisor	7-6-09 Date
QA Reviewer	12/8/09 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.004E-03
Average weight per overcoated particle (g):	2.018E-03
Average TRISO particle volume (cm3):	3.290E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z081	6.3519	25.083	12.31	2.99	6.4591	3.2138	1.05	35%	1.62	pass
Z082	6.3452	25.078	12.31	2.99	6.4583	3.2128	1.05	35%	1.62	pass
Z083	6.3436	25.155	12.32	3.00	6.4588	3.2138	1.05	35%	1.61	pass
Z084	6.3638	25.219	12.32	3.01	6.4586	3.2128	1.05	35%	1.61	pass
Z085	6.3373	25.196	12.32	3.00	6.4583	3.2128	1.05	35%	1.60	pass
Z086	6.3558	25.219	12.32	3.01	6.4568	3.2128	1.05	35%	1.61	pass
Z087	6.3544	25.340	12.32	3.02	6.4593	3.2138	1.05	35%	1.59	pass
Z088	6.3484	25.236	12.31	3.01	6.4585	3.2128	1.05	35%	1.61	pass
Z089	6.3548	25.223	12.32	3.01	6.4599	3.2138	1.05	35%	1.61	pass
Z090	6.3432	25.181	12.31	3.00	6.4574	3.2128	1.05	35%	1.61	pass
Z091	6.3576	25.115	12.32	2.99	6.4570	3.2128	1.05	35%	1.62	pass
Z092	6.3390	25.147	12.31	2.99	6.4579	3.2128	1.05	35%	1.61	pass
Z093	6.3559	25.163	12.31	3.00	6.4586	3.2128	1.05	35%	1.62	pass
Z094	6.3409	25.135	12.31	2.99	6.4578	3.2128	1.05	35%	1.61	pass
Z095	6.3616	25.233	12.32	3.01	6.4593	3.2138	1.05	35%	1.61	pass
Z096	6.3530	25.252	12.31	3.01	6.4592	3.2138	1.05	35%	1.61	pass
Z097	6.3451	25.185	12.32	3.00	6.4579	3.2128	1.05	35%	1.61	pass
Z098	6.3492	25.195	12.32	3.00	6.4577	3.2128	1.05	35%	1.61	pass
Z099	6.3549	25.206	12.32	3.00	6.4586	3.2128	1.05	35%	1.61	pass
Z100	6.3409	25.142	12.32	3.00	6.4587	3.2138	1.05	35%	1.61	pass
Z101	6.3309	25.146	12.31	2.99	6.4582	3.2128	1.05	35%	1.61	pass
Z102	6.3570	25.336	12.32	3.02	6.4582	3.2128	1.05	35%	1.60	pass
Z103	6.3386	25.195	12.33	3.01	6.4579	3.2128	1.05	35%	1.60	pass
Z104	6.3266	25.077	12.31	2.98	6.4585	3.2128	1.05	35%	1.61	pass
Z105	6.3386	25.133	12.31	2.99	6.4593	3.2138	1.05	35%	1.61	pass
Z106	6.3277	25.184	12.31	3.00	6.4590	3.2138	1.05	35%	1.60	pass
Z107	6.3457	25.175	12.32	3.00	6.4576	3.2128	1.05	35%	1.61	pass
Z108	6.3570	25.151	12.32	3.00	6.4581	3.2128	1.05	35%	1.62	pass
Z109	6.3308	25.194	12.32	3.00	6.4574	3.2128	1.05	35%	1.60	pass
Z110	6.3430	25.032	12.32	2.98	6.4582	3.2128	1.05	35%	1.62	pass
Z111	6.3402	25.238	12.32	3.01	6.4587	3.2138	1.05	35%	1.60	pass
Z112	6.3430	25.217	12.31	3.00	6.4578	3.2128	1.05	35%	1.61	pass
Z113	6.3466	25.177	12.31	2.99	6.4580	3.2128	1.05	35%	1.61	pass
Z114	6.3289	25.142	12.31	2.99	6.4589	3.2138	1.05	35%	1.61	pass
Z115	6.3347	25.192	12.32	3.00	6.4571	3.2128	1.05	35%	1.60	pass
Z116	6.3665	25.278	12.32	3.02	6.4580	3.2128	1.05	35%	1.61	pass
Z117	6.3332	25.135	12.31	2.99	6.4581	3.2128	1.05	35%	1.61	pass
Z118	6.3454	25.228	12.31	3.00	6.4575	3.2128	1.05	35%	1.61	pass
Z119	6.3501	25.112	12.31	2.99	6.4579	3.2128	1.05	35%	1.62	pass
Z120	6.3380	25.298	12.31	3.01	6.4582	3.2128	1.05	35%	1.59	pass

Comments

Operator

4-17-09
Date

QC Supervisor

7-6-09
Date

QA Reviewer

12/8/09
Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Average weight per TRISO particle (g):	1.004E-03
Average weight per overcoated particle (g):	2.018E-03
Average TRISO particle volume (cm3):	3.290E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z121	6.3425	25.198	12.31	3.00	6.4584	3.2128	1.05	35%	1.61	pass
Z122	6.3314	25.212	12.31	3.00	6.4576	3.2128	1.05	35%	1.60	pass
Z123	6.3512	25.446	12.32	3.03	6.4595	3.2138	1.05	35%	1.58	pass
Z124	6.3547	25.223	12.32	3.00	6.4580	3.2128	1.05	35%	1.61	pass
Z125	6.3364	25.217	12.31	3.00	6.4587	3.2138	1.05	35%	1.60	pass
Z126	6.3511	25.236	12.32	3.01	6.4575	3.2128	1.05	35%	1.61	pass
Z127	6.3486	25.178	12.32	3.00	6.4594	3.2138	1.05	35%	1.61	pass
Z128	6.3375	25.133	12.32	2.99	6.4577	3.2128	1.05	35%	1.61	pass
Z129	6.3397	25.215	12.32	3.01	6.4589	3.2138	1.05	35%	1.60	pass
Z130	6.3357	25.034	12.31	2.98	6.4584	3.2128	1.05	35%	1.62	pass
Z131	6.3512	25.172	12.34	3.01	6.4579	3.2128	1.05	35%	1.61	pass
Z132	6.3389	25.270	12.33	3.01	6.4581	3.2128	1.05	35%	1.59	pass
Z133	6.3505	25.214	12.32	3.01	6.4592	3.2138	1.05	35%	1.61	pass
Z134	6.3431	25.280	12.33	3.02	6.4574	3.2128	1.05	35%	1.59	pass
Z135	6.3369	25.155	12.32	3.00	6.4574	3.2128	1.05	35%	1.61	pass
Z136	6.3447	25.146	12.32	3.00	6.4579	3.2128	1.05	35%	1.61	pass
Z137	6.3539	25.218	12.34	3.01	6.4581	3.2128	1.05	35%	1.60	pass
Z138	6.3414	25.121	12.31	2.99	6.4573	3.2128	1.05	35%	1.62	pass
Z139	6.3589	25.213	12.32	3.01	6.4583	3.2128	1.05	35%	1.61	pass
Z140	6.3557	25.312	12.32	3.02	6.4576	3.2128	1.05	35%	1.60	pass
Z141	6.3407	25.126	12.31	2.99	6.4583	3.2128	1.05	35%	1.62	pass
Z142	6.3375	25.115	12.32	3.00	6.4585	3.2128	1.05	35%	1.61	pass
Z143	6.3528	25.204	12.33	3.01	6.4589	3.2138	1.05	35%	1.60	pass
Z144	6.3520	25.088	12.32	2.99	6.4572	3.2128	1.05	35%	1.62	pass
Z145	6.3434	25.154	12.31	3.00	6.4593	3.2138	1.05	35%	1.61	pass
Z146	6.3450	25.091	12.31	2.99	6.4576	3.2128	1.05	35%	1.62	pass
Z147	6.3492	25.194	12.33	3.01	6.4579	3.2128	1.05	35%	1.60	pass
Z148	6.3374	25.323	12.32	3.02	6.4587	3.2138	1.05	35%	1.59	pass
Z149	6.3448	25.260	12.33	3.02	6.4588	3.2138	1.05	35%	1.60	pass
Z150	6.3491	25.203	12.33	3.01	6.4576	3.2128	1.05	35%	1.60	pass
Z151	6.3405	25.186	12.32	3.00	6.4579	3.2128	1.05	35%	1.60	pass
Z152	6.3460	25.215	12.32	3.00	6.4573	3.2128	1.05	35%	1.61	pass
Z153	6.3440	25.142	12.31	2.99	6.4589	3.2138	1.05	35%	1.61	pass
Z154	6.3476	25.161	12.30	2.99	6.4583	3.2128	1.05	35%	1.62	pass
Z155	6.3344	25.088	12.32	2.99	6.4583	3.2128	1.05	35%	1.61	pass
Z156										
Z157										
Z158										
Z159										
Z160										

Comments

Operator

4-17-09
Date

QC Supervisor

7-6-09
Date

QA Reviewer

12/8/09
Date

Data Report Form DRF-24C: Compact Tracking

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunber
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Compact Z Number	Compact G Number
Z001	G056
Z002	G049
Z003	G147
Z004	G156
Z005	G132
Z006	G087
Z007	G136
Z008	G152
Z009	G048
Z010	G118
Z011	G010
Z012	G054
Z013	G119
Z014	G021
Z015	G012
Z016	G047
Z017	G107
Z018	G170
Z019	G043
Z020	G130
Z021	G164
Z022	G091
Z023	G161
Z024	G064
Z025	G085
Z026	G101
Z027	G150
Z028	G109
Z029	G040
Z030	G105
Z031	G097
Z032	G090
Z033	G026
Z034	G066
Z035	G044
Z036	G163
Z037	G059
Z038	G079
Z039	G067
Z040	G179

Compact Z Number	Compact G Number
Z041	G102
Z042	G157
Z043	G100
Z044	G008
Z045	G074
Z046	G103
Z047	G138
Z048	G072
Z049	G020
Z050	G149
Z051	G032
Z052	G165
Z053	G131
Z054	G083
Z055	G098
Z056	G045
Z057	G177
Z058	G146
Z059	G029
Z060	G082
Z061	G057
Z062	G060
Z063	G080
Z064	G073
Z065	G038
Z066	G076
Z067	G144
Z068	G110
Z069	G070
Z070	G078
Z071	G086
Z072	G116
Z073	G111
Z074	G051
Z075	G180
Z076	G151
Z077	G046
Z078	G031
Z079	G127
Z080	G171

Compact Z Number	Compact G Number
Z081	G104
Z082	G094
Z083	G142
Z084	G167
Z085	G115
Z086	G129
Z087	G068
Z088	G137
Z089	G140
Z090	G134
Z091	G112
Z092	G124
Z093	G106
Z094	G113
Z095	G172
Z096	G153
Z097	G071
Z098	G162
Z099	G108
Z100	G077
Z101	G033
Z102	G052
Z103	G154
Z104	G023
Z105	G037
Z106	G019
Z107	G143
Z108	G159
Z109	G025
Z110	G093
Z111	G022
Z112	G009
Z113	G062
Z114	G121
Z115	G141
Z116	G174
Z117	G122
Z118	G158
Z119	G095
Z120	G024

Compact Z Number	Compact G Number
Z121	G042
Z122	G035
Z123	G041
Z124	G173
Z125	G034
Z126	G039
Z127	G148
Z128	G123
Z129	G028
Z130	G013
Z131	G084
Z132	G099
Z133	G061
Z134	G128
Z135	G120
Z136	G178
Z137	G135
Z138	G063
Z139	G175
Z140	G053
Z141	G117
Z142	G155
Z143	G145
Z144	G092
Z145	G069
Z146	G050
Z147	G075
Z148	G125
Z149	G058
Z150	G176
Z151	G114
Z152	G166
Z153	G081
Z154	G160
Z155	G036
Z156	
Z157	
Z158	
Z159	
Z160	

Comments

Operator

4-15-09

Date

Data Report Form DRF-24D: Compact Charge Weight

Procedure:	AGR-CHAR-DAM-24 Rev. 6
Operator:	Ivan Dunbar
Compact lot ID:	LEU07-OP1-Z
Compact Lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU07-OP1_DRF24R6.xls

Analytical balance calibration due date:	10/29/09

Target compact charge weight (g):	6.4580
Allowable tolerance in compact charge weight (g):	0.0020
Average weight per overcoated particle (g):	2.018E-03
Approximate number of particles per compact:	3200
Average uranium loading per particle (g):	3.930E-04
Approximate uranium loading per compact (g):	1.258

Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)
G001	6.4587	G046	6.4595	G091	6.4594	G136	6.4582
G002	6.4581	G047	6.4583	G092	6.4572	G137	6.4585
G003	6.4573	G048	6.4583	G093	6.4582	G138	6.4572
G004	6.4591	G049	6.4584	G094	6.4583	G139	6.4561
G005	6.4570	G050	6.4576	G095	6.4579	G140	6.4599
G006	6.4587	G051	6.4570	G096	6.4585	G141	6.4571
G007	6.4567	G052	6.4582	G097	6.4580	G142	6.4588
G008	6.4595	G053	6.4576	G098	6.4581	G143	6.4576
G009	6.4578	G054	6.4587	G099	6.4581	G144	6.4585
G010	6.4575	G055	6.4594	G100	6.4593	G145	6.4589
G011	6.4580	G056	6.4589	G101	6.4583	G146	6.4591
G012	6.4568	G057	6.4581	G102	6.4576	G147	6.4589
G013	6.4584	G058	6.4588	G103	6.4577	G148	6.4594
G014	6.4584	G059	6.4593	G104	6.4591	G149	6.4590
G015	6.4583	G060	6.4575	G105	6.4574	G150	6.4593
G016	6.4582	G061	6.4592	G106	6.4586	G151	6.4581
G017	6.4585	G062	6.4580	G107	6.4592	G152	6.4585
G018	6.4582	G063	6.4573	G108	6.4586	G153	6.4592
G019	6.4590	G064	6.4570	G109	6.4587	G154	6.4579
G020	6.4585	G065	6.4572	G110	6.4587	G155	6.4585
G021	6.4586	G066	6.4579	G111	6.4583	G156	6.4582
G022	6.4587	G067	6.4569	G112	6.4570	G157	6.4564
G023	6.4585	G068	6.4593	G113	6.4578	G158	6.4575
G024	6.4582	G069	6.4593	G114	6.4579	G159	6.4581
G025	6.4574	G070	6.4582	G115	6.4583	G160	6.4583
G026	6.4577	G071	6.4579	G116	6.4590	G161	6.4568
G027	6.4580	G072	6.4583	G117	6.4583	G162	6.4577
G028	6.4589	G073	6.4579	G118	6.4596	G163	6.4575
G029	6.4583	G074	6.4594	G119	6.4572	G164	6.4569
G030	6.4579	G075	6.4579	G120	6.4574	G165	6.4574
G031	6.4592	G076	6.4591	G121	6.4589	G166	6.4573
G032	6.4579	G077	6.4587	G122	6.4581	G167	6.4586
G033	6.4582	G078	6.4572	G123	6.4577	G168	6.4577
G034	6.4587	G079	6.4592	G124	6.4579	G169	6.4584
G035	6.4576	G080	6.4593	G125	6.4587	G170	6.4568
G036	6.4583	G081	6.4589	G126	6.4582	G171	6.4597
G037	6.4593	G082	6.4583	G127	6.4587	G172	6.4593
G038	6.4586	G083	6.4580	G128	6.4574	G173	6.4580
G039	6.4575	G084	6.4579	G129	6.4568	G174	6.4580
G040	6.4580	G085	6.4573	G130	6.4575	G175	6.4583
G041	6.4595	G086	6.4591	G131	6.4597	G176	6.4576
G042	6.4584	G087	6.4587	G132	6.4576	G177	6.4575
G043	6.4592	G088	6.4592	G133	6.4577	G178	6.4579
G044	6.4580	G089	6.4590	G134	6.4574	G179	6.4572
G045	6.4589	G090	6.4588	G135	6.4581	G180	6.4575

Comments

Operator	Date
	4-1-09

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10 & 10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z001	25.112	12.29	12.29	12.30	12.30	12.30	12.30	Y	6.2884	pass
Z002	25.165	12.30	12.30	12.30	12.30	12.30	12.29	Y	6.2801	pass
Z003	25.128	12.30	12.29	12.30	12.30	12.30	12.29	Y	6.2926	pass
Z004	25.163	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2962	pass
Z005	25.144	12.29	12.30	12.30	12.30	12.30	12.30	Y	6.2944	pass
Z006	25.158	12.30	12.29	12.30	12.30	12.30	12.29	Y	6.2859	pass
Z007	25.140	12.29	12.29	12.30	12.30	12.30	12.30	Y	6.2972	pass
Z008	25.140	12.30	12.30	12.31	12.30	12.30	12.30	Y	6.2906	pass
Z009	25.148	12.30	12.30	12.30	12.30	12.29	12.29	Y	6.2843	pass
Z010	25.145	12.31	12.30	12.31	12.31	12.28	12.27	Y	6.2954	pass
Z011	25.111	12.28	12.27	12.28	12.29	12.27	12.27	Y	6.2927	pass
Z012	25.195	12.29	12.28	12.30	12.29	12.29	12.28	Y	6.3256	pass
Z013	25.135	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2937	pass
Z014	25.114	12.28	12.27	12.29	12.29	12.29	12.28	Y	6.2818	pass
Z015	25.133	12.27	12.28	12.29	12.29	12.28	12.28	Y	6.2821	pass
Z016	25.123	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2895	pass
Z017	25.143	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2825	pass
Z018	25.166	12.28	12.28	12.30	12.29	12.29	12.28	Y	6.2944	pass
Z019	25.206	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3703	pass
Z020	25.179	12.29	12.29	12.29	12.30	12.29	12.29	Y	6.3122	pass
Z021	25.174	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.3196	pass
Z022	25.137	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2945	pass
Z023	25.208	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3142	pass
Z024	25.140	12.28	12.29	12.29	12.29	12.29	12.28	Y	6.2978	pass
Z025	25.124	12.29	12.28	12.29	12.29	12.28	12.28	Y	6.2831	pass
Z026	25.132	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2969	pass
Z027	25.177	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3065	pass
Z028	25.135	12.28	12.27	12.29	12.29	12.29	12.28	Y	6.2847	pass
Z029	25.146	12.29	12.28	12.30	12.30	12.29	12.29	Y	6.2950	pass
Z030	25.135	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2958	pass
Z031	25.153	12.29	12.28	12.30	12.29	12.29	12.28	Y	6.2932	pass
Z032	25.132	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2865	pass
Z033	25.139	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.3031	pass
Z034	25.156	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2925	pass
Z035	25.116	12.29	12.28	12.28	12.29	12.28	12.28	Y	6.2888	pass
Z036	25.130	12.29	12.28	12.29	12.29	12.29	12.29	Y	6.3030	pass
Z037	25.126	12.28	12.29	12.29	12.29	12.29	12.29	Y	6.2938	pass
Z038	25.182	12.29	12.29	12.31	12.30	12.29	12.29	Y	6.2924	pass
Z039	25.184	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.3034	pass
Z040	25.130	12.28	12.28	12.29	12.30	12.29	12.28	Y	6.2865	pass
Z041	25.139	12.28	12.28	12.29	12.29	12.29	12.28	Y	6.3100	pass
Z042	25.153	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2984	pass
Z043	25.135	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.3041	pass
Z044	25.153	12.29	12.29	12.30	12.29	12.29	12.29	Y	6.3066	pass
Z045	25.184	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2984	pass
Z046	25.195	12.30	12.30	12.31	12.31	12.30	12.30	Y	6.3090	pass
Z047	25.133	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2930	pass
Z048	25.118	12.28	12.28	12.29	12.30	12.29	12.29	Y	6.2979	pass
Z049	25.133	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2787	pass
Z050	25.147	12.28	12.28	12.29	12.28	12.29	12.28	Y	6.2935	pass

Comments

Operator — 7-17-09 Date

QC Supervisor — 1-11-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10 & 10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z051	25.111	12.29	12.28	12.29	12.30	12.29	12.28	Y	6.3002	pass
Z052	25.171	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3182	pass
Z053	25.109	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2827	pass
Z054	25.146	12.28	12.29	12.29	12.29	12.29	12.29	Y	6.3061	pass
Z055	25.140	12.29	12.28	12.29	12.29	12.29	12.28	Y	6.2937	pass
Z056	25.137	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.3073	pass
Z057	25.179	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2933	pass
Z058	25.128	12.28	12.29	12.29	12.29	12.28	12.28	Y	6.2825	pass
Z059	25.146	12.28	12.28	12.29	12.29	12.29	12.28	Y	6.2939	pass
Z060	25.158	12.29	12.28	12.29	12.30	12.28	12.28	Y	6.2949	pass
Z061	25.161	12.29	12.29	12.30	12.29	12.29	12.28	Y	6.2958	pass
Z062	25.146	12.28	12.29	12.29	12.30	12.28	12.28	Y	6.2811	pass
Z063	25.135	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2910	pass
Z064	25.142	12.28	12.29	12.29	12.29	12.29	12.29	Y	6.3014	pass
Z065	25.134	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2900	pass
Z066	25.132	12.29	12.29	12.29	12.30	12.29	12.28	Y	6.2968	pass
Z067	25.154	12.29	12.29	12.30	12.30	12.28	12.28	Y	6.2931	pass
Z068	25.156	12.29	12.29	12.30	12.30	12.29	12.28	Y	6.3137	pass
Z069	25.187	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3230	pass
Z070	25.135	12.28	12.28	12.30	12.29	12.28	12.28	Y	6.2840	pass
Z071	25.139	12.28	12.27	12.29	12.29	12.28	12.28	Y	6.3029	pass
Z072	25.149	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.3009	pass
Z073	25.134	12.28	12.28	12.29	12.29	12.29	12.30	Y	6.2941	pass
Z074	25.151	12.28	12.29	12.29	12.29	12.28	12.28	Y	6.3016	pass
Z075	25.154	12.28	12.28	12.30	12.30	12.29	12.29	Y	6.3041	pass
Z076	25.154	12.30	12.29	12.30	12.30	12.29	12.29	Y	6.3005	pass
Z077	25.130	12.28	12.28	12.29	12.29	12.29	12.28	Y	6.2961	pass
Z078	25.153	12.29	12.28	12.30	12.30	12.29	12.29	Y	6.2966	pass
Z079	25.142	12.29	12.29	12.30	12.29	12.29	12.28	Y	6.3000	pass
Z080	25.146	12.29	12.28	12.29	12.29	12.29	12.29	Y	6.2773	pass
Z081	25.149	12.29	12.29	12.29	12.30	12.28	12.28	Y	6.3018	pass
Z082	25.140	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2970	pass
Z083	25.144	12.28	12.29	12.30	12.30	12.28	12.28	Y	6.3064	pass
Z084	25.145	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2906	pass
Z085	25.149	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2757	pass
Z086	25.167	12.29	12.29	12.30	12.29	12.28	12.29	Y	6.3034	pass
Z087	25.134	12.29	12.28	12.29	12.29	12.29	12.28	Y	6.2944	pass
Z088	25.142	12.28	12.28	12.30	12.30	12.29	12.29	Y	6.3006	pass
Z089	25.172	12.29	12.29	12.30	12.31	12.29	12.29	Y	6.3115	pass
Z090	25.142	12.29	12.29	12.30	12.29	12.28	12.28	Y	6.2800	pass
Z091	25.125	12.29	12.28	12.29	12.30	12.28	12.28	Y	6.2869	pass
Z092	25.151	12.29	12.29	12.29	12.30	12.29	12.28	Y	6.3015	pass
Z093	25.133	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2954	pass
Z094	25.134	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.2980	pass
Z095	25.133	12.28	12.28	12.28	12.28	12.27	12.27	Y	6.2926	pass
Z096	25.187	12.29	12.30	12.30	12.30	12.30	12.30	Y	6.3214	pass
Z097	25.128	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.3053	pass
Z098	25.135	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.2893	pass
Z099	25.063	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2882	pass
Z100	25.146	12.28	12.28	12.30	12.29	12.28	12.29	Y	6.2957	pass

Comments

Operator	7-17-09 Date
QC Supervisor	1-11-10 Date
QA Reviewer	2/03/10 Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10 & 10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z101	25.129	12.29	12.29	12.30	12.30	12.29	12.28	Y	6.3040	pass
Z102	25.125	12.28	12.28	12.30	12.30	12.29	12.28	Y	6.2944	pass
Z103	25.149	12.28	12.29	12.28	12.28	12.28	12.28	Y	6.2859	pass
Z104	25.153	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.3137	pass
Z105	25.115	12.29	12.29	12.30	12.30	12.28	12.28	Y	6.2989	pass
Z106	25.120	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2897	pass
Z107	25.151	12.29	12.29	12.29	12.29	12.29	12.28	Y	6.2884	pass
Z108	25.024	12.28	12.27	12.28	12.29	12.27	12.28	Y	6.2840	pass
Z109	25.152	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2941	pass
Z110	25.151	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2837	pass
Z111	25.152	12.29	12.28	12.29	12.29	12.28	12.28	Y	6.2904	pass
Z112	25.134	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2922	pass
Z113	25.114	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2861	pass
Z114	25.130	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2934	pass
Z115	25.132	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2832	pass
Z116	25.142	12.29	12.28	12.29	12.29	12.28	12.29	Y	6.2870	pass
Z117	25.148	12.29	12.29	12.29	12.29	12.28	12.29	Y	6.3025	pass
Z118	25.151	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.2928	pass
Z119	25.158	12.28	12.28	12.30	12.30	12.29	12.29	Y	6.2985	pass
Z120	25.120	12.29	12.29	12.30	12.30	12.28	12.29	Y	6.3053	pass
Z121	25.135	12.29	12.28	12.29	12.29	12.29	12.28	Y	6.2959	pass
Z122	25.130	12.28	12.28	12.30	12.29	12.28	12.28	Y	6.2843	pass
Z123	25.151	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2986	pass
Z124	25.130	12.29	12.29	12.29	12.29	12.28	12.28	Y	6.2830	pass
Z125	25.139	12.29	12.28	12.29	12.30	12.28	12.29	Y	6.3026	pass
Z126	25.134	12.28	12.28	12.30	12.30	12.28	12.29	Y	6.2944	pass
Z127	25.142	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.2828	pass
Z128	25.140	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2886	pass
Z129	25.139	12.28	12.28	12.30	12.30	12.29	12.29	Y	6.2837	pass
Z130	25.132	12.29	12.29	12.30	12.30	12.29	12.29	Y	6.2855	pass
Z131	25.142	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2804	pass
Z132	25.217	12.28	12.28	12.30	12.29	12.27	12.28	Y	6.3422	pass
Z133	25.133	12.29	12.28	12.29	12.29	12.29	12.28	Y	6.2959	pass
Z134	25.147	12.29	12.29	12.30	12.30	12.29	12.28	Y	6.2983	pass
Z135	25.133	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2972	pass
Z136	25.140	12.29	12.28	12.29	12.29	12.28	12.29	Y	6.2922	pass
Z137	25.144	12.29	12.28	12.29	12.30	12.28	12.28	Y	6.2877	pass
Z138	25.177	12.29	12.29	12.30	12.30	12.29	12.28	Y	6.3043	pass
Z139	25.112	12.28	12.27	12.29	12.29	12.28	12.28	Y	6.2862	pass
Z140	25.161	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2964	pass
Z141	25.132	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2819	pass
Z142	25.114	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.2926	pass
Z143	25.148	12.29	12.29	12.29	12.28	12.28	12.28	Y	6.2894	pass
Z144	25.156	12.28	12.28	12.29	12.29	12.28	12.27	Y	6.2958	pass
Z145	25.134	12.28	12.29	12.29	12.29	12.28	12.28	Y	6.2905	pass
Z146	25.163	12.29	12.28	12.30	12.29	12.28	12.29	Y	6.3008	pass
Z147	25.158	12.29	12.29	12.30	12.30	12.28	12.28	Y	6.3024	pass
Z148	25.142	12.28	12.28	12.29	12.30	12.28	12.29	Y	6.2992	pass
Z149	25.115	12.28	12.28	12.29	12.30	12.28	12.28	Y	6.2842	pass
Z150	25.148	12.29	12.28	12.30	12.30	12.29	12.28	Y	6.2950	pass

Comments

Operator — 7-17-09 Date

QC Supervisor — 1-11-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10 & 10/29/09

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z151	25.156	12.29	12.28	12.29	12.29	12.28	12.28	Y	6.2941	pass
Z152	25.140	12.28	12.28	12.30	12.30	12.28	12.29	Y	6.3043	pass
Z153	25.173	12.28	12.28	12.29	12.29	12.29	12.29	Y	6.2956	pass
Z154	25.146	12.29	12.28	12.29	12.29	12.28	12.28	Y	6.2861	pass
Z155	25.125	12.29	12.29	12.29	12.29	12.29	12.29	Y	6.2828	pass
Z156	25.156	12.29	12.29	12.29	12.29	12.29	12.28	Y	6.3057	pass
Z157	25.152	12.28	12.28	12.30	12.29	12.29	12.29	Y	6.3038	pass
Z158	25.133	12.28	12.28	12.29	12.28	12.28	12.28	Y	6.2780	pass
Z159	25.132	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.3027	pass
Z160	25.060	12.28	12.28	12.29	12.29	12.28	12.28	Y	6.2813	pass
Z161	25.140	12.28	12.28	12.29	12.29	12.29	12.28	Y	6.2758	pass
Z162	25.125	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2839	pass
Z163	25.142	12.28	12.28	12.29	12.29	12.28	12.29	Y	6.2985	pass
Z164	25.048	12.28	12.28	12.30	12.30	12.28	12.28	Y	6.2829	pass
Z165	25.116	12.28	12.28	12.28	12.28	12.28	12.28	Y	6.2897	pass
Z166	25.161	12.29	12.29	12.30	12.30	12.28	12.28	Y	6.2864	pass
Z167	25.168	12.29	12.28	12.29	12.29	12.28	12.28	Y	6.2828	pass
Z168										
Z169										
Z170										
Z171										
Z172										
Z173										
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Z196										
Z197										
Z198										
Z199										
Z200										

Comments

Operator — 7-17-09 — Date

QC Supervisor — 1-11-10 — Date

QA Reviewer — 2/03/10 — Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.032E-03
Average weight per overcoated particle (g):	2.010E-03
Average TRISO particle volume (cm3):	3.430E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z001	6.2884	25.112	12.30	2.98	6.4327	3.3024	1.10	37%	1.58	pass
Z002	6.2801	25.165	12.30	2.99	6.4306	3.3014	1.10	37%	1.57	pass
Z003	6.2926	25.128	12.30	2.98	6.4303	3.3014	1.10	37%	1.59	pass
Z004	6.2962	25.163	12.29	2.99	6.4318	3.3024	1.10	37%	1.58	pass
Z005	6.2944	25.144	12.30	2.99	6.4309	3.3014	1.10	37%	1.58	pass
Z006	6.2859	25.158	12.30	2.99	6.4313	3.3024	1.10	37%	1.58	pass
Z007	6.2972	25.140	12.30	2.99	6.4311	3.3024	1.10	37%	1.59	pass
Z008	6.2906	25.140	12.30	2.99	6.4318	3.3024	1.10	37%	1.58	pass
Z009	6.2843	25.148	12.30	2.99	6.4326	3.3024	1.10	37%	1.58	pass
Z010	6.2954	25.145	12.30	2.99	6.4322	3.3024	1.10	37%	1.58	pass
Z011	6.2927	25.111	12.28	2.97	6.4307	3.3014	1.10	37%	1.60	pass
Z012	6.3256	25.195	12.29	2.99	6.4329	3.3024	1.10	37%	1.60	pass
Z013	6.2937	25.135	12.29	2.98	6.4313	3.3024	1.10	37%	1.59	pass
Z014	6.2818	25.114	12.28	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z015	6.2821	25.133	12.28	2.98	6.4325	3.3024	1.10	37%	1.59	pass
Z016	6.2895	25.123	12.28	2.98	6.4315	3.3024	1.10	37%	1.59	pass
Z017	6.2825	25.143	12.28	2.98	6.4322	3.3024	1.10	37%	1.58	pass
Z018	6.2944	25.166	12.29	2.98	6.4329	3.3024	1.10	37%	1.59	pass
Z019	6.3703	25.206	12.29	2.99	6.4325	3.3024	1.10	37%	1.62	pass
Z020	6.3122	25.179	12.29	2.99	6.4312	3.3024	1.10	37%	1.59	pass
Z021	6.3196	25.174	12.29	2.99	6.4323	3.3024	1.10	37%	1.60	pass
Z022	6.2945	25.137	12.28	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z023	6.3142	25.208	12.29	2.99	6.4314	3.3024	1.10	37%	1.59	pass
Z024	6.2978	25.140	12.29	2.98	6.4302	3.3014	1.10	37%	1.59	pass
Z025	6.2831	25.124	12.29	2.98	6.4302	3.3014	1.10	37%	1.59	pass
Z026	6.2969	25.132	12.28	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z027	6.3065	25.177	12.29	2.99	6.4320	3.3024	1.10	37%	1.59	pass
Z028	6.2847	25.135	12.28	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z029	6.2950	25.146	12.29	2.98	6.4328	3.3024	1.10	37%	1.59	pass
Z030	6.2958	25.135	12.28	2.98	6.4304	3.3014	1.10	37%	1.59	pass
Z031	6.2932	25.153	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z032	6.2865	25.132	12.29	2.98	6.4308	3.3014	1.10	37%	1.59	pass
Z033	6.3031	25.139	12.29	2.98	6.4326	3.3024	1.10	37%	1.59	pass
Z034	6.2925	25.156	12.29	2.98	6.4325	3.3024	1.10	37%	1.59	pass
Z035	6.2888	25.116	12.28	2.98	6.4310	3.3024	1.10	37%	1.59	pass
Z036	6.3030	25.130	12.29	2.98	6.4326	3.3024	1.10	37%	1.59	pass
Z037	6.2938	25.126	12.29	2.98	6.4309	3.3014	1.10	37%	1.59	pass
Z038	6.2924	25.182	12.30	2.99	6.4326	3.3024	1.10	37%	1.58	pass
Z039	6.3034	25.184	12.29	2.99	6.4310	3.3024	1.10	37%	1.59	pass
Z040	6.2865	25.130	12.29	2.98	6.4327	3.3024	1.10	37%	1.59	pass
Z041	6.3100	25.139	12.29	2.98	6.4304	3.3014	1.10	37%	1.60	pass
Z042	6.2984	25.153	12.28	2.98	6.4329	3.3024	1.10	37%	1.59	pass
Z043	6.3041	25.135	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z044	6.3066	25.153	12.29	2.98	6.4309	3.3014	1.10	37%	1.59	pass
Z045	6.2984	25.184	12.28	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z046	6.3090	25.195	12.30	3.00	6.4311	3.3024	1.10	37%	1.58	pass
Z047	6.2930	25.133	12.29	2.98	6.4316	3.3024	1.10	37%	1.59	pass
Z048	6.2979	25.118	12.29	2.98	6.4306	3.3014	1.10	37%	1.59	pass
Z049	6.2787	25.133	12.28	2.98	6.4333	3.3034	1.10	37%	1.58	pass
Z050	6.2935	25.147	12.28	2.98	6.4318	3.3024	1.10	37%	1.59	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09060801 and W09060802).

Operator — 7-17-09 Date

QC Supervisor — 1-11-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.032E-03
Average weight per overcoated particle (g):	2.010E-03
Average TRISO particle volume (cm3):	3.430E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z051	6.3002	25.111	12.29	2.98	6.4303	3.3014	1.10	37%	1.59	pass
Z052	6.3182	25.171	12.29	2.99	6.4315	3.3024	1.10	37%	1.60	pass
Z053	6.2827	25.109	12.28	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z054	6.3061	25.146	12.29	2.98	6.4316	3.3024	1.10	37%	1.59	pass
Z055	6.2937	25.140	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z056	6.3073	25.137	12.28	2.98	6.4316	3.3024	1.10	37%	1.60	pass
Z057	6.2933	25.179	12.29	2.99	6.4309	3.3014	1.10	37%	1.58	pass
Z058	6.2825	25.128	12.29	2.98	6.4295	3.3014	1.10	37%	1.58	pass
Z059	6.2939	25.146	12.29	2.98	6.4307	3.3014	1.10	37%	1.59	pass
Z060	6.2949	25.158	12.29	2.98	6.4308	3.3014	1.10	37%	1.59	pass
Z061	6.2958	25.161	12.29	2.98	6.4323	3.3024	1.10	37%	1.59	pass
Z062	6.2811	25.146	12.29	2.98	6.4306	3.3014	1.10	37%	1.58	pass
Z063	6.2910	25.135	12.28	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z064	6.3014	25.142	12.29	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z065	6.2900	25.134	12.28	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z066	6.2968	25.132	12.29	2.98	6.4300	3.3014	1.10	37%	1.59	pass
Z067	6.2931	25.154	12.29	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z068	6.3137	25.156	12.29	2.99	6.4325	3.3024	1.10	37%	1.60	pass
Z069	6.3230	25.187	12.29	2.99	6.4325	3.3024	1.10	37%	1.60	pass
Z070	6.2840	25.135	12.29	2.98	6.4324	3.3024	1.10	37%	1.58	pass
Z071	6.3029	25.139	12.28	2.98	6.4326	3.3024	1.10	37%	1.60	pass
Z072	6.3009	25.149	12.29	2.98	6.4323	3.3024	1.10	37%	1.59	pass
Z073	6.2941	25.134	12.29	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z074	6.3016	25.151	12.29	2.98	6.4308	3.3014	1.10	37%	1.59	pass
Z075	6.3041	25.154	12.29	2.98	6.4309	3.3014	1.10	37%	1.59	pass
Z076	6.3005	25.154	12.30	2.99	6.4331	3.3034	1.10	37%	1.59	pass
Z077	6.2961	25.130	12.29	2.98	6.4319	3.3024	1.10	37%	1.59	pass
Z078	6.2966	25.153	12.29	2.98	6.4323	3.3024	1.10	37%	1.59	pass
Z079	6.3000	25.142	12.29	2.98	6.4323	3.3024	1.10	37%	1.59	pass
Z080	6.2773	25.146	12.29	2.98	6.4322	3.3024	1.10	37%	1.58	pass
Z081	6.3018	25.149	12.29	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z082	6.2970	25.140	12.28	2.98	6.4313	3.3024	1.10	37%	1.59	pass
Z083	6.3064	25.144	12.29	2.98	6.4302	3.3014	1.10	37%	1.59	pass
Z084	6.2906	25.145	12.29	2.98	6.4325	3.3024	1.10	37%	1.59	pass
Z085	6.2757	25.149	12.28	2.98	6.4303	3.3014	1.10	37%	1.58	pass
Z086	6.3034	25.167	12.29	2.99	6.4322	3.3024	1.10	37%	1.59	pass
Z087	6.2944	25.134	12.29	2.98	6.4328	3.3024	1.10	37%	1.59	pass
Z088	6.3006	25.142	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z089	6.3115	25.172	12.30	2.99	6.4304	3.3014	1.10	37%	1.59	pass
Z090	6.2800	25.142	12.29	2.98	6.4321	3.3024	1.10	37%	1.58	pass
Z091	6.2869	25.125	12.29	2.98	6.4302	3.3014	1.10	37%	1.59	pass
Z092	6.3015	25.151	12.29	2.98	6.4317	3.3024	1.10	37%	1.59	pass
Z093	6.2954	25.133	12.29	2.98	6.4310	3.3024	1.10	37%	1.59	pass
Z094	6.2980	25.134	12.29	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z095	6.2926	25.133	12.28	2.98	6.4306	3.3014	1.10	37%	1.59	pass
Z096	6.3214	25.187	12.30	2.99	6.4322	3.3024	1.10	37%	1.59	pass
Z097	6.3053	25.128	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z098	6.2893	25.135	12.29	2.98	6.4316	3.3024	1.10	37%	1.59	pass
Z099	6.2882	25.063	12.28	2.97	6.4321	3.3024	1.10	37%	1.59	pass
Z100	6.2957	25.146	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09060801 and W09060802).

Operator — 7-17-09 Date

QC Supervisor — 1-11-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.032E-03
Average weight per overcoated particle (g):	2.010E-03
Average TRISO particle volume (cm3):	3.430E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z101	6.3040	25.129	12.29	2.98	6.4327	3.3024	1.10	37%	1.59	pass
Z102	6.2944	25.125	12.29	2.98	6.4319	3.3024	1.10	37%	1.59	pass
Z103	6.2859	25.149	12.28	2.98	6.4306	3.3014	1.10	37%	1.59	pass
Z104	6.3137	25.153	12.28	2.98	6.4327	3.3024	1.10	37%	1.60	pass
Z105	6.2989	25.115	12.29	2.98	6.4313	3.3024	1.10	37%	1.59	pass
Z106	6.2897	25.120	12.28	2.98	6.4314	3.3024	1.10	37%	1.59	pass
Z107	6.2884	25.151	12.29	2.98	6.4299	3.3014	1.10	37%	1.58	pass
Z108	6.2840	25.024	12.28	2.96	6.4299	3.3014	1.10	37%	1.60	pass
Z109	6.2941	25.152	12.29	2.98	6.4329	3.3024	1.10	37%	1.59	pass
Z110	6.2837	25.151	12.28	2.98	6.4321	3.3024	1.10	37%	1.58	pass
Z111	6.2904	25.152	12.29	2.98	6.4322	3.3024	1.10	37%	1.59	pass
Z112	6.2922	25.134	12.29	2.98	6.4319	3.3024	1.10	37%	1.59	pass
Z113	6.2861	25.114	12.29	2.98	6.4303	3.3014	1.10	37%	1.59	pass
Z114	6.2934	25.130	12.29	2.98	6.4311	3.3024	1.10	37%	1.59	pass
Z115	6.2832	25.132	12.28	2.98	6.4310	3.3024	1.10	37%	1.59	pass
Z116	6.2870	25.142	12.29	2.98	6.4303	3.3014	1.10	37%	1.58	pass
Z117	6.3025	25.148	12.29	2.98	6.4308	3.3014	1.10	37%	1.59	pass
Z118	6.2928	25.151	12.29	2.98	6.4313	3.3024	1.10	37%	1.59	pass
Z119	6.2985	25.158	12.29	2.98	6.4313	3.3024	1.10	37%	1.59	pass
Z120	6.3053	25.120	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z121	6.2959	25.135	12.29	2.98	6.4308	3.3014	1.10	37%	1.59	pass
Z122	6.2843	25.130	12.29	2.98	6.4309	3.3014	1.10	37%	1.59	pass
Z123	6.2986	25.151	12.29	2.98	6.4329	3.3024	1.10	37%	1.59	pass
Z124	6.2830	25.130	12.29	2.98	6.4319	3.3024	1.10	37%	1.58	pass
Z125	6.3026	25.139	12.29	2.98	6.4306	3.3014	1.10	37%	1.59	pass
Z126	6.2944	25.134	12.29	2.98	6.4309	3.3014	1.10	37%	1.59	pass
Z127	6.2828	25.142	12.29	2.98	6.4327	3.3024	1.10	37%	1.58	pass
Z128	6.2886	25.140	12.29	2.98	6.4315	3.3024	1.10	37%	1.59	pass
Z129	6.2837	25.139	12.29	2.98	6.4321	3.3024	1.10	37%	1.58	pass
Z130	6.2855	25.132	12.29	2.98	6.4322	3.3024	1.10	37%	1.58	pass
Z131	6.2804	25.142	12.28	2.98	6.4323	3.3024	1.10	37%	1.58	pass
Z132	6.3422	25.217	12.28	2.99	6.4330	3.3024	1.10	37%	1.61	pass
Z133	6.2959	25.133	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z134	6.2983	25.147	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z135	6.2972	25.133	12.28	2.98	6.4319	3.3024	1.10	37%	1.59	pass
Z136	6.2922	25.140	12.29	2.98	6.4304	3.3014	1.10	37%	1.59	pass
Z137	6.2877	25.144	12.29	2.98	6.4325	3.3024	1.10	37%	1.58	pass
Z138	6.3043	25.177	12.29	2.99	6.4316	3.3024	1.10	37%	1.59	pass
Z139	6.2862	25.112	12.28	2.97	6.4312	3.3024	1.10	37%	1.59	pass
Z140	6.2964	25.161	12.29	2.98	6.4318	3.3024	1.10	37%	1.59	pass
Z141	6.2819	25.132	12.28	2.98	6.4330	3.3024	1.10	37%	1.58	pass
Z142	6.2926	25.114	12.29	2.98	6.4329	3.3024	1.10	37%	1.59	pass
Z143	6.2894	25.148	12.29	2.98	6.4317	3.3024	1.10	37%	1.59	pass
Z144	6.2958	25.156	12.28	2.98	6.4326	3.3024	1.10	37%	1.59	pass
Z145	6.2905	25.134	12.29	2.98	6.4315	3.3024	1.10	37%	1.59	pass
Z146	6.3008	25.163	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z147	6.3024	25.158	12.29	2.98	6.4322	3.3024	1.10	37%	1.59	pass
Z148	6.2992	25.142	12.29	2.98	6.4320	3.3024	1.10	37%	1.59	pass
Z149	6.2842	25.115	12.29	2.98	6.4305	3.3014	1.10	37%	1.59	pass
Z150	6.2950	25.148	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09060801 and W09060802).

Operator — 7-17-09 Date

QC Supervisor — 1-11-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.032E-03
Average weight per overcoated particle (g):	2.010E-03
Average TRISO particle volume (cm3):	3.430E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z151	6.2941	25.156	12.29	2.98	6.4315	3.3024	1.10	37%	1.59	pass
Z152	6.3043	25.140	12.29	2.98	6.4319	3.3024	1.10	37%	1.59	pass
Z153	6.2956	25.173	12.29	2.98	6.4305	3.3014	1.10	37%	1.59	pass
Z154	6.2861	25.146	12.29	2.98	6.4311	3.3024	1.10	37%	1.58	pass
Z155	6.2828	25.125	12.29	2.98	6.4305	3.3014	1.10	37%	1.58	pass
Z156	6.3057	25.156	12.29	2.98	6.4330	3.3024	1.10	37%	1.59	pass
Z157	6.3038	25.152	12.29	2.98	6.4315	3.3024	1.10	37%	1.59	pass
Z158	6.2780	25.133	12.28	2.98	6.4313	3.3024	1.10	37%	1.58	pass
Z159	6.3027	25.132	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z160	6.2813	25.060	12.28	2.97	6.4320	3.3024	1.10	37%	1.59	pass
Z161	6.2758	25.140	12.29	2.98	6.4308	3.3014	1.10	37%	1.58	pass
Z162	6.2839	25.125	12.29	2.98	6.4323	3.3024	1.10	37%	1.59	pass
Z163	6.2985	25.142	12.29	2.98	6.4321	3.3024	1.10	37%	1.59	pass
Z164	6.2829	25.048	12.29	2.97	6.4319	3.3024	1.10	37%	1.59	pass
Z165	6.2897	25.116	12.28	2.97	6.4317	3.3024	1.10	37%	1.59	pass
Z166	6.2864	25.161	12.29	2.98	6.4303	3.3014	1.10	37%	1.58	pass
Z167	6.2828	25.168	12.29	2.98	6.4315	3.3024	1.10	37%	1.58	pass
Z168										
Z169										
Z170										
Z171										
Z172										
Z173										
Z174										
Z175										
Z176										
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Z195										
Z196										
Z197										
Z198										
Z199										
Z200										

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09060801 and W09060802).

Operator — Date: 7-17-09

QC Supervisor — Date: 1-11-10

QA Reviewer — Date: 2/03/10

Data Report Form DRF-24C: Compact Tracking

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number
Z001	G094	Z051	G116	Z101	G179	Z151	G133	Z201	
Z002	G019	Z052	G083	Z102	G158	Z152	G100	Z202	
Z003	G041	Z053	G013	Z103	G131	Z153	G108	Z203	
Z004	G087	Z054	G107	Z104	G183	Z154	G115	Z204	
Z005	G153	Z055	G121	Z105	G092	Z155	G161	Z205	
Z006	G008	Z056	G077	Z106	G091	Z156	G072	Z206	
Z007	G111	Z057	G086	Z107	G166	Z157	G149	Z207	
Z008	G039	Z058	G138	Z108	G005	Z158	G137	Z208	
Z009	G053	Z059	G134	Z109	G141	Z159	G127	Z209	
Z010	G118	Z060	G144	Z110	G129	Z160	G004	Z210	
Z011	G096	Z061	G167	Z111	G132	Z161	G010	Z211	
Z012	G082	Z062	G028	Z112	G017	Z162	G014	Z212	
Z013	G069	Z063	G139	Z113	G029	Z163	G088	Z213	
Z014	G026	Z064	G057	Z114	G164	Z164	G001	Z214	
Z015	G006	Z065	G173	Z115	G095	Z165	G089	Z215	
Z016	G047	Z066	G098	Z116	G160	Z166	G159	Z216	
Z017	G048	Z067	G120	Z117	G165	Z167	G031	Z217	
Z018	G046	Z068	G079	Z118	G168	Z168		Z218	
Z019	G061	Z069	G081	Z119	G102	Z169		Z219	
Z020	G080	Z070	G035	Z120	G174	Z170		Z220	
Z021	G036	Z071	G093	Z121	G103	Z171		Z221	
Z022	G135	Z072	G181	Z122	G030	Z172		Z222	
Z023	G085	Z073	G143	Z123	G101	Z173		Z223	
Z024	G099	Z074	G051	Z124	G018	Z174		Z224	
Z025	G052	Z075	G122	Z125	G110	Z175		Z225	
Z026	G109	Z076	G178	Z126	G125	Z176		Z226	
Z027	G060	Z077	G113	Z127	G038	Z177		Z227	
Z028	G163	Z078	G126	Z128	G151	Z178		Z228	
Z029	G114	Z079	G070	Z129	G172	Z179		Z229	
Z030	G075	Z080	G032	Z130	G064	Z180		Z230	
Z031	G009	Z081	G182	Z131	G025	Z181		Z231	
Z032	G027	Z082	G154	Z132	G045	Z182		Z232	
Z033	G148	Z083	G076	Z133	G169	Z183		Z233	
Z034	G050	Z084	G152	Z134	G106	Z184		Z234	
Z035	G015	Z085	G011	Z135	G073	Z185		Z235	
Z036	G156	Z086	G059	Z136	G170	Z186		Z236	
Z037	G058	Z087	G117	Z137	G171	Z187		Z237	
Z038	G044	Z088	G124	Z138	G078	Z188		Z238	
Z039	G074	Z089	G063	Z139	G066	Z189		Z239	
Z040	G162	Z090	G040	Z140	G180	Z190		Z240	
Z041	G185	Z091	G140	Z141	G136	Z191		Z241	
Z042	G097	Z092	G184	Z142	G037	Z192		Z242	
Z043	G175	Z093	G123	Z143	G043	Z193		Z243	
Z044	G176	Z094	G055	Z144	G071	Z194		Z244	
Z045	G049	Z095	G067	Z145	G054	Z195		Z245	
Z046	G062	Z096	G084	Z146	G128	Z196		Z246	
Z047	G142	Z097	G177	Z147	G112	Z197		Z247	
Z048	G157	Z098	G042	Z148	G090	Z198		Z248	
Z049	G012	Z099	G007	Z149	G150	Z199		Z249	
Z050	G145	Z100	G056	Z150	G119	Z200		Z250	

Comments

Operator

7-17-09

Date

Data Report Form DRF-24D: Compact Charge Weight

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Hunn/Barker/Dunbar
Compact lot ID:	LEU09-OP2
Compact Lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\CompactDimensions\LEU09-OP2_DRF24R6a.xls

Analytical balance calibration due date:	10/29/09

Target compact charge weight (g):	6.4313
Allowable tolerance in compact charge weight (g):	0.0020
Average weight per overcoated particle (g):	2.010E-03
Approximate number of particles per compact:	3200
Average uranium loading per particle (g):	3.964E-04
Approximate uranium loading per compact (g):	1.268

Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)
G001	6.4319	G051	6.4308	G101	6.4329	G151	6.4315	G201	
G002	6.4322	G052	6.4302	G102	6.4313	G152	6.4325	G202	
G003	6.4309	G053	6.4326	G103	6.4308	G153	6.4309	G203	
G004	6.4320	G054	6.4315	G104	6.4311	G154	6.4313	G204	
G005	6.4299	G055	6.4314	G105	6.4326	G155	6.4311	G205	
G006	6.4325	G056	6.4321	G106	6.4320	G156	6.4326	G206	
G007	6.4321	G057	6.4314	G107	6.4316	G157	6.4306	G207	
G008	6.4313	G058	6.4309	G108	6.4305	G158	6.4319	G208	
G009	6.4321	G059	6.4322	G109	6.4314	G159	6.4303	G209	
G010	6.4308	G060	6.4320	G110	6.4306	G160	6.4303	G210	
G011	6.4303	G061	6.4325	G111	6.4311	G161	6.4305	G211	
G012	6.4333	G062	6.4311	G112	6.4322	G162	6.4327	G212	
G013	6.4321	G063	6.4304	G113	6.4319	G163	6.4320	G213	
G014	6.4323	G064	6.4322	G114	6.4328	G164	6.4311	G214	
G015	6.4310	G065	6.4319	G115	6.4311	G165	6.4308	G215	
G016	6.4304	G066	6.4312	G116	6.4303	G166	6.4299	G216	
G017	6.4319	G067	6.4306	G117	6.4328	G167	6.4323	G217	
G018	6.4319	G068	6.4308	G118	6.4322	G168	6.4313	G218	
G019	6.4306	G069	6.4313	G119	6.4321	G169	6.4321	G219	
G020	6.4307	G070	6.4323	G120	6.4311	G170	6.4304	G220	
G021	6.4300	G071	6.4326	G121	6.4321	G171	6.4325	G221	
G022	6.4309	G072	6.4330	G122	6.4309	G172	6.4321	G222	
G023	6.4316	G073	6.4319	G123	6.4310	G173	6.4321	G223	
G024	6.4303	G074	6.4310	G124	6.4320	G174	6.4320	G224	
G025	6.4323	G075	6.4304	G125	6.4309	G175	6.4320	G225	
G026	6.4311	G076	6.4302	G126	6.4323	G176	6.4309	G226	
G027	6.4308	G077	6.4316	G127	6.4321	G177	6.4321	G227	
G028	6.4306	G078	6.4316	G128	6.4320	G178	6.4331	G228	
G029	6.4303	G079	6.4325	G129	6.4321	G179	6.4327	G229	
G030	6.4309	G080	6.4312	G130	6.4314	G180	6.4318	G230	
G031	6.4315	G081	6.4325	G131	6.4306	G181	6.4323	G231	
G032	6.4322	G082	6.4329	G132	6.4322	G182	6.4314	G232	
G033	6.4307	G083	6.4315	G133	6.4315	G183	6.4327	G233	
G034	6.4325	G084	6.4322	G134	6.4307	G184	6.4317	G234	
G035	6.4324	G085	6.4314	G135	6.4311	G185	6.4304	G235	
G036	6.4323	G086	6.4309	G136	6.4330	G186		G236	
G037	6.4329	G087	6.4318	G137	6.4313	G187		G237	
G038	6.4327	G088	6.4321	G138	6.4295	G188		G238	
G039	6.4318	G089	6.4317	G139	6.4314	G189		G239	
G040	6.4321	G090	6.4320	G140	6.4302	G190		G240	
G041	6.4303	G091	6.4314	G141	6.4329	G191		G241	
G042	6.4316	G092	6.4313	G142	6.4316	G192		G242	
G043	6.4317	G093	6.4326	G143	6.4311	G193		G243	
G044	6.4326	G094	6.4327	G144	6.4308	G194		G244	
G045	6.4330	G095	6.4310	G145	6.4318	G195		G245	
G046	6.4329	G096	6.4307	G146	6.4301	G196		G246	
G047	6.4315	G097	6.4329	G147	6.4325	G197		G247	
G048	6.4322	G098	6.4300	G148	6.4326	G198		G248	
G049	6.4311	G099	6.4302	G149	6.4315	G199		G249	
G050	6.4325	G100	6.4319	G150	6.4305	G200		G250	

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09060801 and W09060802).

Operator

6-23-09

Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z001	25.143	12.27	12.27	12.28	12.28	12.27	12.27	y	6.0964	pass
Z002	25.157	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1062	pass
Z003	25.120	12.28	12.28	12.27	12.29	12.28	12.28	y	6.1085	pass
Z004	25.152	12.26	12.27	12.27	12.26	12.27	12.26	y	6.1391	pass
Z005	25.147	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1015	pass
Z006	25.102	12.26	12.26	12.27	12.27	12.27	12.26	y	6.0972	pass
Z007	25.079	12.26	12.26	12.27	12.28	12.27	12.27	y	6.0897	pass
Z008	25.092	12.27	12.27	12.27	12.28	12.27	12.28	y	6.0936	pass
Z009	25.142	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1066	pass
Z010	25.135	12.27	12.27	12.28	12.27	12.27	12.27	y	6.0934	pass
Z011	25.123	12.28	12.27	12.27	12.27	12.27	12.27	y	6.0987	pass
Z012	25.142	12.26	12.26	12.26	12.26	12.27	12.27	y	6.1013	pass
Z013	25.125	12.28	12.28	12.28	12.27	12.27	12.27	y	6.0958	pass
Z014	25.126	12.28	12.28	12.28	12.28	12.28	12.27	y	6.0791	pass
Z015	25.163	12.27	12.28	12.27	12.27	12.27	12.27	y	6.0893	pass
Z016	25.140	12.26	12.26	12.27	12.27	12.27	12.27	y	6.0936	pass
Z017	25.121	12.27	12.27	12.27	12.28	12.28	12.28	y	6.0878	pass
Z018	25.121	12.28	12.28	12.28	12.29	12.28	12.28	y	6.0958	pass
Z019	25.140	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1200	pass
Z020	25.126	12.28	12.27	12.27	12.27	12.28	12.27	y	6.1045	pass
Z021	25.146	12.27	12.27	12.27	12.27	12.28	12.27	y	6.0851	pass
Z022	25.142	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0883	pass
Z023	25.129	12.27	12.26	12.27	12.27	12.28	12.27	y	6.0959	pass
Z024	25.101	12.28	12.28	12.28	12.28	12.27	12.27	y	6.0929	pass
Z025	25.135	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0873	pass
Z026	25.123	12.27	12.28	12.28	12.28	12.27	12.28	y	6.0895	pass
Z027	25.123	12.28	12.28	12.28	12.27	12.27	12.27	y	6.0960	pass
Z028	25.162	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1439	pass
Z029	25.147	12.26	12.27	12.27	12.27	12.27	12.27	y	6.1439	pass
Z030	25.142	12.28	12.28	12.28	12.28	12.28	12.28	y	6.0887	pass
Z031	25.126	12.27	12.26	12.27	12.27	12.27	12.26	y	6.1289	pass
Z032	25.124	12.26	12.26	12.27	12.27	12.27	12.27	y	6.0971	pass
Z033	25.132	12.26	12.26	12.27	12.27	12.26	12.27	y	6.0935	pass
Z034	25.130	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0940	pass
Z035	25.166	12.26	12.26	12.27	12.27	12.27	12.27	y	6.1329	pass
Z036	25.132	12.26	12.27	12.27	12.27	12.27	12.28	y	6.0949	pass
Z037	25.146	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0980	pass
Z038	25.153	12.27	12.28	12.27	12.27	12.27	12.28	y	6.0903	pass
Z039	25.133	12.28	12.27	12.27	12.28	12.28	12.28	y	6.0786	pass
Z040	25.124	12.26	12.26	12.27	12.27	12.27	12.27	y	6.1006	pass
Z041	25.148	12.27	12.27	12.28	12.28	12.28	12.27	y	6.0920	pass
Z042	25.123	12.26	12.26	12.26	12.27	12.27	12.27	y	6.0867	pass
Z043	25.143	12.28	12.27	12.28	12.28	12.27	12.28	y	6.0907	pass
Z044	25.135	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0981	pass
Z045	25.148	12.28	12.28	12.28	12.28	12.28	12.27	y	6.1382	pass
Z046	25.110	12.28	12.28	12.28	12.27	12.27	12.27	y	6.0734	pass
Z047	25.128	12.27	12.27	12.27	12.27	12.28	12.27	y	6.0965	pass
Z048	25.110	12.28	12.28	12.28	12.28	12.27	12.27	y	6.1145	pass
Z049	25.079	12.27	12.27	12.28	12.27	12.27	12.27	y	6.0772	pass
Z050	25.168	12.25	12.26	12.25	12.26	12.26	12.26	y	6.1225	pass

Comments

Operator

9-14-09
Date

QC Supervisor

1-12-10
Date

QA Reviewer

2/03/10
Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z051	25.132	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0928	pass
Z052	25.159	12.25	12.25	12.26	12.26	12.26	12.25	y	6.0996	pass
Z053	25.120	12.26	12.25	12.25	12.25	12.26	12.26	y	6.0981	pass
Z054	25.092	12.26	12.26	12.26	12.26	12.26	12.25	y	6.0927	pass
Z055	25.171	12.25	12.25	12.26	12.25	12.26	12.25	y	6.1321	pass
Z056	25.076	12.25	12.26	12.26	12.27	12.26	12.25	y	6.0842	pass
Z057	25.147	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0935	pass
Z058	25.128	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0967	pass
Z059	25.137	12.25	12.25	12.26	12.26	12.26	12.26	y	6.0945	pass
Z060	25.139	12.26	12.26	12.25	12.26	12.26	12.26	y	6.1004	pass
Z061	25.142	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0851	pass
Z062	25.152	12.25	12.25	12.26	12.26	12.25	12.25	y	6.0977	pass
Z063	25.124	12.25	12.25	12.26	12.26	12.26	12.26	y	6.0835	pass
Z064	25.137	12.27	12.27	12.27	12.28	12.28	12.28	y	6.1057	pass
Z065	25.144	12.26	12.26	12.26	12.26	12.27	12.27	y	6.1069	pass
Z066	25.120	12.25	12.25	12.26	12.26	12.26	12.25	y	6.0532	pass
Z067	25.110	12.25	12.25	12.26	12.26	12.25	12.25	y	6.0887	pass
Z068	25.142	12.26	12.26	12.26	12.26	12.26	12.26	y	6.1062	pass
Z069	25.147	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0954	pass
Z070	25.153	12.26	12.26	12.26	12.26	12.27	12.27	y	6.1011	pass
Z071	25.126	12.26	12.27	12.26	12.26	12.26	12.26	y	6.0853	pass
Z072	25.124	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0958	pass
Z073	25.128	12.26	12.27	12.26	12.26	12.26	12.26	y	6.0926	pass
Z074	25.112	12.25	12.25	12.25	12.26	12.26	12.26	y	6.0903	pass
Z075	25.102	12.26	12.25	12.26	12.25	12.26	12.26	y	6.0936	pass
Z076	25.088	12.25	12.25	12.26	12.25	12.25	12.25	y	6.1001	pass
Z077	25.135	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0941	pass
Z078	25.107	12.26	12.26	12.26	12.27	12.26	12.26	y	6.0868	pass
Z079	25.137	12.26	12.26	12.26	12.26	12.26	12.25	y	6.0941	pass
Z080	25.140	12.26	12.25	12.25	12.26	12.26	12.26	y	6.1068	pass
Z081	25.142	12.25	12.25	12.26	12.26	12.26	12.26	y	6.0883	pass
Z082	25.158	12.27	12.27	12.26	12.27	12.26	12.26	y	6.1043	pass
Z083	25.125	12.26	12.26	12.26	12.26	12.25	12.25	y	6.0921	pass
Z084	25.133	12.26	12.26	12.26	12.26	12.27	12.26	y	6.0846	pass
Z085	25.147	12.26	12.26	12.25	12.26	12.25	12.25	y	6.0969	pass
Z086	25.184	12.26	12.26	12.25	12.26	12.26	12.25	y	6.1390	pass
Z087	25.128	12.26	12.26	12.26	12.26	12.26	12.27	y	6.0842	pass
Z088	25.114	12.25	12.25	12.26	12.26	12.25	12.25	y	6.0970	pass
Z089	25.138	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0965	pass
Z090	25.106	12.26	12.26	12.26	12.26	12.26	12.25	y	6.0858	pass
Z091	25.135	12.25	12.26	12.25	12.26	12.25	12.25	y	6.0866	pass
Z092	25.167	12.25	12.25	12.26	12.26	12.26	12.26	y	6.1102	pass
Z093	25.137	12.26	12.26	12.26	12.27	12.27	12.26	y	6.0899	pass
Z094	25.147	12.25	12.25	12.25	12.26	12.26	12.25	y	6.1341	pass
Z095	25.144	12.27	12.26	12.27	12.27	12.26	12.27	y	6.1043	pass
Z096	25.111	12.25	12.25	12.26	12.26	12.26	12.26	y	6.1043	pass
Z097	25.128	12.26	12.25	12.25	12.25	12.25	12.25	y	6.0950	pass
Z098	25.180	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1224	pass
Z099	25.114	12.26	12.27	12.27	12.27	12.27	12.26	y	6.0865	pass
Z100	25.132	12.25	12.25	12.25	12.26	12.26	12.25	y	6.1354	pass

Comments

Operator — Date: 9-14-09

QC Supervisor — Date: 1-12-10

QA Reviewer — Date: 2/03/10

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z101	25.100	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0922	pass
Z102	25.095	12.25	12.25	12.25	12.25	12.25	12.25	y	6.0919	pass
Z103	25.114	12.26	12.27	12.27	12.28	12.27	12.27	y	6.1294	pass
Z104	25.142	12.26	12.26	12.27	12.27	12.27	12.27	y	6.1022	pass
Z105	25.138	12.27	12.28	12.27	12.27	12.28	12.28	y	6.0773	pass
Z106	25.147	12.27	12.27	12.26	12.27	12.26	12.27	y	6.1068	pass
Z107	25.135	12.26	12.25	12.26	12.26	12.26	12.26	y	6.0866	pass
Z108	25.109	12.26	12.26	12.26	12.27	12.26	12.26	y	6.1399	pass
Z109	25.123	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0896	pass
Z110	25.126	12.25	12.25	12.26	12.25	12.26	12.25	y	6.0995	pass
Z111	25.151	12.27	12.27	12.27	12.28	12.27	12.27	y	6.1015	pass
Z112	25.099	12.27	12.27	12.26	12.26	12.27	12.27	y	6.1339	pass
Z113	25.123	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0856	pass
Z114	25.144	12.27	12.27	12.28	12.27	12.27	12.26	y	6.0762	pass
Z115	25.167	12.27	12.27	12.26	12.27	12.26	12.26	y	6.1022	pass
Z116	25.147	12.26	12.27	12.26	12.27	12.27	12.26	y	6.0924	pass
Z117	25.142	12.26	12.27	12.27	12.26	12.27	12.27	y	6.0856	pass
Z118	25.123	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0896	pass
Z119	25.099	12.27	12.27	12.28	12.27	12.27	12.27	y	6.0741	pass
Z120	25.096	12.27	12.26	12.27	12.27	12.26	12.26	y	6.0703	pass
Z121	25.143	12.26	12.26	12.26	12.27	12.26	12.25	y	6.0950	pass
Z122	25.171	12.26	12.26	12.26	12.26	12.25	12.26	y	6.1342	pass
Z123	25.129	12.26	12.26	12.26	12.26	12.26	12.27	y	6.0978	pass
Z124	25.125	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1039	pass
Z125	25.133	12.26	12.27	12.27	12.27	12.26	12.27	y	6.0853	pass
Z126	25.132	12.25	12.25	12.25	12.26	12.26	12.26	y	6.1411	pass
Z127	25.137	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1158	pass
Z128	25.140	12.26	12.26	12.27	12.26	12.26	12.25	y	6.0947	pass
Z129	25.143	12.27	12.27	12.27	12.27	12.28	12.28	y	6.1264	pass
Z130	25.149	12.28	12.28	12.27	12.27	12.27	12.27	y	6.1025	pass
Z131	25.109	12.26	12.27	12.28	12.27	12.28	12.27	y	6.0870	pass
Z132	25.162	12.27	12.27	12.27	12.27	12.27	12.28	y	6.1354	pass
Z133	25.111	12.27	12.27	12.28	12.28	12.28	12.27	y	6.0952	pass
Z134	25.146	12.28	12.28	12.28	12.28	12.28	12.28	y	6.0790	pass
Z135	25.128	12.26	12.26	12.26	12.26	12.25	12.26	y	6.1198	pass
Z136	25.157	12.28	12.27	12.28	12.27	12.28	12.28	y	6.0966	pass
Z137	25.149	12.28	12.27	12.28	12.28	12.28	12.29	y	6.1086	pass
Z138	25.110	12.28	12.28	12.28	12.28	12.27	12.28	y	6.0970	pass
Z139	25.101	12.27	12.28	12.28	12.28	12.27	12.27	y	6.0918	pass
Z140	25.144	12.27	12.27	12.27	12.28	12.28	12.28	y	6.1372	pass
Z141	25.125	12.28	12.29	12.28	12.28	12.28	12.28	y	6.0982	pass
Z142	25.146	12.28	12.29	12.29	12.29	12.29	12.28	y	6.0985	pass
Z143	25.201	12.28	12.28	12.29	12.29	12.28	12.28	y	6.1088	pass
Z144	25.151	12.27	12.27	12.27	12.27	12.27	12.28	y	6.0896	pass
Z145	25.161	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0878	pass
Z146	25.128	12.27	12.28	12.27	12.27	12.27	12.27	y	6.0920	pass
Z147	25.100	12.28	12.28	12.28	12.28	12.28	12.28	y	6.1164	pass
Z148	25.133	12.28	12.28	12.27	12.27	12.27	12.27	y	6.1121	pass
Z149	25.132	12.27	12.27	12.27	12.27	12.28	12.28	y	6.0877	pass
Z150	25.126	12.27	12.27	12.27	12.27	12.27	12.27	y	6.1128	pass

Comments

Operator — 9-14-09 Date

QC Supervisor — 1-12-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z151	25.104	12.25	12.25	12.25	12.25	12.26	12.25	y	6.0982	pass
Z152	25.107	12.27	12.27	12.28	12.28	12.28	12.28	y	6.0894	pass
Z153	25.152	12.27	12.27	12.28	12.28	12.27	12.27	y	6.1035	pass
Z154	25.156	12.28	12.28	12.28	12.28	12.27	12.28	y	6.1087	pass
Z155	25.143	12.28	12.27	12.28	12.28	12.27	12.28	y	6.0840	pass
Z156	25.125	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0941	pass
Z157	25.130	12.28	12.28	12.28	12.27	12.28	12.29	y	6.0844	pass
Z158	25.101	12.26	12.27	12.27	12.27	12.28	12.28	y	6.0799	pass
Z159	25.159	12.29	12.29	12.28	12.28	12.28	12.28	y	6.1297	pass
Z160	25.130	12.26	12.26	12.26	12.26	12.26	12.26	y	6.0878	pass
Z161	25.126	12.29	12.28	12.28	12.28	12.28	12.28	y	6.1107	pass
Z162	25.125	12.27	12.27	12.28	12.27	12.28	12.28	y	6.1015	pass
Z163	25.130	12.27	12.27	12.27	12.28	12.27	12.29	y	6.0932	pass
Z164	25.123	12.28	12.28	12.28	12.28	12.28	12.28	y	6.0992	pass
Z165	25.083	12.26	12.26	12.27	12.28	12.26	12.26	y	6.0912	pass
Z166	25.124	12.28	12.28	12.28	12.28	12.28	12.28	y	6.1253	pass
Z167	25.132	12.25	12.25	12.26	12.26	12.25	12.25	y	6.0908	pass
Z168	25.124	12.25	12.25	12.26	12.26	12.26	12.26	y	6.1011	pass
Z169	25.140	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0785	pass
Z170	25.168	12.27	12.27	12.28	12.28	12.27	12.28	y	6.1455	pass
Z171	25.158	12.27	12.27	12.28	12.28	12.27	12.28	y	6.1104	pass
Z172	25.111	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0897	pass
Z173	25.112	12.27	12.27	12.28	12.28	12.28	12.28	y	6.0898	pass
Z174	25.144	12.27	12.27	12.27	12.26	12.27	12.27	y	6.0965	pass
Z175	25.143	12.26	12.26	12.26	12.26	12.25	12.25	y	6.1379	pass
Z176	25.115	12.27	12.27	12.27	12.27	12.26	12.26	y	6.0979	pass
Z177	25.107	12.27	12.27	12.27	12.27	12.27	12.26	y	6.1120	pass
Z178	25.137	12.27	12.26	12.27	12.27	12.27	12.26	y	6.1436	pass
Z179	25.135	12.27	12.27	12.27	12.27	12.27	12.26	y	6.1361	pass
Z180	25.153	12.27	12.27	12.27	12.27	12.28	12.28	y	6.1018	pass
Z181	25.146	12.26	12.27	12.28	12.27	12.28	12.28	y	6.1057	pass
Z182	25.120	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0987	pass
Z183	25.152	12.27	12.28	12.28	12.28	12.27	12.27	y	6.0887	pass
Z184	25.159	12.28	12.28	12.27	12.27	12.28	12.28	y	6.0845	pass
Z185	25.105	12.27	12.28	12.28	12.28	12.27	12.27	y	6.0766	pass
Z186	25.110	12.28	12.28	12.28	12.28	12.28	12.27	y	6.0890	pass
Z187	25.159	12.27	12.27	12.27	12.27	12.28	12.28	y	6.1087	pass
Z188	25.133	12.27	12.27	12.26	12.27	12.26	12.27	y	6.1028	pass
Z189	25.124	12.27	12.27	12.27	12.27	12.27	12.28	y	6.0976	pass
Z190	25.102	12.27	12.27	12.28	12.28	12.28	12.28	y	6.0808	pass
Z191	25.134	12.27	12.27	12.28	12.27	12.27	12.27	y	6.0926	pass
Z192	25.143	12.26	12.27	12.27	12.27	12.26	12.27	y	6.0909	pass
Z193	25.115	12.27	12.27	12.27	12.27	12.27	12.27	y	6.0909	pass
Z194	25.107	12.28	12.27	12.28	12.28	12.27	12.27	y	6.0972	pass
Z195	25.107	12.28	12.27	12.28	12.28	12.27	12.27	y	6.0915	pass
Z196	25.132	12.28	12.28	12.28	12.28	12.28	12.27	y	6.0895	pass
Z197	25.142	12.27	12.27	12.28	12.28	12.28	12.28	y	6.0985	pass
Z198	25.140	12.28	12.27	12.28	12.28	12.28	12.28	y	6.0855	pass
Z199	25.143	12.26	12.26	12.26	12.26	12.27	12.27	y	6.1384	pass
Z200	25.101	12.27	12.27	12.27	12.27	12.27	12.28	y	6.0657	pass

Comments

Operator — 9-14-09 Date

QC Supervisor — 1-12-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24A: Compact Diameter and Length

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Vertical height gauge calibration due date:	3/6/10
Pass-thru block calibration due date:	1/17/11
Digital caliper calibration due date:	7/7/10
Gauge blocks calibration due date:	11/7/12
Analytical balance calibration due date:	2/12/10

Acceptance criteria for compact length:	≥25.02 and ≤25.40 mm
Acceptance criteria for compact diameter:	≥12.22 and ≤12.46 mm (and pass through 12.46 mm ring gauge)
Acceptance criteria for compact mass:	For information only

Compact ID Number	Length (mm)	Diameter (mm)						Pass Thru? (Y or N)	Compact weight (g)	Accept? (pass or fail)
		Top 1	Top 2	Middle 1	Middle 2	Bottom 1	Bottom 2			
Z201	25.151	12.27	12.27	12.28	12.28	12.28	12.28	y	6.1076	pass
Z202	25.142	12.25	12.25	12.25	12.25	12.25	12.25	y	6.1375	pass
Z203	25.120	12.27	12.27	12.27	12.28	12.27	12.28	y	6.0864	pass
Z204										
Z205										
Z206										
Z207										
Z208										
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Z210										
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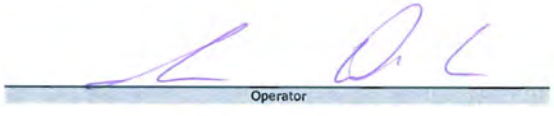
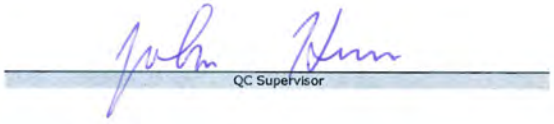
Comments



Operator

9-14-09

Date



QC Supervisor

1-12-10

Date

QA Reviewer

2/03/10

Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.462E-03
Average weight per overcoated particle (g):	4.053E-03
Average TRISO particle volume (cm3):	4.450E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z001	6.0964	25.143	12.27	2.97	6.3462	2.2895	0.70	23%	1.67	pass
Z002	6.1062	25.157	12.27	2.97	6.3458	2.2895	0.70	23%	1.68	pass
Z003	6.1085	25.120	12.28	2.98	6.3448	2.2880	0.70	23%	1.68	pass
Z004	6.1391	25.152	12.27	2.97	6.3495	2.2910	0.70	23%	1.69	pass
Z005	6.1015	25.147	12.27	2.97	6.3491	2.2910	0.70	23%	1.67	pass
Z006	6.0972	25.102	12.27	2.97	6.3474	2.2895	0.70	23%	1.68	pass
Z007	6.0897	25.079	12.27	2.96	6.3470	2.2895	0.70	24%	1.68	pass
Z008	6.0936	25.092	12.27	2.97	6.3483	2.2895	0.70	23%	1.67	pass
Z009	6.1066	25.142	12.27	2.97	6.3455	2.2895	0.70	23%	1.68	pass
Z010	6.0934	25.135	12.27	2.97	6.3471	2.2895	0.70	23%	1.67	pass
Z011	6.0987	25.123	12.27	2.97	6.3470	2.2895	0.70	23%	1.67	pass
Z012	6.1013	25.142	12.26	2.97	6.3453	2.2895	0.70	23%	1.68	pass
Z013	6.0958	25.125	12.28	2.97	6.3453	2.2895	0.70	23%	1.67	pass
Z014	6.0791	25.126	12.28	2.98	6.3446	2.2880	0.70	23%	1.66	pass
Z015	6.0893	25.163	12.27	2.98	6.3460	2.2895	0.70	23%	1.67	pass
Z016	6.0936	25.140	12.27	2.97	6.3489	2.2895	0.70	23%	1.67	pass
Z017	6.0878	25.121	12.28	2.97	6.3474	2.2895	0.70	23%	1.67	pass
Z018	6.0958	25.121	12.28	2.98	6.3474	2.2895	0.70	23%	1.67	pass
Z019	6.1200	25.140	12.27	2.97	6.3488	2.2895	0.70	23%	1.68	pass
Z020	6.1045	25.126	12.27	2.97	6.3488	2.2895	0.70	23%	1.68	pass
Z021	6.0851	25.146	12.27	2.97	6.3451	2.2895	0.70	23%	1.67	pass
Z022	6.0883	25.142	12.27	2.97	6.3471	2.2895	0.70	23%	1.67	pass
Z023	6.0959	25.129	12.27	2.97	6.3487	2.2895	0.70	23%	1.67	pass
Z024	6.0929	25.101	12.28	2.97	6.3472	2.2895	0.70	23%	1.67	pass
Z025	6.0873	25.135	12.27	2.97	6.3479	2.2895	0.70	23%	1.67	pass
Z026	6.0895	25.123	12.28	2.97	6.3464	2.2895	0.70	23%	1.67	pass
Z027	6.0960	25.123	12.28	2.97	6.3466	2.2895	0.70	23%	1.67	pass
Z028	6.1439	25.162	12.27	2.98	6.3509	2.2910	0.70	23%	1.69	pass
Z029	6.1439	25.147	12.27	2.97	6.3477	2.2895	0.70	23%	1.69	pass
Z030	6.0887	25.142	12.28	2.98	6.3458	2.2895	0.70	23%	1.67	pass
Z031	6.1289	25.126	12.27	2.97	6.3441	2.2880	0.70	23%	1.69	pass
Z032	6.0971	25.124	12.27	2.97	6.3466	2.2895	0.70	23%	1.68	pass
Z033	6.0935	25.132	12.27	2.97	6.3471	2.2895	0.70	23%	1.67	pass
Z034	6.0940	25.130	12.27	2.97	6.3490	2.2895	0.70	23%	1.67	pass
Z035	6.1329	25.166	12.27	2.97	6.3461	2.2895	0.70	23%	1.69	pass
Z036	6.0949	25.132	12.27	2.97	6.3475	2.2895	0.70	23%	1.67	pass
Z037	6.0980	25.146	12.27	2.97	6.3472	2.2895	0.70	23%	1.67	pass
Z038	6.0903	25.153	12.27	2.98	6.3483	2.2895	0.70	23%	1.67	pass
Z039	6.0786	25.133	12.28	2.98	6.3462	2.2895	0.70	23%	1.66	pass
Z040	6.1006	25.124	12.27	2.97	6.3464	2.2895	0.70	23%	1.68	pass
Z041	6.0920	25.148	12.28	2.98	6.3450	2.2895	0.70	23%	1.67	pass
Z042	6.0867	25.123	12.27	2.97	6.3499	2.2910	0.70	23%	1.67	pass
Z043	6.0907	25.143	12.28	2.98	6.3468	2.2895	0.70	23%	1.67	pass
Z044	6.0981	25.135	12.27	2.97	6.3466	2.2895	0.70	23%	1.67	pass
Z045	6.1382	25.148	12.28	2.98	6.3464	2.2895	0.70	23%	1.69	pass
Z046	6.0734	25.110	12.28	2.97	6.3449	2.2880	0.70	23%	1.66	pass
Z047	6.0965	25.128	12.27	2.97	6.3458	2.2895	0.70	23%	1.67	pass
Z048	6.1145	25.110	12.28	2.97	6.3477	2.2895	0.70	23%	1.68	pass
Z049	6.0772	25.079	12.27	2.97	6.3488	2.2895	0.70	23%	1.67	pass
Z050	6.1225	25.168	12.26	2.97	6.3444	2.2880	0.70	23%	1.69	pass

Comments
Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Operator	Date: 9-14-09
QC Supervisor	Date: 1-12-10
QA Reviewer	Date: 2/03/10

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.462E-03
Average weight per overcoated particle (g):	4.053E-03
Average TRISO particle volume (cm3):	4.450E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z051	6.0928	25.132	12.26	2.97	6.3470	2.2895	0.70	23%	1.68	pass
Z052	6.0996	25.159	12.26	2.97	6.3460	2.2895	0.70	23%	1.68	pass
Z053	6.0981	25.120	12.26	2.96	6.3488	2.2895	0.70	24%	1.68	pass
Z054	6.0927	25.092	12.26	2.96	6.3491	2.2910	0.70	24%	1.68	pass
Z055	6.1321	25.171	12.25	2.97	6.3480	2.2895	0.70	23%	1.69	pass
Z056	6.0842	25.076	12.26	2.96	6.3479	2.2895	0.70	24%	1.68	pass
Z057	6.0935	25.147	12.26	2.97	6.3474	2.2895	0.70	23%	1.67	pass
Z058	6.0967	25.128	12.26	2.97	6.3448	2.2880	0.70	23%	1.68	pass
Z059	6.0945	25.137	12.26	2.97	6.3475	2.2895	0.70	23%	1.68	pass
Z060	6.1004	25.139	12.26	2.97	6.3467	2.2895	0.70	23%	1.68	pass
Z061	6.0851	25.142	12.26	2.97	6.3474	2.2895	0.70	23%	1.67	pass
Z062	6.0977	25.152	12.25	2.97	6.3482	2.2895	0.70	23%	1.68	pass
Z063	6.0835	25.124	12.26	2.96	6.3464	2.2895	0.70	24%	1.67	pass
Z064	6.1057	25.137	12.28	2.97	6.3498	2.2910	0.70	23%	1.68	pass
Z065	6.1069	25.144	12.26	2.97	6.3449	2.2880	0.70	23%	1.68	pass
Z066	6.0532	25.120	12.26	2.96	6.3476	2.2895	0.70	24%	1.66	pass
Z067	6.0887	25.110	12.25	2.96	6.3458	2.2895	0.70	24%	1.68	pass
Z068	6.1062	25.142	12.26	2.97	6.3466	2.2895	0.70	23%	1.68	pass
Z069	6.0954	25.147	12.26	2.97	6.3453	2.2895	0.70	23%	1.68	pass
Z070	6.1011	25.153	12.26	2.97	6.3490	2.2895	0.70	23%	1.68	pass
Z071	6.0853	25.126	12.26	2.97	6.3462	2.2895	0.70	23%	1.67	pass
Z072	6.0958	25.124	12.26	2.97	6.3463	2.2895	0.70	23%	1.68	pass
Z073	6.0926	25.128	12.26	2.97	6.3475	2.2895	0.70	23%	1.68	pass
Z074	6.0903	25.112	12.26	2.96	6.3494	2.2910	0.70	24%	1.68	pass
Z075	6.0936	25.102	12.26	2.96	6.3448	2.2880	0.70	24%	1.68	pass
Z076	6.1001	25.088	12.25	2.96	6.3489	2.2895	0.70	24%	1.69	pass
Z077	6.0941	25.135	12.26	2.97	6.3484	2.2895	0.70	23%	1.68	pass
Z078	6.0868	25.107	12.26	2.96	6.3472	2.2895	0.70	24%	1.67	pass
Z079	6.0941	25.137	12.26	2.97	6.3466	2.2895	0.70	23%	1.68	pass
Z080	6.1068	25.140	12.26	2.97	6.3481	2.2895	0.70	23%	1.68	pass
Z081	6.0883	25.142	12.26	2.97	6.3496	2.2910	0.70	24%	1.67	pass
Z082	6.1043	25.158	12.27	2.97	6.3504	2.2910	0.70	23%	1.68	pass
Z083	6.0921	25.125	12.26	2.96	6.3468	2.2895	0.70	24%	1.68	pass
Z084	6.0846	25.133	12.26	2.97	6.3497	2.2910	0.70	23%	1.67	pass
Z085	6.0969	25.147	12.26	2.97	6.3493	2.2910	0.70	24%	1.68	pass
Z086	6.1390	25.184	12.26	2.97	6.3497	2.2910	0.70	23%	1.69	pass
Z087	6.0842	25.128	12.26	2.97	6.3456	2.2895	0.70	23%	1.67	pass
Z088	6.0970	25.114	12.25	2.96	6.3453	2.2895	0.70	24%	1.68	pass
Z089	6.0965	25.138	12.26	2.97	6.3484	2.2895	0.70	23%	1.68	pass
Z090	6.0858	25.106	12.26	2.96	6.3465	2.2895	0.70	24%	1.68	pass
Z091	6.0866	25.135	12.25	2.96	6.3475	2.2895	0.70	24%	1.67	pass
Z092	6.1102	25.167	12.26	2.97	6.3447	2.2880	0.70	23%	1.68	pass
Z093	6.0899	25.137	12.26	2.97	6.3448	2.2880	0.70	23%	1.67	pass
Z094	6.1341	25.147	12.25	2.97	6.3459	2.2895	0.70	23%	1.69	pass
Z095	6.1043	25.144	12.27	2.97	6.3459	2.2895	0.70	23%	1.68	pass
Z096	6.1043	25.111	12.26	2.96	6.3474	2.2895	0.70	24%	1.68	pass
Z097	6.0950	25.128	12.25	2.96	6.3461	2.2895	0.70	24%	1.68	pass
Z098	6.1224	25.180	12.27	2.98	6.3451	2.2895	0.70	23%	1.68	pass
Z099	6.0865	25.114	12.27	2.97	6.3466	2.2895	0.70	23%	1.67	pass
Z100	6.1354	25.132	12.25	2.96	6.3492	2.2910	0.70	24%	1.70	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Operator — 9-14-09 Date

QC Supervisor — 1-12-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.462E-03
Average weight per overcoated particle (g):	4.053E-03
Average TRISO particle volume (cm3):	4.450E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z101	6.0922	25.100	12.26	2.96	6.3450	2.2895	0.70	24%	1.68	pass
Z102	6.0919	25.095	12.25	2.96	6.3484	2.2895	0.70	24%	1.68	pass
Z103	6.1294	25.114	12.27	2.97	6.3481	2.2895	0.70	23%	1.69	pass
Z104	6.1022	25.142	12.27	2.97	6.3465	2.2895	0.70	23%	1.68	pass
Z105	6.0773	25.138	12.28	2.97	6.3453	2.2895	0.70	23%	1.66	pass
Z106	6.1068	25.147	12.27	2.97	6.3486	2.2895	0.70	23%	1.68	pass
Z107	6.0866	25.135	12.26	2.97	6.3465	2.2895	0.70	23%	1.67	pass
Z108	6.1399	25.109	12.26	2.96	6.3477	2.2895	0.70	24%	1.70	pass
Z109	6.0896	25.123	12.26	2.97	6.3455	2.2895	0.70	23%	1.67	pass
Z110	6.0995	25.126	12.25	2.96	6.3489	2.2895	0.70	24%	1.68	pass
Z111	6.1015	25.151	12.27	2.97	6.3474	2.2895	0.70	23%	1.67	pass
Z112	6.1339	25.099	12.27	2.97	6.3462	2.2895	0.70	23%	1.69	pass
Z113	6.0856	25.123	12.26	2.97	6.3460	2.2895	0.70	23%	1.67	pass
Z114	6.0762	25.144	12.27	2.97	6.3457	2.2895	0.70	23%	1.66	pass
Z115	6.1022	25.167	12.27	2.97	6.3476	2.2895	0.70	23%	1.67	pass
Z116	6.0924	25.147	12.27	2.97	6.3470	2.2895	0.70	23%	1.67	pass
Z117	6.0856	25.142	12.27	2.97	6.3473	2.2895	0.70	23%	1.67	pass
Z118	6.0896	25.123	12.26	2.97	6.3462	2.2895	0.70	23%	1.67	pass
Z119	6.0741	25.099	12.27	2.97	6.3473	2.2895	0.70	23%	1.67	pass
Z120	6.0703	25.096	12.27	2.97	6.3470	2.2895	0.70	24%	1.67	pass
Z121	6.0950	25.143	12.26	2.97	6.3487	2.2895	0.70	23%	1.68	pass
Z122	6.1342	25.171	12.26	2.97	6.3485	2.2895	0.70	23%	1.69	pass
Z123	6.0978	25.129	12.26	2.97	6.3470	2.2895	0.70	23%	1.68	pass
Z124	6.1039	25.125	12.27	2.97	6.3479	2.2895	0.70	23%	1.68	pass
Z125	6.0853	25.133	12.27	2.97	6.3448	2.2880	0.70	23%	1.67	pass
Z126	6.1411	25.132	12.26	2.96	6.3457	2.2895	0.70	24%	1.70	pass
Z127	6.1158	25.137	12.27	2.97	6.3438	2.2880	0.70	23%	1.68	pass
Z128	6.0947	25.140	12.26	2.97	6.3442	2.2880	0.70	23%	1.68	pass
Z129	6.1264	25.143	12.27	2.97	6.3490	2.2895	0.70	23%	1.68	pass
Z130	6.1025	25.149	12.27	2.98	6.3452	2.2895	0.70	23%	1.67	pass
Z131	6.0870	25.109	12.27	2.97	6.3464	2.2895	0.70	23%	1.67	pass
Z132	6.1354	25.162	12.27	2.98	6.3448	2.2880	0.70	23%	1.69	pass
Z133	6.0952	25.111	12.28	2.97	6.3467	2.2895	0.70	23%	1.67	pass
Z134	6.0790	25.146	12.28	2.98	6.3486	2.2895	0.70	23%	1.66	pass
Z135	6.1198	25.128	12.26	2.97	6.3484	2.2895	0.70	23%	1.69	pass
Z136	6.0966	25.157	12.28	2.98	6.3477	2.2895	0.70	23%	1.67	pass
Z137	6.1086	25.149	12.28	2.98	6.3464	2.2895	0.70	23%	1.67	pass
Z138	6.0970	25.110	12.28	2.97	6.3444	2.2880	0.70	23%	1.67	pass
Z139	6.0918	25.101	12.28	2.97	6.3459	2.2895	0.70	23%	1.67	pass
Z140	6.1372	25.144	12.28	2.98	6.3510	2.2910	0.70	23%	1.69	pass
Z141	6.0982	25.125	12.28	2.98	6.3496	2.2910	0.70	23%	1.67	pass
Z142	6.0985	25.146	12.29	2.98	6.3457	2.2895	0.70	23%	1.67	pass
Z143	6.1088	25.201	12.28	2.99	6.3454	2.2895	0.70	23%	1.67	pass
Z144	6.0896	25.151	12.27	2.97	6.3446	2.2880	0.70	23%	1.67	pass
Z145	6.0878	25.161	12.26	2.97	6.3463	2.2895	0.70	23%	1.67	pass
Z146	6.0920	25.128	12.27	2.97	6.3439	2.2880	0.70	23%	1.67	pass
Z147	6.1164	25.100	12.28	2.97	6.3484	2.2895	0.70	23%	1.68	pass
Z148	6.1121	25.133	12.27	2.97	6.3470	2.2895	0.70	23%	1.68	pass
Z149	6.0877	25.132	12.27	2.97	6.3438	2.2880	0.70	23%	1.67	pass
Z150	6.1128	25.126	12.27	2.97	6.3499	2.2910	0.70	23%	1.68	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Operator	9-14-09 Date
QC Supervisor	1-12-10 Date
QA Reviewer	2/03/10 Date

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.462E-03
Average weight per overcoated particle (g):	4.053E-03
Average TRISO particle volume (cm3):	4.450E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z151	6.0982	25.104	12.25	2.96	6.3449	2.2880	0.70	24%	1.68	pass
Z152	6.0894	25.107	12.28	2.97	6.3455	2.2895	0.70	23%	1.67	pass
Z153	6.1035	25.152	12.27	2.98	6.3478	2.2895	0.70	23%	1.67	pass
Z154	6.1087	25.156	12.28	2.98	6.3467	2.2895	0.70	23%	1.67	pass
Z155	6.0840	25.143	12.28	2.98	6.3450	2.2895	0.70	23%	1.66	pass
Z156	6.0941	25.125	12.27	2.97	6.3487	2.2895	0.70	23%	1.67	pass
Z157	6.0844	25.130	12.28	2.98	6.3491	2.2910	0.70	23%	1.66	pass
Z158	6.0799	25.101	12.27	2.97	6.3452	2.2895	0.70	23%	1.67	pass
Z159	6.1297	25.159	12.28	2.98	6.3460	2.2895	0.70	23%	1.68	pass
Z160	6.0878	25.130	12.26	2.97	6.3460	2.2895	0.70	23%	1.67	pass
Z161	6.1107	25.126	12.28	2.98	6.3490	2.2895	0.70	23%	1.68	pass
Z162	6.1015	25.125	12.28	2.97	6.3470	2.2895	0.70	23%	1.67	pass
Z163	6.0932	25.130	12.28	2.97	6.3462	2.2895	0.70	23%	1.67	pass
Z164	6.0992	25.123	12.28	2.98	6.3461	2.2895	0.70	23%	1.67	pass
Z165	6.0912	25.083	12.27	2.96	6.3469	2.2895	0.70	24%	1.68	pass
Z166	6.1253	25.124	12.28	2.98	6.3447	2.2880	0.70	23%	1.68	pass
Z167	6.0908	25.132	12.25	2.96	6.3487	2.2895	0.70	24%	1.68	pass
Z168	6.1011	25.124	12.26	2.96	6.3489	2.2895	0.70	24%	1.68	pass
Z169	6.0785	25.140	12.27	2.97	6.3463	2.2895	0.70	23%	1.66	pass
Z170	6.1455	25.168	12.28	2.98	6.3486	2.2895	0.70	23%	1.69	pass
Z171	6.1104	25.158	12.28	2.98	6.3490	2.2895	0.70	23%	1.68	pass
Z172	6.0897	25.111	12.27	2.97	6.3458	2.2895	0.70	23%	1.67	pass
Z173	6.0898	25.112	12.28	2.97	6.3488	2.2895	0.70	23%	1.67	pass
Z174	6.0965	25.144	12.27	2.97	6.3470	2.2895	0.70	23%	1.67	pass
Z175	6.1379	25.143	12.26	2.97	6.3464	2.2895	0.70	23%	1.70	pass
Z176	6.0979	25.115	12.27	2.97	6.3479	2.2895	0.70	23%	1.68	pass
Z177	6.1120	25.107	12.27	2.97	6.3475	2.2895	0.70	23%	1.68	pass
Z178	6.1436	25.137	12.27	2.97	6.3465	2.2895	0.70	23%	1.69	pass
Z179	6.1361	25.135	12.27	2.97	6.3459	2.2895	0.70	23%	1.69	pass
Z180	6.1018	25.153	12.27	2.98	6.3487	2.2895	0.70	23%	1.67	pass
Z181	6.1057	25.146	12.27	2.97	6.3466	2.2895	0.70	23%	1.68	pass
Z182	6.0987	25.120	12.27	2.97	6.3499	2.2910	0.70	23%	1.68	pass
Z183	6.0887	25.152	12.28	2.98	6.3483	2.2895	0.70	23%	1.67	pass
Z184	6.0845	25.159	12.28	2.98	6.3462	2.2895	0.70	23%	1.66	pass
Z185	6.0766	25.105	12.28	2.97	6.3471	2.2895	0.70	23%	1.67	pass
Z186	6.0890	25.110	12.28	2.97	6.3474	2.2895	0.70	23%	1.67	pass
Z187	6.1087	25.159	12.27	2.98	6.3448	2.2880	0.70	23%	1.68	pass
Z188	6.1028	25.133	12.27	2.97	6.3470	2.2895	0.70	23%	1.68	pass
Z189	6.0976	25.124	12.27	2.97	6.3476	2.2895	0.70	23%	1.67	pass
Z190	6.0808	25.102	12.28	2.97	6.3477	2.2895	0.70	23%	1.67	pass
Z191	6.0926	25.134	12.27	2.97	6.3468	2.2895	0.70	23%	1.67	pass
Z192	6.0909	25.143	12.27	2.97	6.3463	2.2895	0.70	23%	1.67	pass
Z193	6.0909	25.115	12.27	2.97	6.3445	2.2880	0.70	23%	1.67	pass
Z194	6.0972	25.107	12.28	2.97	6.3485	2.2895	0.70	23%	1.67	pass
Z195	6.0915	25.107	12.28	2.97	6.3484	2.2895	0.70	23%	1.67	pass
Z196	6.0895	25.132	12.28	2.98	6.3465	2.2895	0.70	23%	1.67	pass
Z197	6.0985	25.142	12.28	2.98	6.3461	2.2895	0.70	23%	1.67	pass
Z198	6.0855	25.140	12.28	2.98	6.3468	2.2895	0.70	23%	1.67	pass
Z199	6.1384	25.143	12.26	2.97	6.3470	2.2895	0.70	23%	1.69	pass
Z200	6.0657	25.101	12.27	2.97	6.3479	2.2895	0.70	23%	1.66	pass

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Operator — Date: 9-14-09

QC Supervisor — Date: 1-12-10

QA Reviewer — Date: 2/03/10

Data Report Form DRF-24B: Compact Matrix Density

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Average weight per TRISO particle (g):	1.462E-03
Average weight per overcoated particle (g):	4.053E-03
Average TRISO particle volume (cm3):	4.450E-04

Acceptance criteria for matrix density:	≥1.45

Compact ID Number	Compact Weight (g)	Length (mm)	Av. Diameter (mm)	Compact Volume (cm3)	Charge Weight (g)	Particle Weight (g)	Particle Volume (cm3)	Packing Fraction	Matrix Density (g/cm3)	Accept? (pass or fail)
Z201	6.1076	25.151	12.28	2.98	6.3493	2.2910	0.70	23%	1.67	pass
Z202	6.1375	25.142	12.25	2.96	6.3470	2.2895	0.70	24%	1.70	pass
Z203	6.0864	25.120	12.27	2.97	6.3462	2.2895	0.70	23%	1.67	pass
Z204										
Z205										
Z206										
Z207										
Z208										
Z209										
Z210										
Z211										
Z212										
Z213										
Z214										
Z215										
Z216										
Z217										
Z218										
Z219										
Z220										
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Z238										
Z239										
Z240										
Z241										
Z242										
Z243										
Z244										
Z245										
Z246										
Z247										
Z248										
Z249										
Z250										

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Operator — 9-14-09 Date

QC Supervisor — 1-12-10 Date

QA Reviewer — 2/03/10 Date

Data Report Form DRF-24C: Compact Tracking

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number	Compact Z Number	Compact G Number
Z001	G021	Z051	G036	Z101	G123	Z151	G029	Z201	G203
Z002	G106	Z052	G012	Z102	G049	Z152	G068	Z202	G090
Z003	G197	Z053	G041	Z103	G219	Z153	G103	Z203	G152
Z004	G087	Z054	G171	Z104	G144	Z154	G018	Z204	
Z005	G130	Z055	G098	Z105	G066	Z155	G158	Z205	
Z006	G060	Z056	G156	Z106	G010	Z156	G023	Z206	
Z007	G047	Z057	G124	Z107	G004	Z157	G183	Z207	
Z008	G147	Z058	G177	Z108	G099	Z158	G067	Z208	
Z009	G101	Z059	G008	Z109	G120	Z159	G218	Z209	
Z010	G071	Z060	G007	Z110	G039	Z160	G014	Z210	
Z011	G035	Z061	G185	Z111	G210	Z161	G198	Z211	
Z012	G057	Z062	G059	Z112	G086	Z162	G109	Z212	
Z013	G195	Z063	G170	Z113	G161	Z163	G013	Z213	
Z014	G180	Z064	G209	Z114	G182	Z164	G044	Z214	
Z015	G114	Z065	G062	Z115	G063	Z165	G116	Z215	
Z016	G078	Z066	G046	Z116	G192	Z166	G215	Z216	
Z017	G164	Z067	G135	Z117	G174	Z167	G058	Z217	
Z018	G206	Z068	G070	Z118	G006	Z168	G073	Z218	
Z019	G107	Z069	G125	Z119	G166	Z169	G151	Z219	
Z020	G037	Z070	G202	Z120	G163	Z170	G081	Z220	
Z021	G172	Z071	G162	Z121	G054	Z171	G015	Z221	
Z022	G118	Z072	G194	Z122	G095	Z172	G119	Z222	
Z023	G132	Z073	G167	Z123	G019	Z173	G181	Z223	
Z024	G139	Z074	G153	Z124	G205	Z174	G102	Z224	
Z025	G154	Z075	G121	Z125	G175	Z175	G083	Z225	
Z026	G138	Z076	G025	Z126	G094	Z176	G079	Z226	
Z027	G042	Z077	G022	Z127	G216	Z177	G053	Z227	
Z028	G085	Z078	G187	Z128	G100	Z178	G082	Z228	
Z029	G084	Z079	G040	Z129	G220	Z179	G088	Z229	
Z030	G140	Z080	G011	Z130	G104	Z180	G136	Z230	
Z031	G089	Z081	G045	Z131	G052	Z181	G105	Z231	
Z032	G129	Z082	G212	Z132	G097	Z182	G137	Z232	
Z033	G117	Z083	G145	Z133	G026	Z183	G112	Z233	
Z034	G111	Z084	G188	Z134	G190	Z184	G150	Z234	
Z035	G093	Z085	G024	Z135	G043	Z185	G159	Z235	
Z036	G003	Z086	G096	Z136	G142	Z186	G173	Z236	
Z037	G009	Z087	G176	Z137	G207	Z187	G196	Z237	
Z038	G108	Z088	G056	Z138	G191	Z188	G027	Z238	
Z039	G160	Z089	G148	Z139	G143	Z189	G113	Z239	
Z040	G128	Z090	G069	Z140	G213	Z190	G165	Z240	
Z041	G122	Z091	G005	Z141	G189	Z191	G134	Z241	
Z042	G065	Z092	G032	Z142	G208	Z192	G002	Z242	
Z043	G020	Z093	G141	Z143	G064	Z193	G131	Z243	
Z044	G133	Z094	G091	Z144	G074	Z194	G146	Z244	
Z045	G217	Z095	G211	Z145	G178	Z195	G115	Z245	
Z046	G157	Z096	G126	Z146	G030	Z196	G186	Z246	
Z047	G193	Z097	G075	Z147	G199	Z197	G016	Z247	
Z048	G201	Z098	G214	Z148	G200	Z198	G184	Z248	
Z049	G155	Z099	G204	Z149	G033	Z199	G080	Z249	
Z050	G017	Z100	G092	Z150	G031	Z200	G149	Z250	

Comments

Operator

3-10-10

Date

Data Report Form DRF-24D: Compact Charge Weight

Procedure:	AGR-CHAR-DAM-24 Rev. 6a
Operator:	Dunbar, Barker, Hunn, West
Compact lot ID:	LEU11-OP2-Z
Compact Lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\CompactDimensions\LEU11-OP2_DRF24R6a.xls

Analytical balance calibration due date:	10/29/09

Target compact charge weight (g):	6.3470
Allowable tolerance in compact charge weight (g):	0.0040
Average weight per overcoated particle (g):	4.053E-03
Approximate number of particles per compact:	1566
Average uranium loading per particle (g):	6.386E-04
Approximate uranium loading per compact (g):	1.000

Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)	Compact G Number	Charge Weight (g)
G001	6.3478	G051	6.3454	G101	6.3455	G151	6.3463	G201	6.3477
G002	6.3463	G052	6.3464	G102	6.3470	G152	6.3462	G202	6.3490
G003	6.3475	G053	6.3475	G103	6.3478	G153	6.3494	G203	6.3493
G004	6.3465	G054	6.3487	G104	6.3452	G154	6.3479	G204	6.3466
G005	6.3475	G055	6.3449	G105	6.3466	G155	6.3488	G205	6.3479
G006	6.3462	G056	6.3453	G106	6.3458	G156	6.3479	G206	6.3474
G007	6.3467	G057	6.3453	G107	6.3488	G157	6.3449	G207	6.3464
G008	6.3475	G058	6.3487	G108	6.3483	G158	6.3450	G208	6.3457
G009	6.3472	G059	6.3482	G109	6.3470	G159	6.3471	G209	6.3498
G010	6.3486	G060	6.3474	G110	6.3454	G160	6.3462	G210	6.3474
G011	6.3481	G061	6.3487	G111	6.3490	G161	6.3460	G211	6.3459
G012	6.3460	G062	6.3449	G112	6.3483	G162	6.3462	G212	6.3504
G013	6.3462	G063	6.3476	G113	6.3476	G163	6.3470	G213	6.3510
G014	6.3460	G064	6.3454	G114	6.3460	G164	6.3474	G214	6.3451
G015	6.3490	G065	6.3499	G115	6.3484	G165	6.3477	G215	6.3447
G016	6.3461	G066	6.3453	G116	6.3469	G166	6.3473	G216	6.3438
G017	6.3444	G067	6.3452	G117	6.3471	G167	6.3475	G217	6.3464
G018	6.3467	G068	6.3455	G118	6.3471	G168	6.3438	G218	6.3460
G019	6.3470	G069	6.3465	G119	6.3458	G169	6.3470	G219	6.3481
G020	6.3468	G070	6.3466	G120	6.3455	G170	6.3464	G220	6.3490
G021	6.3462	G071	6.3471	G121	6.3448	G171	6.3491	G221	
G022	6.3484	G072	6.3464	G122	6.3450	G172	6.3451	G222	
G023	6.3487	G073	6.3489	G123	6.3450	G173	6.3474	G223	
G024	6.3493	G074	6.3446	G124	6.3474	G174	6.3473	G224	
G025	6.3489	G075	6.3461	G125	6.3453	G175	6.3448	G225	
G026	6.3467	G076	6.3458	G126	6.3474	G176	6.3456	G226	
G027	6.3470	G077	6.3492	G127	6.3445	G177	6.3448	G227	
G028	6.3483	G078	6.3460	G128	6.3464	G178	6.3463	G228	
G029	6.3449	G079	6.3479	G129	6.3466	G179	6.3479	G229	
G030	6.3439	G080	6.3470	G130	6.3491	G180	6.3446	G230	
G031	6.3499	G081	6.3486	G131	6.3445	G181	6.3488	G231	
G032	6.3447	G082	6.3465	G132	6.3487	G182	6.3457	G232	
G033	6.3438	G083	6.3464	G133	6.3466	G183	6.3491	G233	
G034	6.3490	G084	6.3477	G134	6.3468	G184	6.3493	G234	
G035	6.3470	G085	6.3509	G135	6.3458	G185	6.3474	G235	
G036	6.3470	G086	6.3462	G136	6.3487	G186	6.3465	G236	
G037	6.3488	G087	6.3495	G137	6.3499	G187	6.3472	G237	
G038	6.3496	G088	6.3459	G138	6.3464	G188	6.3497	G238	
G039	6.3489	G089	6.3441	G139	6.3472	G189	6.3496	G239	
G040	6.3466	G090	6.3470	G140	6.3458	G190	6.3486	G240	
G041	6.3488	G091	6.3459	G141	6.3448	G191	6.3444	G241	
G042	6.3466	G092	6.3492	G142	6.3477	G192	6.3470	G242	
G043	6.3484	G093	6.3461	G143	6.3459	G193	6.3458	G243	
G044	6.3461	G094	6.3457	G144	6.3465	G194	6.3463	G244	
G045	6.3496	G095	6.3485	G145	6.3468	G195	6.3453	G245	
G046	6.3476	G096	6.3497	G146	6.3485	G196	6.3448	G246	
G047	6.3470	G097	6.3448	G147	6.3483	G197	6.3448	G247	
G048	6.3478	G098	6.3480	G148	6.3484	G198	6.3490	G248	
G049	6.3484	G099	6.3477	G149	6.3479	G199	6.3484	G249	
G050	6.3482	G100	6.3442	G150	6.3462	G200	6.3470	G250	

Comments

Average weight per overcoated particle from combined results of 2 independent measurements (W09081401 and W09081402).

Dixie Barker
Operator

8-28-09
Date

Appendix B : Particle diameter, weight and volume

To measure particle diameter, particles are placed in a tray in a single layer. A microscope system is set up to obtain a shadow image of each particle in the tray. A series of image frames are recorded to cover the area of the tray in a tiled array. The images are saved on a server for subsequent processing to extract the edge coordinates at multiple points around the perimeter. The mean diameter is then calculated from the edge coordinates. DRF-10A shows the distribution of the mean diameter measured on each particle and calculates the average and standard deviation for the entire sample.

Average particle envelope volume is measured on a sample of a few thousand particles using a mercury porosimeter. Particles are placed in an evacuated cell, which is back-filled with mercury. Pressure is applied to force the mercury into the interparticle void space until each particle is individually enveloped by mercury. The weight of mercury displaced by the particles is then measured and a total particle envelope volume is calculated. The number of particles in the sample is calculated from the sample weight divided by the average particle weight. Riffling five representative random samples, then weighing and counting each sample, is used to determine average particle weight. Average envelope volume per particle is calculated by dividing total particle envelope volume by the number of particles in the sample. DRF-22 shows the results of the particle weight analysis and DRF-31 reports the average particle envelope volume, as well as the envelope density and open porosity. The open porosity of a sample of particles is defined as the total open pore volume of the sample divided by the total surface area of the sample. Open pore volume is determined by measuring the mercury intrusion into the sample over a specified pressure range, normally between 250 and 10,000 psia. Surface area is approximated by calculating the average particle diameter from the envelope volume of the sample and the number of particles in the sample (assuming each particle is a perfect sphere).

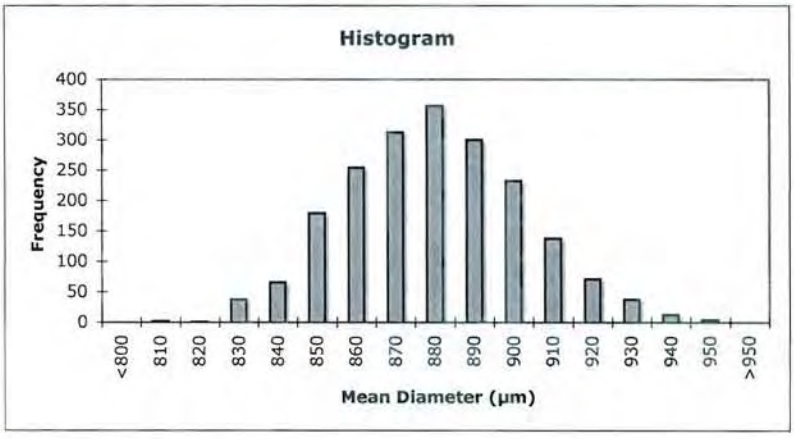
Data Report Form DRF-10A: Measurement of Particle Diameter

Procedure:	AGR-CHAR-DAM-10 Rev. 2
Operator:	Andrew K. Kercher
Folder name containing images:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P08111001\
Sample ID:	LEU06-B01
Sample Description:	AGR-2 UCO Variant 1, G73J-14-93074A
Folder name containing processed data:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P08111001_output\

Number of particles analyzed:	2002
Mean of the average diameter of each particle (μm):	874.7
Standard deviation in the average diameter of each particle (μm):	22

Distribution of the average particle diameter (top binned)

Mean Diameter (μm)	*Frequency*
<800	0
810	2
820	1
830	37
840	66
850	179
860	254
870	313
880	356
890	300
900	232
910	137
920	71
930	37
940	13
950	4
>950	0



Andrew K. Kercher
Operator

November 12, 2008
Date

Data Report Form DRF-22: Estimation of Average Particle Weight

Procedure:	AGR-CHAR-DAM-22 Rev. 1
Operator:	Dixie Barker
Particle Lot ID:	LEU06-C01
Particle Lot Description:	AGR-2 UCO Variant 1, G73J-14-93074A
Filename:	\\mc-agr\AGR\ParticleWeight\W08102001_DRF22R1.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Weight of particles (g):	0.1808	0.2720	0.3211	0.2699	0.2992
Number of particles:	175	262	310	260	289
Average weight/particle (g):	1.033E-03	1.038E-03	1.036E-03	1.038E-03	1.035E-03

Mean average weight/particle (g):	1.036E-03
Standard error in mean average weight/particle (g):	9.40E-07

Dixie Barker
Operator

10-20-08
Date

Data Report Form DRF-31: Measurement of Open Porosity using a Mercury Porosimeter

Procedure:	AGR-CHAR-DAM-31 Rev. 1
Operator:	S. D. Nunn
Coated particle batch ID:	LEU06-B01
Batch Description:	AGR-2 UCO Variant, G73J-14-93074A
Thermocouple Expiration Date:	5/15/09
Penetrometer Expiration Date:	7/10/09
Completed DRF Filename:	\\mc-agr\AGR\Porosimeter\S08120401\S08120401_DRF31R1.xls

Mean average weight/particle (g):	1.04E-03
Standard error in mean average weight/particle (g):	9.40E-07

Weight of particles (g):	3.8494
Approximate number of particles:	3716
Uncertainty in number of particles:	3
Total envelope volume of sample (cc):	1.284
Average envelope volume/particle (cc):	3.46E-04
Sample envelope density (g/cc):	2.998

Average particle diameter (microns):	8.71E+02
Average surface area/particle (cm2):	2.38E-02
Total sample surface area (cm2):	8.85E+01
Intruded mercury volume from 250-10,000 psia (cc):	1.90E-03
Open porosity (ml/m2):	2.15E-01

Comments
Sample LEU06-B01 was used after particle size and shape analysis was complete because LEU06-D01 was not available.

S. D. Nunn
Operator

12/4/08
Date

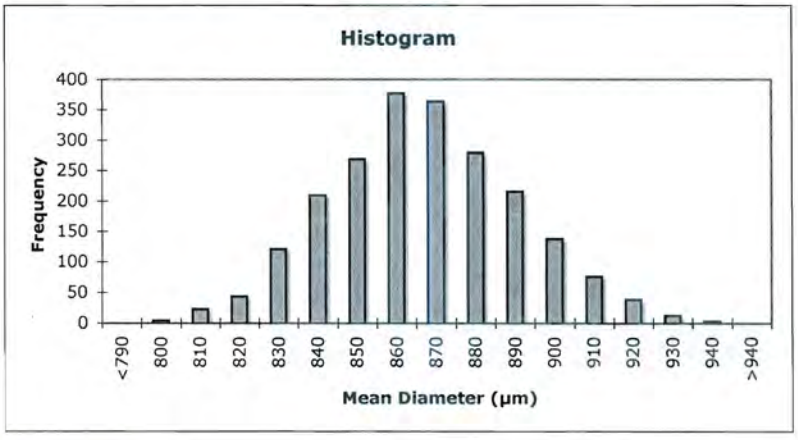
Data Report Form DRF-10A: Measurement of Particle Diameter

Procedure:	AGR-CHAR-DAM-10 Rev. 2
Operator:	Andrew K. Kercher
Folder name containing images:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09010901\
Sample ID:	LEU07-B01
Sample Description:	AGR-2 UCO Baseline, from G73J-14-93072A
Folder name containing processed data:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09010901_output\

Number of particles analyzed:	2174
Mean of the average diameter of each particle (μm):	861.8
Standard deviation in the average diameter of each particle (μm):	24

Distribution of the average particle diameter (top binned)

Mean Diameter (μm)	*Frequency*
<790	0
800	4
810	23
820	44
830	121
840	209
850	269
860	377
870	364
880	279
890	216
900	138
910	76
920	39
930	12
940	3
>940	0



Andrew K. Kercher
Operator

January 12, 2009
Date

Data Report Form DRF-22: Estimation of Average Particle Weight

Procedure:	AGR-CHAR-DAM-22 Rev. 1
Operator:	Dixie Barker
Particle Lot ID:	LEU07
Particle Lot Description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\ParticleWeight\W09010801_DRF22R1.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Weight of particles (g):	0.1174	0.1920	0.2865	0.3047	0.2650
Number of particles:	118	191	284	303	265
Average weight/particle (g):	9.949E-04	1.005E-03	1.009E-03	1.006E-03	1.000E-03

Mean average weight/particle (g):	1.003E-03
Standard error in mean average weight/particle (g):	2.45E-06

Dixie Barker
Operator

1-8-07
Date

Data Report Form DRF-22: Estimation of Average Particle Weight

Procedure:	AGR-CHAR-DAM-22 Rev. 1
Operator:	Dixie Barker
Particle Lot ID:	LEU07
Particle Lot Description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\ParticleWeight\W09011403_DRF22R1.xls

	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Weight of particles (g):	0.2836	0.1488	0.1596	0.1329	0.1461
Number of particles:	282	148	160	132	145
Average weight/particle (g):	1.006E-03	1.005E-03	9.975E-04	1.007E-03	1.008E-03

Mean average weight/particle (g):	1.005E-03
Standard error in mean average weight/particle (g):	1.82E-06

Dixie Barker
Operator

1-14-09
Date

Data Report Form DRF-31: Measurement of Open Porosity using a Mercury Porosimeter

Procedure:	AGR-CHAR-DAM-31 Rev. 1
Operator:	S. D. Nunn
Coated particle batch ID:	LEU07-D01
Batch Description:	AGR-2 UCO Baseline, from G73J-14-93072A
Thermocouple Expiration Date:	5/15/09
Penetrometer Expiration Date:	7/10/09
Completed DRF Filename:	\\mc-agr\AGR\Porosimeter\S09012201\S09012201_DRF31R1.xls

Mean average weight/particle (g):	1.004E-03
Standard error in mean average weight/particle (g):	1.5E-06

Weight of particles (g):	3.9258
Approximate number of particles:	3910
Uncertainty in number of particles:	6
Total envelope volume of sample (cc):	1.285
Average envelope volume/particle (cc):	3.29E-04
Sample envelope density (g/cc):	3.055

Average particle diameter (microns):	8.56E+02
Average surface area/particle (cm2):	2.30E-02
Total sample surface area (cm2):	9.01E+01
Intruded mercury volume from 250-10,000 psia (cc):	3.60E-03
Open porosity (ml/m2):	4.00E-01

Comments
Particle weight from combined results of 2 independent measurements (W09010801 and W09011403).

S. D. Nunn — Operator

1/22/09 — Date

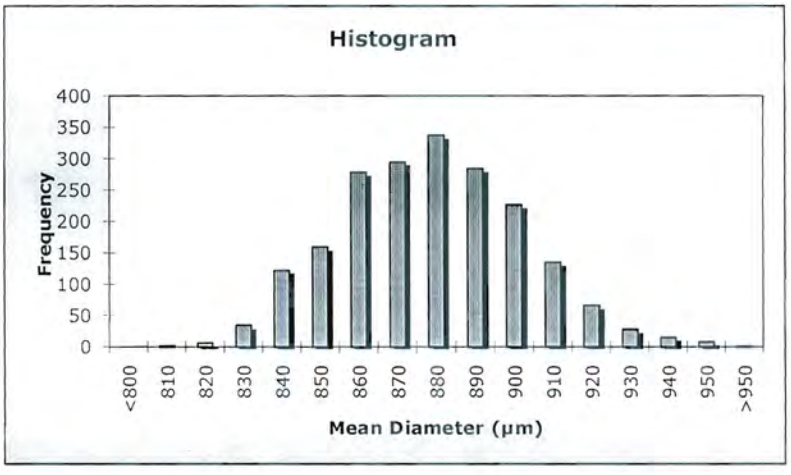
Data Report Form DRF-10A: Measurement of Particle Diameter

Procedure:	AGR-CHAR-DAM-10 Rev. 2
Operator:	Andrew K. Kercher
Folder name containing images:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09051401\
Sample ID:	LEU09-B01
Sample Description:	AGR-2 UCO Variant, from G73J-14-93073A
Folder name containing processed data:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09051401_output\

Number of particles analyzed:	2003
Mean of the average diameter of each particle (μm)	873.2
Standard deviation in the average diameter of each particle (μm)	23

Distribution of the average particle diameter (top binned)

Mean Diameter (μm)	*Frequency*
<800	0
810	2
820	7
830	35
840	122
850	160
860	279
870	295
880	338
890	285
900	227
910	135
920	66
930	28
940	15
950	8
>950	1



Andrew K. Kercher
Operator

May 15, 2009
Date

Data Report Form DRF-22: Estimation of Average Particle Weight

Procedure:	AGR-CHAR-DAM-22 Rev. 1
Operator:	Dixie Barker
Particle Lot ID:	LEU09
Particle Lot Description:	AGR-2 UCO Variant, from G73J-14-93073A
Filename:	\\mc-agr\AGR\ParticleWeight\W09050701_DRF22R1.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Weight of particles (g):	0.1555	0.1661	0.1718	0.1616	0.1708
Number of particles:	151	161	166	156	166
Average weight/particle (g):	1.030E-03	1.032E-03	1.035E-03	1.036E-03	1.029E-03

Mean average weight/particle (g):	1.032E-03
Standard error in mean average weight/particle (g):	1.38E-06

Dixie Barker
Operator

6-3-09
Date

Data Report Form DRF-31: Measurement of Open Porosity using a Mercury Porosimeter

Procedure:	AGR-CHAR-DAM-31 Rev. 1
Operator:	S. D. Nunn
Coated particle batch ID:	LEU09-D01
Batch Description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Thermocouple Expiration Date:	4/2/10
Penetrometer Expiration Date:	7/10/09
Completed DRF Filename:	\\mc-agr\AGR\Porosimeter\S09070801\S09070801_DRF31R1.xls

Mean average weight/particle (g):	1.03E-03
Standard error in mean average weight/particle (g):	1.38E-06

Weight of particles (g):	3.9115
Approximate number of particles:	3790
Uncertainty in number of particles:	5
Total envelope volume of sample (cc):	1.300
Average envelope volume/particle (cc):	3.43E-04
Sample envelope density (g/cc):	3.009

Average particle diameter (microns):	8.69E+02
Average surface area/particle (cm2):	2.37E-02
Total sample surface area (cm2):	8.98E+01
Intruded mercury volume from 250-10,000 psia (cc):	2.10E-03
Open porosity (ml/m2):	2.34E-01

Comments

S.D. Nunn — Operator

7/8/09 — Date

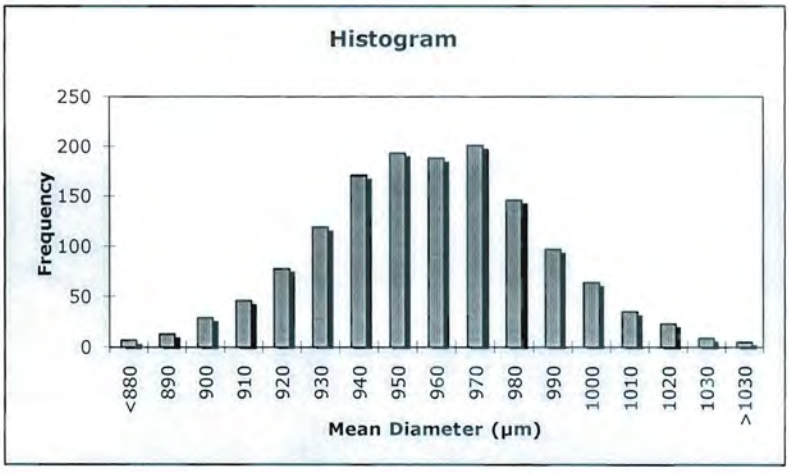
Data Report Form DRF-10A: Measurement of Particle Diameter

Procedure:	AGR-CHAR-DAM-10 Rev. 2
Operator:	Andrew K. Kercher
Folder name containing images:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09072201\
Sample ID:	LEU11-B01
Sample Description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Folder name containing processed data:	\\mc-agr\AGR\ImageProcessing\Completed_Shadow\P09072201_output\

Number of particles analyzed:	1424
Mean of the average diameter of each particle (μm)	953.0
Standard deviation in the average diameter of each particle (μm):	28

Distribution of the average particle diameter (top binned)

Mean Diameter (μm)	*Frequency*
<880	7
890	13
900	29
910	46
920	78
930	119
940	171
950	193
960	188
970	201
980	146
990	97
1000	64
1010	35
1020	23
1030	9
>1030	5



Andrew K. Kercher — Operator

August 3, 2009 — Date

Data Report Form DRF-22: Estimation of Average Particle Weight

Procedure:	AGR-CHAR-DAM-22 Rev. 1
Operator:	Dixie Barker
Particle Lot ID:	LEU11
Particle Lot Description:	AGR-2 B&W UO2 fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\ParticleWeight\W09060301_DRF22R1.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Weight of particles (g):	0.2440	0.2065	0.1338	0.1263	0.1288
Number of particles:	167	141	92	86	88
Average weight/particle (g):	1.461E-03	1.465E-03	1.454E-03	1.469E-03	1.464E-03

Mean average weight/particle (g):	1.462E-03
Standard error in mean average weight/particle (g):	2.36E-06

Dixie Barker
Operator

6-3-09
Date

Data Report Form DRF-31: Measurement of Open Porosity using a Mercury Porosimeter

Procedure:	AGR-CHAR-DAM-31 Rev. 1
Operator:	S. D. Nunn
Coated particle batch ID:	LEU11-D01
Batch Description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Thermocouple Expiration Date:	4/2/10
Penetrometer Expiration Date:	7/10/09
Completed DRF Filename:	\\mc-agr\AGR\Porosimeter\S09070802\S09070802_DRF31R1.xls

Mean average weight/particle (g):	1.46E-03
Standard error in mean average weight/particle (g):	2.36E-06

Weight of particles (g):	3.8057
Approximate number of particles:	2603
Uncertainty in number of particles:	4
Total envelope volume of sample (cc):	1.157
Average envelope volume/particle (cc):	4.45E-04
Sample envelope density (g/cc):	3.288

Average particle diameter (microns):	9.47E+02
Average surface area/particle (cm2):	2.82E-02
Total sample surface area (cm2):	7.33E+01
Intruded mercury volume from 250-10,000 psia (cc):	1.20E-03
Open porosity (ml/m2):	1.64E-01

Comments

S. D. Nunn
Operator

7/8/09
Date

Appendix C : Particle and compact uranium loading

To measure the average uranium loading in the fuel particles, particles are heated at 900°C in air to burn off the OPyC. The residual SiC-coated particles are milled to a fine powder, exposing the uranium in the kernels. The powder is heated in air at 750°C to burn off the remaining pyrocarbon from the IPyC and buffer coating layers and to oxidize the uranium to U_3O_8. The residue is leached with concentrated nitric acid to dissolve the uranium oxide. The nitric acid leachate is sent to an independent analytical chemistry laboratory for measurement of the total uranium content using the Davies-Gray titration method. The number of particles in the sample is calculated from the sample weight divided by the average particle weight, and the total uranium in the sample is divided by the number of particles in the sample to get an average uranium loading per particle. DRF-35 shows the results of this analysis on three samples and calculates a mean and standard deviation from these three analyses.

To measure the average uranium loading in the fuel compacts, a compact is heated at 900°C in air to burn off compact matrix and the OPyC. The residual SiC-coated particles are milled to a fine powder, exposing the uranium in the kernels. The powder is heated in air at 750°C to burn off the remaining carbon from the IPyC and buffer coating layers and to oxidize the uranium to U_3O_8. The residue is leached with concentrated nitric acid to dissolve the uranium oxide. The nitric acid leachate is diluted and sent to an independent analytical chemistry laboratory for measurement of the total uranium content using the Davies-Gray titration method. DRF-25 shows the results of this analysis on six compacts and calculates a mean and standard deviation from these six analyses.

Data Report Form DRF-35: Fuel Particle Uranium Loading

Procedure:	AGR-CHAR-DAM-35 Rev. 0
Operator:	Fred Montgomery
Particle lot ID:	LEU-06
Particle lot description:	AGR-2 UCO Variant, from G73J-14-93074A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU06_DRF35R0.xls

Mean average weight per particle (g):	1.036E-03
Standard error in mean average weight per particle (g):	9.4E-07

	Sample 1		Sample 2		Sample 3	
	Leach 1	Leach 2	Leach 1	Leach 2	Leach 1	Leach 2
Particle sample ID:	LEU06-E01		LEU06-F01		LEU06-G01	
Weight of particles:	4.0109		3.9200		3.8813	
Approximate number of particles:	3872		3784		3746	
Uncertainty in number of particles:	4		3		3	
Acid leach sample ID:	U08122301	U08122901	U08122302	U08122902	U08122303	U08122903
Radiochemical laboratory analysis number:	1585-001	1585-004	1585-002	1585-005	1585-003	1585-006
Weight U in leach (mg):	1534	0.059	1488	0.041	1485	0.027
Uncertainty in weight U in leach (mg):	6	0.00591	6	0.00406	6	0.00267
Total weight U in sample (mg):	1534		1488		1485	
Average weight U per particle (mg):	0.3963		0.3932		0.3963	
Uncertainty in average weight U per particle (mg):	0.0016		0.0016		0.0016	

Mean average uranium loading per particle (g):	3.953E-04
Standard error in mean average uranium loading per particle (g):	1.0E-06

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration. Leach 1 was titrated 2 times and averaged. Davies-Gray Initial known U recovery: 100.30%; final known U recovery 100.50% Blind titration U recovery 100.13%. Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09. Checked against RMAL1585 official results by FCM on 3/06/2009.

Fred C. Montgomery
Operator

10-19-2009
Date

Data Report Form DRF-25: Fuel Compact Mean Uranium Loading

Procedure:	AGR-CHAR-DAM-25 Rev. 2
Operator:	Fred Montgomery
Compact lot ID:	LEU06-OP1-Z
Compact lot description:	AGR-2 UCO Variant fuel, from G73J-14-93074A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU06-OP1-Z_DRF25R2.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Compact ID number:	Z007	Z054	Z064	Z107	Z110	Z135
First Leach						
Sample tube ID number:	U09022701	U09022702	U09022703	U09022704	U09022705	U09022706
Radiochemical laboratory analysis number:	1727-001	1727-002	1727-003	1727-004	1727-005	1727-006
Weight U in leach (g):	1.254	1.256	1.260	1.258	1.255	1.255
Uncertainty in weight U in leach (g):	0.005	0.005	0.005	0.005	0.005	0.005
Second Leach						
Sample tube ID number:	U09030201	U09030202	U09030203	U09030204	U09030205	U09030206
Radiochemical laboratory analysis number:	1727-007	1727-008	1727-009	1727-010	1727-011	1727-012
Weight U in leach (g):	4.60E-05	6.34E-05	6.70E-05	3.71E-05	5.61E-05	3.81E-05
Uncertainty in weight U in leach (g):	4.60E-06	6.34E-06	6.70E-06	3.71E-06	5.61E-06	3.81E-06
Total Measured U						
Weight U in compact (g):	1.254	1.256	1.260	1.258	1.255	1.255
Uncertainty in weight U in compact (g):	0.005	0.005	0.005	0.005	0.005	0.005

Mean uranium loading (gU/compact):	1.256
Standard deviation in mean uranium loading (gU/compact):	0.002

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration. Davies gray: initial known U recovery = 100.26%; final known U recovery= 100.4%; blind titration U recovery= 100.07%. Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09. Average U-235 enrichment: 14.00±0.04 wt.% Data checked against official results of analyses for RMAL1727 on 5/26/2009 by FCM

Fred C. Montgomery
Operator

10-19-2009
Date

Data Report Form DRF-35: Fuel Particle Uranium Loading

Procedure:	AGR-CHAR-DAM-35 Rev. 0
Operator:	Fred Montgomery
Particle lot ID:	LEU07
Particle lot description:	AGR-2 UCO Baseline, from G73J-14-93072A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU07_DRF35R0.xls

Mean average weight per particle (g):	1.004E-03
Standard error in mean average weight per particle (g):	1.5E-06

	Sample 1		Sample 2		Sample 3	
	Leach 1	Leach 2	Leach 1	Leach 2	Leach 1	Leach 2
Particle sample ID:	LEU07-E01		LEU07-F01		LEU07-B01	
Weight of particles:	3.8098		3.9149		4.0143	
Approximate number of particles:	3795		3899		3998	
Uncertainty in number of particles:	6		6		6	
Acid leach sample ID:	U09012101	U09012201	U09012102	U09012202	U09012104	U09012204
Radiochemical laboratory analysis number:	1658-001	1658-005	1658-002	1658-006	1658-004	1658-008
Weight U in leach (mg):	1496	0.073	1529	0.360	1569	0.370
Uncertainty in weight U in leach (mg):	6.0	0.0073	6.1	0.036	6.3	0.037
Total weight U in sample (mg):	1496		1529		1569	
Average weight U per particle (mg):	0.3943		0.3922		0.3924	
Uncertainty in average weight U per particle (mg):	0.0017		0.0017		0.0017	

Mean average uranium loading per particle (g):	3.930E-04
Standard error in mean average uranium loading per particle (g):	6.6E-07

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration. A small amount of the crushed particle residue was lost during analysis of LEU07-G01 while removing the tape from the spex mill bottle. LEU07-B01 was analyzed in place of LEU07-G01 as sample #3. Particle weight from combined results of 2 independent measurements (W09010801 and W09011403). Davies-Gray Initial known U recovery: 100.60%; final known U recovery 100.20% Blind titration U recovery 100.4%. Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09. Data checked against official results of analyses for RMAL1658 on 5/26/2009 by FCM

Fred C. Montgomery
Operator

10-19-2009
Date

Data Report Form DRF-25: Fuel Compact Mean Uranium Loading

Procedure:	AGR-CHAR-DAM-25 Rev. 2
Operator:	Montgomery
Compact lot ID:	LEU07-OP1-Z
Compact lot description:	AGR-2 UCO Baseline fuel, from G73J-14-93072A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU07-OP1-Z_DRF25R2.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Compact ID number:	Z057	Z154	Z096	Z090	Z120	Z153
First Leach						
Sample tube ID number:	U09042001	U09042002	U09042003	U09042004	U09042005	U09042006
Radiochemical laboratory analysis number:	1874-001	1874-002	1874-003	1874-004	1874-005	1874-006
Weight U in leach (g):	1.251	1.255	1.242	1.253	1.250	1.254
Uncertainty in weight U in leach (g):	0.005	0.005	0.005	0.005	0.005	0.005
Second Leach						
Sample tube ID number:	U09042101	U09042102	U09042103	U09042104	U09042105	U09042106
Radiochemical laboratory analysis number:	1874-007	1874-008	1874-009	1874-010	1874-011	1874-012
Weight U in leach (g):	3.05E-04	2.88E-04	4.13E-04	2.94E-04	4.86E-04	3.80E-04
Uncertainty in weight U in leach (g):	3.05E-05	2.88E-05	4.13E-05	2.94E-05	4.86E-05	3.80E-05
Total Measured U						
Weight U in compact (g):	1.251	1.255	1.242	1.253	1.251	1.254
Uncertainty in weight U in compact (g):	0.005	0.005	0.005	0.005	0.005	0.005

Mean uranium loading (gU/compact):	1.251
Standard deviation in mean uranium loading (gU/compact):	0.005

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration.
Davies-Gray Initial known U recovery: 100.25%; final known U recovery 100.18% Blind titration U recovery 100.39%.
Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09.
wt. % U235 enrichment: sample 1 = 14.542: sample 2 = 14.529; sample 3 = 14.533; sample 4 = 14.529; sample 5 = 14.501; sample 6 = 14.504
U data check with official results of analysies for RMAL1874 by FCM on 5/26/2009

Fred C. Montgomery — Operator

10-19-2009 — Date

Data Report Form DRF-35: Fuel Particle Uranium Loading

Procedure:	AGR-CHAR-DAM-35 Rev. 0
Operator:	Fred Montgomery
Particle lot ID:	LEU09
Particle lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU09_DRF35R0.xls

Mean average weight per particle (g):	1.032E-03
Standard error in mean average weight per particle (g):	1.4E-06

	Sample 1		Sample 2		Sample 3	
	Leach 1	Leach 2	Leach 1	Leach 2	Leach 1	Leach 2
Particle sample ID:	LEU09-E01		LEU09-F01		LEU09-G01	
Weight of particles:	4.0611		4.0691		3.9767	
Approximate number of particles:	3935		3943		3853	
Uncertainty in number of particles:	5		5		5	
Acid leach sample ID:	U09052001	U09052201	U09052002	U09052202	U09052003	U09052203
Radiochemical laboratory analysis number:	1937-001	1939-007	1937-002	1939-008	1937-003	1939-009
Weight U in leach (mg):	1557	1.744	1558	0.300	1533	0.536
Uncertainty in weight U in leach (mg):	6	0.174	6.2	0.030	6.1	0.054
Total weight U in sample (mg):	1559		1558		1533	
Average weight U per particle (mg):	0.3962		0.3951		0.3979	
Uncertainty in average weight U per particle (mg):	0.0017		0.0017		0.0017	

Mean average uranium loading per particle (g):	3.964E-04
Standard error in mean average uranium loading per particle (g):	8.1E-07

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration. Davies-Gray: initial known U recovery = 100.66%; final known U recovery=100.87%; blind titration U recovery=100.33% Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09. Data checked by FCM against official results of analyses for RMAL1937 on 6/19/2009 and against RMAL1939 on 7/20/2009

Fred C. Montgomery
Operator

10-19-2009
Date

Data Report Form DRF-25: Fuel Compact Mean Uranium Loading

Procedure:	AGR-CHAR-DAM-25 Rev. 2
Operator:	Montgomery
Compact lot ID:	LEU09-OP2-Z
Compact lot description:	AGR-2 UCO Variant Fuel, from G73J-14-93073A
Filename:	\\mc-agr\AGR\UraniumLoading\LEU09-OP2-Z_DRF25R2.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Compact ID number:	Z076	Z145	Z064	Z045	Z148	Z163
First Leach						
Sample tube ID number:	U09090101	U09090102	U09090103	U09090104	U09090105	U09090106
Radiochemical laboratory analysis number:	2208-001	2208-002	2208-003	2208-004	2208-005	2208-006
Weight U in leach (g):	1.255	1.261	1.258	1.251	1.258	1.258
Uncertainty in weight U in leach (g):	0.005	0.005	0.005	0.005	0.005	0.005
Second Leach						
Sample tube ID number:	U09090301	U09090302	U09090303	U09090304	U09090305	U09090306
Radiochemical laboratory analysis number:	2208-007	2208-008	2208-009	2208-010	2208-011	2208-012
Weight U in leach (g):	1.36E-05	1.39E-05	1.27E-05	1.00E-05	8.86E-06	6.06E-06
Uncertainty in weight U in leach (g):	1.36E-06	1.39E-06	1.27E-06	1.00E-06	8.86E-07	6.06E-07
Total Measured U						
Weight U in compact (g):	1.255	1.261	1.258	1.251	1.258	1.258
Uncertainty in weight U in compact (g):	0.005	0.005	0.005	0.005	0.005	0.005

Mean uranium loading (gU/compact):	1.257
Standard deviation in mean uranium loading (gU/compact):	0.003

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS due to low U concentration.
Davies Gray: Initial known U recovery = 100.37%; Final Known U recovery = 100.13%; Blind titration U recovery = 100.19%
Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09.
Isotopic composition (wt%): 234U=0.148±0.001; 235U=13.993±0.017; 236U=0.0504±0.0004; 238U=85.809±0.018
Data checked against official results of analyses for RMAL2208 by FCM on 11/12/2009

Fred C. Montgomery
Operator

11-17-2009
Date

Data Report Form DRF-35: Fuel Particle Uranium Loading

Procedure:	AGR-CHAR-DAM-35 Rev. 0
Operator:	Fred Montgomery
Particle lot ID:	LEU11
Particle lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\UraniumLoading\LEU11_DRF35R0.xls

Mean average weight per particle (g):	1.462E-03
Standard error in mean average weight per particle (g):	2.4E-06

	Sample 1		Sample 2		Sample 3	
	Leach 1	Leach 2	Leach 1	Leach 2	Leach 1	Leach 2
Particle sample ID:	LEU11-E01		LEU11-F01		LEU11-G01	
Weight of particles:	4.1447		4.1672		3.9160	
Approximate number of particles:	2834		2849		2678	
Uncertainty in number of particles:	5		5		4	
Acid leach sample ID:	U09060901	U09061201	U09060902	U09061202	U09060903	U09061203
Radiochemical laboratory analysis number:	1998-001	1999-031	1998-002	1999-032	1998-003	1999-033
Weight U in leach (mg):	1813	0.409	1816	0.620	1710	0.608
Uncertainty in weight U in leach (mg):	7	0.041	7	0.062	7	0.061
Total weight U in sample (mg):	1813		1816		1710	
Average weight U per particle (mg):	0.6399		0.6374		0.6386	
Uncertainty in average weight U per particle (mg):	0.0028		0.0027		0.0028	

Mean average uranium loading per particle (g):	6.386E-04
Standard error in mean average uranium loading per particle (g):	7.0E-07

Comments
Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration. initial known U recovery: 100.50%. Final Known U recovery: 100.32%. Blind titration U recovery: 100.62% Uncertainty in Davies-Gray (0.4%) based on average of measured % recovery data for LEU06,07,08,09. Data checked by FCM against official results of analyses for RMAL1998 and RMAL1999 on 7/20/09

Fred C. Montgomery
Operator

10-19-2009
Date

Data Report Form DRF-25: Fuel Compact Mean Uranium Loading

Procedure:	AGR-CHAR-DAM-25 Rev. 2
Operator:	Montgomery
Compact lot ID:	LEU11-OP2-Z
Compact lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\UraniumLoading\LEU11-OP2-Z_DRF25R2.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Compact ID number:	Z050	Z113	Z110	Z160	Z135	Z151
First Leach						
Sample tube ID number:	U09101501	U09101502	U09101503	U09101504	U09101505	U09101506
Radiochemical laboratory analysis number:	2303-001	2303-002	2303-003	2303-004	2303-005	2303-006
Weight U in leach (g):	0.997	0.997	0.984	0.986	0.992	1.003
Uncertainty in weight U in leach (g):	0.007	0.007	0.007	0.007	0.007	0.007
Second Leach						
Sample tube ID number:	U09101601	U09101602	U09101603	U09101604	U09101605	U09101606
Radiochemical laboratory analysis number:	2303-007	2303-008	2308-009	2308-010	2308-011	2308-012
Weight U in leach (g):	1.51E-04	3.48E-04	4.59E-04	1.10E-03	2.16E-04	5.23E-04
Uncertainty in weight U in leach (g):	1.51E-05	3.48E-05	4.59E-05	1.10E-04	2.16E-05	5.23E-05
Total Measured U						
Weight U in compact (g):	0.997	0.998	0.985	0.987	0.992	1.004
Uncertainty in weight U in compact (g):	0.007	0.007	0.007	0.007	0.007	0.007

Mean uranium loading (gU/compact):	0.994
Standard deviation in mean uranium loading (gU/compact):	0.007

Comments

Leach 1 was analyzed by Davies-Gray titration method. Leach 2 was analyzed by ICP-MS, due to low U concentration.
wt. % U235 enrichment: sample 1 =9.63; sample 2 = 9.62; sample 3 = 9.62; sample 4 = 9.62; sample 5 = 9.62; sample 6 = 9.62.
Davies gray: initial known U recovery = 100.48%; final known U recovery = 100.69%; blind titration U recovery = 100.92%
Uncertainty in Davies-Gray (0.7%) based on average of measured % recovery data for this analysis.
Checked against official results of analyses for RMAL2303 by FCM on 11/19/2009

Fred C. Montgomery
Operator

3/10/2010
Date

Data Report Form DRF-25: Fuel Compact Mean Uranium Loading

Procedure:	AGR-CHAR-DAM-25 Rev. 2
Operator:	Montgomery
Compact lot ID:	LEU11-OP2-Z
Compact lot description:	AGR-2 B&W UO2 Fuel, from G73H-10-93085B
Filename:	\\mc-agr\AGR\UraniumLoading\LEU11-OP2-Z_Reanalysis_DRF25R2.xls

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Compact ID number:	Z050	Z113	Z110	Z160	Z135	Z151
First Leach						
Sample tube ID number:	U09101501	U09101502	U09101503	U09101504	U09101505	U09101506
Radiochemical laboratory analysis number:	2382-001	2382-002	2382-003	2382-004	2382-005	2382-006
Weight U in leach (g):	0.994	0.995	0.984	0.983	0.992	0.998
Uncertainty in weight U in leach (g):	0.007	0.007	0.007	0.007	0.007	0.007
Second Leach						
Sample tube ID number:	U09101601	U09101602	U09101603	U09101604	U09101605	U09101606
Radiochemical laboratory analysis number:	2303-007	2303-008	2308-009	2308-010	2308-011	2308-012
Weight U in leach (g):	1.51E-04	3.48E-04	4.59E-04	1.10E-03	2.16E-04	5.23E-04
Uncertainty in weight U in leach (g):	1.51E-05	3.48E-05	4.59E-05	1.10E-04	2.16E-05	5.23E-05
Total Measured U						
Weight U in compact (g):	0.995	0.995	0.984	0.984	0.992	0.998
Uncertainty in weight U in compact (g):	0.007	0.007	0.007	0.007	0.007	0.007

Mean uranium loading (gU/compact):	0.991
Standard deviation in mean uranium loading (gU/compact):	0.006

Comments

Analysis of leach solutions was repeated because of higher than normal uncertaintyin first analysis.
Leach 1 was analyzed by Davies-Gray titration method. D.G. data from 2nd analysis. Leach 2 was analyzed by ICP-MS, due to low U concentration.
wt. % U235 from initial Davies-Gray titration samples: sample 1 = 9.63; sample 2 = 9.62; sample 3 = 9.62; sample 4 = 9.62; sample 5 = 9.62; sample 6 = 9.62.
Davies gray: initial known U recovery = 100.49%; final known U recovery = 100.66%; blind titration U recovery = 100.84%
Uncertainty in Davies-Gray (0.7%) based on average of measured % recovery data for this analysis.
Checked against official results of analyses for RMAL2382 by FCM on 11/19/2009

Fred C. Montgomery
Operator

3-10-2010
Date