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- ADVANCED PROFESSIONAL TRAINEES**

This document consists of 9  
pages and 0 figures.  
No. 3 of 3 copies, Series 4

Ashcraft, E. B. (Westinghouse) Div. - Power Pile Section - Chemical

Present Research: Purity of materials, effects of radiation, shielding, processing and recovery.

Classification Cancelled

Training Courses: Pile Neutron Physics  
Radiation Chemistry and Physics  
Chemistry of Heavy Elements  
Future:

Or Changed To

By Authority Of Doc

By EEB

Date AUG 24 1971

Principles and Practices of Separation Processes

Bendt, P. J. (General Motors) Div. - Physics Section - Young

Present Research: Preliminary calculations on critical size, quantities of metal, breeding gain, doubling time, for a Thorium - U<sup>233</sup> fast pile.

Training Courses: Pile Neutron Physics  
Radiation Physics and Chemistry  
Survey Nuclear Physics  
Quantum Mechanics

Blizard, E. P. (Navy Dept.) Div. - Physics Section -

Present Research: Determination of photo-neutrons from 23 in P-9.

Training Courses: Nuclear Physics Survey (Recorder)  
Experimental Nuclear Physics  
Theoretical Nuclear Physics  
Radiation Chemistry and Physics

Boarts, R. M. (Univ. of Tenn.) Div. - Physics Section - Young

Present Research: Working on heat transfer survey.

Training Courses: Pile Neutron Physics  
Pile Technology  
Radiation Chemistry and Physics  
Nuclear Physics Survey  
Chemistry of the Heavy Elements  
Future:

Principles and Practices of Separation Processes

CLASSIFICATION CANCELLED

J. S. Morgan 1-11-95  
ADD signature

Date

Single rereview of CCRP-declassified documents was authorized by DOE Office of Declassification memo of August 22, 1994.

Buck, J. H. (Socony Vacuum Labs.) Div. - Physics Section - Snell

Present Research: Critical measurements on present pile pilito and design of new lattice to simulate new new pile so that critical measurements can be made for this.

Training Courses: Pile Neutron Physics  
Experimental Nuclear Physics  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics (Audit)  
Pile Technology (Audit)

This document consists of \_\_\_\_\_  
pages and \_\_\_\_\_ figures.  
No. \_\_\_\_\_ of \_\_\_\_\_ copies, Series \_\_\_\_\_

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Campbell, E. C. (Princeton Univ.) Div. - Physics Section - Wollan  
Present Research: Investigation of Resonance Scattering of Cadmium.  
Notes in Pile Physics Course, Dr. Soodak.  
Training Courses: Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Pile Neutron Physics  
Pile Technology

Clark, H. M. (Rensselaer Poly Inst.) Div. - Chemistry Section - Overman  
Present Research: Physical studies of pile-produced radioactive isotopes.  
Preparation of Radioactive Standards.  
Training Courses: Project Survey  
Nuclear Physics Survey  
Radiochemistry  
Pile Neutron Physics  
Experimental Nuclear Physics  
Chemistry of the Heavy Elements  
Quantum Mechanics  
Future:  
Principles and Practices of Separation Processes

Crowley, D. J. (Socony Vacuum Labs.) Div. - Chemical Section - Boyd  
Future Research: Making arrangements to work with Dr. Boyd of the Chemical  
Division on radio-tracer studies involving the use of sulfur.  
Training Courses: Radiochemistry  
Radiation Chemistry and Physics  
Nuclear Physics Survey  
Experimental Nuclear Physics  
Project Survey

Davidson, W. L., Jr. (B. F. Goodrich) Div. - Physics Section - Wollan & Shull  
Future Research: Neutron Diffraction by Crystals.  
Training Courses: Project Survey  
Pile Neutron Physics  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Nuclear Physics Survey

Donelian, K. O. (Kellogg Corp.) Div. - Physics Section - Newson  
Present Research: Pile Control and Instrumentation

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Donelian, K. O. (Continued)

Training Courses: Project Survey  
Pile Neutron Physics  
Radiation Chemistry and Physics  
Experimental Nuclear Physics  
Nuclear Physics Survey  
Pile Technology

Eisenbud, Leonard (Formerly McLaughlin Div. - Tr. School Section - Wigner  
Carr Associates)

Present Research: Theory of Nuclear Collisions

Training Courses: Theoretical Nuclear Physics  
Pile Neutron Physics

Grebe, J. J. (Dow Chemical Co.) Div. - Physics Section -

Present Research: a. Study of heat transfer and motive fluids for each of the various applications of nuclear energy, i. e., rocket, turbojet, single fluid plants and binary fluid power plants.  
b. Study design of inherently self-regulating types of piles and power plant combinations, preferably units containing boiler feed pump, pile, turbine and condenser all in one package serving as breeder, shielded and pressure retainer.  
c. Production of cheap Deuterium.  
d. Recovery of radioactive materials from contaminated water by ion exchange processes.  
e. Recovery of valuable metals by chemical mining.

Future Research: a. Development of unified theory of matter and energy.  
b. Design of a flexible laboratory structure made standard prefabrication elements from foundation to roof.  
c. Design of high efficiency continuous stream Betatron for producing intense x-ray beams, etc.

Training Courses: Pile Neutron Physics  
Radiochemistry  
Experimental Nuclear Physics  
Radiation Chemistry and Physics  
Project Survey  
Quantum Mechanics  
Theoretical Nuclear Physics

Haynes, S. K. (Vanderbilt Univ.) Div. - Physics Section - I

Present Research: Working with Magnetic Lens  $\beta$ -ray spectrograph. Will probably start on decay scheme of  $Ga^{72}$  as soon as spectrograph is running.

Training Courses: Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Project Survey  
Pile Neutron Physics



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Hill, J. E.

(Westinghouse)

Div. - Physics

Section - Young

- Present Research:
- Work has just been completed on the design and construction of a new "thermal column" for the pile. This unit will be installed about Dec. 10, 1946. After installation, the thermal column will be used in conjunction with a 350 gram 96%  $U^{235}$  source, to measure the age of fission neutrons in Beryllium metal and Beryllium oxide.
  - Study is in progress, at Dr. Wigner's suggestion, to determine the advisability of experiments for measuring resonance cross sections and the details of resonance absorption curves for neutrons in a number of elements. Work in conjunction with Dr. Roberts.

Training Courses: Pile Neutron Physics  
Radiation Chemistry and Physics  
Experimental Nuclear Physics  
Theoretical Nuclear Physics  
Pile Technology

Hull, D. E.

(Carbide & Carbon)

Div. - Technical

Section - Chemical

Present Research: Literature search and study of the feasibility of a uranium hexafluoride pile. Work on critical masses of  $UF_6 - CH_2$  mixtures at K-25 to be completed probably this week.

Training Courses: Radiation Chemistry and Physics  
Project Survey  
Chemistry of the Heavy Elements  
\*Radio Chemistry  
\*Pile Neutron Physics  
\*Only 3/4 of these attended. Tuesday conflict resolved on day-to-day choice of subjects to be discussed.

Hunter, L. P.

(Westinghouse)

Div. - Power Pile

Section - Office

- Present Research:
- Have built and tested preliminary vibration apparatus for the sheet Al-U alloys now being irradiated at Hanford.
  - Helping Siegel with Beryllium metal measurements.
  - Am designing apparatus to measure thermal conductivity of 25 loaded BeO and graphite as a function of temperature while sample is under irradiation.

Training Courses: Pile Neutron Physics  
Pile Technology  
Experimental Nuclear Physics  
Theoretical Physics  
Radiation Chemistry and Physics

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Kent, J. W.

(California Research Corporation)

Div. - Technical

Section - Chemical

Present Research: Investigation of the reaction between ruthenium tracer and "Hexone" to increase ruthenium decontamination in the 25 process. Survey of the literature on the use of fluorocarbons as possible pile coolants.



Kent, J. W. (Continued)

Training Courses: Pile Neutron Physics  
Radiation Chemistry and Physics  
Pile Technology  
Nuclear Physics Survey  
Experimental Nuclear Physics (until Pile Technology course begins).

Lawroski, S. (Esso Labs.) Div. - Technical Section - I

Present Research: Chemical Process Development, Laboratory and Semi-Works studies on solvent extraction for separation of heavy elements from irradiated materials.

Training Courses: Project Survey  
Pile Technology  
Pile Neutron Physics  
Radiochemistry  
Radiation Chemistry and Physics  
Quantum Mechanics  
Chemistry of the Heavy Elements  
Future:  
Principles and Practices of Separations Processes

MacNille, S. M. (Eastman Kodak) Div. - Physics Section - Newson

Present Research: Design of control equipment for high flux pile.

Training Courses: Pile Neutron Physics  
Pile Technology  
Radiation Chemistry and Physics  
Nuclear Physics Survey  
Experimental Nuclear Physics

MacPherson, H. G. (National Carbon Co.) Div. - Physics Section - Siegel

Present Research: I am working with Siegel in the effect of bombardment on various pile materials, in the Physics Division. Current problems on which I am working are:  
1. Design of a thermal conductivity apparatus for hot lab.  
2. Design of equipment for exposing Beryllium-Uranium Alloy at 800°C in Hanford pile.

Training Courses: Pile Neutron Physics  
Project Survey  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics (part time)  
Experimental Nuclear Physics  
Nuclear Physics Survey  
Pile Technology  
Quantum Mechanics  
Chemistry of the Heavy Elements

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Markham, J. J. (Formerly Brown Univ.) Div. - Physics Section -

Present Research: Theoretical work on the trapping of electrons in ionic crystals.

Training Courses: Pile Neutron Physics  
Pile Technology  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics

Masket, A. V. H. (Naval Research Labs.) Div. - Physics Section - I

Present Research: Engaged in the research on the critical pile problems.

Training Courses: Pile Neutron Physics  
Experimental Nuclear Physics  
Quantum Mechanics  
Pile Technology

Mason, R. C. (Westinghouse) Div. - Physics Section - Young  
Power Pile

Present Research: Since the beginning of the training school I have completed an analysis of the effect of a sudden introduction of steam, and also of a sudden change in cooling gas temperature, in the proposed power pile, for the Power Pile Section. I am now surveying the literature on fission product diffusion, in an attempt to predict the degree of activity on the cooling gas, as well as considering means of removal of fission products for the same section.

Future Research: I expect, in addition to the above, to start soon on some problem in long range pile design under Dr. Young. The exact problem has not yet been decided, but I am interested in comparison of performance of different pile types.

Training Courses: Project Survey  
Pile Neutron Physics  
Experimental Nuclear Physics  
Radiation Chemistry and Physics  
Pile Technology

Matheson, L. A. (Dow Chemical Co.) Div. - Chemistry Section - Tompkins

Present Research: Ion exchange separations. About to start an attempted isotope separation with  $Y^{88}$  &  $Y^{91}$ .

Future Research: May also be interested in power piles or Physics problems.

Training Courses: Project Survey  
Nuclear Physics Survey  
Experimental Nuclear Physics  
Pile Technology  
Radiochemistry

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Menke, J. R.	(Kellogg Corp.)	Div. - Physics	Section - Young
Present Research:	Mineral Resources, Uranium, Thorium, and Costs. (Report issued CLM-JRM-1) Mineral Resources, Beryllium in preparation. Future demand for Electric Energy, two similar pile studies in preparation with economic and engineering viewpoint.		
Training Courses:	Pile Neutron Physics Radiation Chemistry and Physics Nuclear Physics Survey Pile Technology Quantum Mechanics		
Morton, G. A.	(R. C. A. Labs.)	Div. - Physics	Section - Wollan
Present Research:	Investigation of feasibility of measuring recoil velocities in $\alpha$ -ray disintegration. Will continue with the experimental work if the feasibility can be proved.		
Training Courses:	Pile Neutron Physics Pile Technology Radiation Physics and Chemistry Experimental Nuclear Physics Theoretical Nuclear Physics (Auditor) Quantum Mechanics		
Newton, R. F.	(Purdue Univ.)	Div. - Chemistry	Section - Boyd
Present Research:	A study of diffusion of electrolytes, using radioactive ions to determine the diffusion. Most of the studies will be self diffusion.		
Training Courses:	Radiochemistry Project Survey Theoretical Nuclear Physics Experimental Nuclear Physics Radiation Chemistry and Physics (Audit) Chemistry of the Heavier Elements		
Ott, H. O.	(Rensselaer Poly.)	Div. - Chemistry	Section - Stoughton
Present Research:	Heavy isotope problems in pile reactors and absorbers.		
Training Courses:	Radiochemistry Pile Neutron Physics Pile Technology Nuclear Physics Survey Chemistry of Heavy Elements Future: Principles and Practices of Separation Processes		



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Roberts, L. D. (General Electric) Div. - Physics Section - Wollan

Present Research: 1. The rebuilding of the X-10 pile thermal column.  
2. Use of the rebuilt thermal column for the measurement of neutron age in BeO and possible H<sub>2</sub>O.  
3. Upon completion of "2", I will make a study of the line absorption of neutrons in the resonance region using a photoneutron source.

Training Courses: Pile Neutron Physics  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Quantum Mechanics

Siegel, S. (Westinghouse) Div. - Physics Section -

Present Research: Study of Radiation effects on solids. Planning hot lab. for physical measurements, and experiments in pile at low temperatures.

Training Courses: Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Radiation Physics and Chemistry  
Pile Neutron Physics  
Pile Technology

Smith, W. M. Jr. (Kellogg) Div. - Physics Section -

Future Research: Intend to join Dr. Henry Newson.

Training Courses: Pile Technology  
Theoretical Nuclear Physics  
Pile Neutron Physics  
Will sit in occasionally on the following:  
Radiation Chemistry and Physics  
Nuclear Physics Survey  
Experimental Nuclear Physics

Stevens, H. E. (General Electric) Div. - Power Pile Section - Long Range

Present Research: No Research. At present, I am assigned to the "Long Range" Section of the Power Pile Division wherein the theoretical consideration of the Power Pile design are evaluated and investigated. The work consists of extensive calculating, reading and analyzing.

Future Research: At present it appears as though my activities in research will be limited to the age measurement, exponential experiments, critical experiment and test usually conducted on a pile.

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Stevens, H. E. (Continued)

Training Courses: ~~SECRET~~  
Pile Neutron Physics  
Radiation Chemistry and Physics  
Theoretical Nuclear Physics  
Experimental Nuclear Physics  
Pile Technology

Thompson, W. I. (Esso Labs.) Div. - Physics Section - Young

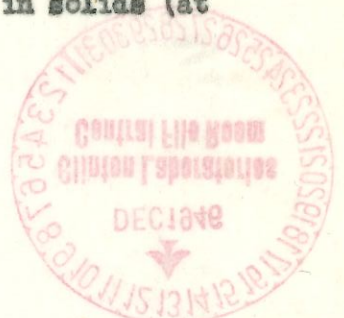
Future Research: Assist with Pile Technology course, economics of new pile designs.

Training Courses: Theoretical Nuclear Physics  
Pile Technology  
Pile Neutron Physics  
Quantum Mechanics

VonderLage, F. C. (Formerly U. S. Navy) Div. - Tr. School Section -

Present Research: Now investigating extension of work on a method of obtaining wave functions and energies in Brillouin Zones in solids (at first on sodium).

Training Courses: Radiation Chemistry and Physics  
Experimental Nuclear Physics (Auditor)  
Theoretical Nuclear Physics (Auditor)  
Pile Neutron Physics  
Pile Technology  
Quantum Mechanics (Auditor)



Weber, A. P. (Kellogg Corporation) Div. - Technical Section -

Future Research: Chemical Process Development as conducted by the Technical Division.

Training Courses: Radiochemistry  
Radiation Chemistry and Physics  
Nuclear Physics Survey  
Chemistry of Heavy Elements  
Pile Technology  
Quantum Mechanics ?  
Future:  
Principles and Practices of Separation Processes

Yanko, W. H. (Monsanto) Div. - Chemistry Section - Boyd

Present Research: Synthesis of Organic Molecules containing carbon 14.

Training Courses: Radiochemistry  
Radiation Chemistry and Physics  
Chemistry of the Heavy Elements  
Project Survey  
Quantum Mechanics  
Future:  
Principles and Practices of Separation Processes

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General Subject	Lecture Topic	Number of Lectures	Suggested Speakers	Importance Rating	Speaker Approached Yet?
Problems in piles	Fission products	1	Way	First	Yes
	Heavy isotopes	1	Stoughton	"	"
	Controls	1	Soodak	"	No
		2	Newson	"	"
	Heat transfer	1	Boarts	"	Yes
		1	Lyon	"	No
	Shielding	1	Morgan	"	"
		1	Friedman	"	"
		1	Libbey	"	"
Certain piles	Hanford pile	1		Survey	No
	Argonne fast pile	1	Zinn	"	Yes
	Los Alamos fast pile and water boiler	1	Morrison	"	"
	Clinton hi-flux pile	1	Weinberg	"	"
		1	Leverett	"	"
	Canadian pile	1	Huffman	"	No
	Power piles	2	McCullough	"	Yes
	Clinton graphite and Argonne heavy water	1		"	No
Engineering items	Pumps	1	Henke and McCullough	Second or term paper	No
	Gas turbines, jets	1	Streid	"	"
	Boilers	1	McCullough	"	"
	Vapor plants	1	Grebe	"	"
	Remote control engineering	1		First	"



General Subject	Lecture Topic	Number of Lectures	Suggested Speakers	Importance Rating	Speaker Approached Yet?
Engineering Items (cont'd)	Heat exchangers	1		Second or term paper	No
	Degassers, dust cleaners, etc.	1		"	"
Miscellaneous	Chemical plants	1	Peterson	Survey	No
	Navy problems	1	Rickover	"	"
	Airplane problems	1	Fairchild	"	"
	Power economics	1	Marshak	"	"
	Atomic costs	1	Thompson	"	"

The box score of the previous tabulations shows:

Classification	No. of Lectures
First importance	27
Survey	17
Second or term paper importance	11
Total	55
Total not of first importance	28

While the present list is only a first impression, it does seem to confirm your suggestion that the survey hour or another hour a week could usefully absorb some of the overflow. Not all of the topics mentioned above should be taken too seriously; presumably a number of these will be omitted, and perhaps a few added, especially if the class members start bringing in some good term paper work.