

(SR/H--820)

E. I. DU PONT DE NEMOURS AND COMPANY

Explosives Department
Atomic Energy Division
Wilmington, Delaware

September 16, 1955

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No. 7 of 13 Topics, Series A

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MINUTES OF TECHNICAL DIVISION STEERING COMMITTEE MEETING
SEPTEMBER 13, 1955 - SAVANNAH RIVER LABORATORY

Committee Members Present

D. F. Babcock
J. W. Croach
Gerhard Dessauer
L. C. Evans
J. W. Morris

V. R. Thayer
M. H. Wahl
C. W. J. Wende
J. C. Woodhouse
Hood Worthington
J. Banick, AED Class Officer

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APPROVALS

Date 2/4/89

The following Studies were approved for the programs outlined in the appendixes:

Study No.	Title	Man Months	From	To
8511	Separations Process and Equipment Demonstration	42	9/1/55	11/30/55
8512	Separations Process Chemistry	55	9/1/55	11/30/55
8513	Separations Engineering Development	42	9/1/55	11/30/55
8517	Separations Process Hazards	3	9/1/55	11/30/55
8521	Hydriside Development	0	9/1/55	11/30/55
8522	Analytical Chemistry Development	29	9/1/55	11/30/55
8523	Waste Handling	8	9/1/55	11/30/55
8527	Recycle Development	2	9/1/55	11/30/55

MASTER

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INFORMATION AND AGREEMENTS REACHED1. Safety

The Laboratory's minor injury frequency for August was 0.47, an increase from 0.36 for July and the highest for the past year. This increase in rate may not indicate a trend because most of the injuries were very minor skin breaks and because peak frequency rates are usually experienced in August. However, the August rate coupled with an observed increase in failures to follow established procedures indicate a need for improving general safety morale. The Laboratory's safety program is being guided accordingly. As a first step, emphasis is being placed on assuring widespread participation in safety programs.

Increased emphasis is being placed on the need for following established procedures for the control and handling of radioactive materials. A member of the Radiation Control Section is now on the Safety Review Committee.

2. The Laboratory had 10 security violations in August, an increase from 6 in July. Technical Information Service has just finished a complete classified document inventory and was unable to locate 6 documents out of many thousands. These misplaced documents account for 6 of the August violations.

Classified documents are now being kept in high-visibility folders throughout the Laboratory. This procedure is aimed at reducing the numbers of security violations resulting from documents left unattended.

3. The first full-size extended surface fuel element assemblies are now being irradiated in a production reactor. These consist of three assemblies containing natural uranium plates and two assemblies containing fuel tubes of enriched uranium-aluminum alloy and thorium target slugs of large diameter.

4. The Laboratory is now starting up the fluid pressure bonding facility. Although plate elements will be used in preliminary work, the objective of this program is to perform crucial experiments as soon as possible to determine the feasibility of cladding tubular elements by this method.

5. The Laboratory will take immediate steps to assure that uranium is stored under proper humidity conditions.

6. Performance tests at TNX have indicated that a large turbo mixer-settler appears to have no advantages over a large pump mixer-settler (an enlarged version of the mixer-settlers in current production use). In addition, the mass transfer performance of the latter was superior. Accordingly, efforts will be concentrated on improving the pump mixer-settler to achieve maximum capacity.

7. The Laboratory has developed a procedure for making plutonium trifluoride precipitates that can be handled readily. This is a step in the direction of eliminating the undesirable dry fluorination operation in the current B-line process. The Laboratory will make recommendations on how this new procedure should be tried on a larger scale.

8. The next Steering Committee meeting will be held on October 11. Tentatively, the following meeting will be held on November 15. Note that this latter date departs from the usual schedule.

9. Attached for information are:

Appendix A - Financial Status

Appendix B - Separations Development Program

Appendix C - Analytical Chemistry Development Program

Appendix D - Technical Division Study Status

TECHNICAL DIVISION


L. C. Evans

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APPENDIX A

FINANCIAL STATUS

Technical Division costs for August were \$766,000 — \$29,000 under the Financial Plan. July costs were \$664,000 — \$124,000 under the Plan. Thus we are \$153,000 under the Plan to date. The AEC has not yet formally approved the FY-1956 Plan sent to them about July 15 and has asked our Budget Section to prepare a revised Plan using actual costs for July and August and making certain other changes.

Possible future increases in development needs have been discussed with the SROO, and it has been agreed that the revised Plan should provide the same total FY-1956 funds for development as were provided in the original Plan. Accordingly, our Budget Section has been requested to apportion our \$153,000 underrun over the remaining 10 months.

Our estimated total for the year is \$9,360,000. This would leave us with an average of \$793,000 per month for the next 10 months. This amount is not considered excessive.

APPENDIX BSEPARATIONS DEVELOPMENT PROGRAM
SEPTEMBER 1 TO NOVEMBER 30, 1955

<u>Study Code</u>	<u>Title</u>	<u>Estimated Man Months</u>
8511	Separations Process and Equipment Demonstration	42
8512	Separations Process Chemistry	55
8513	Separations Engineering Development	42
8517	Separations Process Hazards	3
8521	Hydriside Development	0
8523	Waste Handling	8
8527	Recycle Development	2
		<u>152</u>

PROGRAM

<u>PROGRAM</u>	<u>Estimated Man Months</u>
<u>PUREX</u>	133

- I. Equipment
 - M-S
 - Dissolver
 - Evaporators
 - Pumps
 - Jets
 - In-Line and Close Coupled Analyzers
 - Solvent Recovery
 - Ion Exchange Column
- II. Solvent Extraction Process
- III. Solvent Chemistry
- IV. Auxiliary Processes for Decontamination
- V. Product Finishing
- VI. Waste Handling
- VII. Technical Manual

<u>TRITIUM SEPARATION</u>	14
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- I. Thermal Column
- II. Micro-Electrolysis

<u>THORIUM RECYCLE</u>	3
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<u>U-235 SEPARATIONS</u>	2
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ANALYTICAL CHEMISTRY DEVELOPMENT PROGRAM
SEPTEMBER 1 TO NOVEMBER 30, 1955

	<u>Estimated</u> <u>Man Months</u>
<u>STUDY CODE 8522 - Analytical Chemistry Development</u>	29

PROGRAM

- I. Short-Term 200-Area Studies
 - Close-Coupled Analysis
- II. Long-Term 200-Area Studies
 - In-Line Analysis
 - Activity Measurements
 - Plutonium Chemistry
 - Ion-Exchange Applications
 - Spectroscopy
 - Tritium Analysis
 - "Sealed Tube" Technique
 - Solvent Degradation
- III. 100-Area Studies
 - In-Line Moderator Analysis
- IV. 300-Area Studies
 - Spectroscopic Methods Evaluation
 - Universal Spectrochemical Standard

TECHNICAL DIVISION STUDY STATUSDFW-55-15-9

<u>Study No.</u>	<u>Title</u>	<u>Man Mo.</u>	<u>From</u>	<u>To</u>	<u>Man Mo. Used Against Authoriz.</u>	<u>Total Man Mo. Used FY-1956</u>	<u>Program</u>	<u>Budget</u>
8501	Nondestructive Testing	0	7/1/55	9/30/55	0	0	60% MD 40% MD	2722 2771
8502	300 Area Process Development- Present Components	6	7/1/55	9/30/55	.20	.20	MD	2722
8503	New Fuel Element Fabrication	38	7/1/55	9/30/55	11.65	11.65	MD	2722
8504	Protective Coatings for New Fuel Elements	39	7/1/55	9/30/55	28.15	28.15	MD	2722
8505	Corrosion	13	7/1/55	9/30/55	8	8	50% MD 35% MD 15% MD	2722 2742 2771
8506	100 Area Process Development- General	17.5	8/1/55	10/31/55	7.25	12.05	RPD	2723
8508	Instrument Development - 300 Area	27	7/1/55	9/30/55	14.20	14.20	75% MD 10% MD 15% MD	2722 2742 2771
8509	Design and Evaluation of Fuel Elements	61.5	8/1/55	10/31/55	19	36.65	80% RPD 10% RPD 10% RPD	2723 2730 2743
8511	Separations Process and Equipment Demonstration	42	9/1/55	11/30/55	0	26.80	80% CPD 20% CPD	2724 2730
8512	Separations Process Chemistry	55	9/1/55	11/30/55	0	37.20	90% CPD 8% CPD 2% CPD	2724 2730 2744
8513	Separations Engineering Devel- opment	42	9/1/55	11/30/55	0	28.05	90% CPD 5% CPD 5% CPD	2724 2730 2744

TECHNICAL DIVISION STUDY STATUS (CONT'D)

DPW-55-15-9

Study No.	Title	Man Mo.	From	To	Man Mo. Used Against Authoriz.	Total Man Mo. Used FY-1956	Program	Budget	
8514	Instrument Development - 200 Area	42	7/1/55	9/30/55	22.35	22.35	85% CPD 10% CPD 5% CPD	2724 2730 2760	
8515	Instrument Development - 100 Area	15	7/1/55	9/30/55	12.50	12.50	90% RPD 5% RPD 5% RPD	2723 2730 2743	
8517	Separations Process Hazards	3	9/1/55	11/30/55	0	1.10	CPD	2724	
8518	Theoretical Physics	40	8/1/55	10/31/55	10.05	20.10	80% RPD 15% RPD 5% RPD	2723 2730 2743	
8519	Experimental Pile Physics	70	8/1/55	10/31/55	21.05	42.05	85% RPD 10% RPD 5% RPD	2723 2730 2743	
8520	100 Area Mechanical Development	40	8/1/55	10/31/55	13.80	27.50	RPD	2723	
8521	Hydriside Development	0	9/1/55	11/30/55	0	0	CPD	2730	
8522	Analytical Chemistry Development	29	9/1/55	11/30/55	0	17.25	10% MD 5% RPD 75% CPD 10% CPD	2722 2723 2724 2730	
8523	Waste Handling	8	9/1/55	11/30/55	0	1.50	CPD	2724	
8524	New LM Elements	30	7/1/55	9/30/55	22.20	22.20	20% MD 80% MD	2742 2771	
8525	Fluid Pressure Facility		(For construction only)					MD	2722
8526	Recycle Facility		(For construction only)					CPD	2704
8527	Recycle Development	2	9/1/55	11/30/55	0	3.70	CPD	2704	
8528	Heat Treating Facility		(For construction only)					MD	2722