I. du Pont de Nemours & Company
Explosives Department
Wilmington 98, Delaware

FILE: TCH-R5-12-

September 14, 1953

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T R. Coughlin

MINUTES OF TECHNICAL DIVISION STEERING COMMITTEE MEETING
SEPTEMBER 8, 1953, SAVANNAH RIVER LABORATORY

Committee Members Present

D. F. Babcock	L. Squires
R. J. Christl	V. R. Thayer
J. E. Cole	M. H. Wahl
L. C. Evans	C. W. J. Wende
J. W. Morris	H. Worthington

Others Present During Parts
of the Meeting

L. M. Arnett
R. M. Girdler
H. M. Kelley
R. I. Martens
J. O. Morrison

APPROVALS

The following Studies were approved:

Study No.	Title	Man Months	From	To
3510	Purex Design Testing	13	9/1/53	11/30/53
3511	Purex Extraction - Operation Studies	18	9/1/53	11/30/53
3512	Separations Process Chemistry	30	9/1/53	11/30/53
3513	Separations Mechanical Development	15	9/1/53	11/30/53
3517	Purex Process Hazards	5	9/1/53	11/30/53
3521	Development	15	9/1/53	11/30/53
3522*	Analytical Chemistry Development	20	9/1/53	11/30/53

* New Study

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MASTER

R. Coughlin 9/26/89

C. J. Bonit 9/11/89

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INFORMATION AND AGREEMENTS REACHED1. Safety.

(a) The Laboratory now requires that approved safety glasses be worn in all working areas.

(b) Consideration is being given to the use of a skeleton second shift to check facilities, to follow any continuing operations, and to make ready for the next day's operations (laundry, etc.).

(c) The Laboratory will review procedures to establish more efficient methods of handling emergencies in controlled areas.

2. Security. Access to the metallurgical section of the Laboratory will be limited through supervisory control.

3. Contactor capacity will be one of the bottlenecks encountered with increased Separations throughput. The Laboratory will undertake work to increase contactor capacity by modification of the present contactors or by the use of alternate contactors such as the Fenske type.

4. Further work will be required to increase the reliability of mixer-settler feed rate equipment. This problem will be accentuated by requirements for the low acid flowsheet. Consideration will be given both to improved jet design and to the use of suitable pumps.

5. The Laboratory will take the necessary steps to have someone familiar with B-line operations by the time such experience is needed.

6. Work directed toward the permanent disposal of radioactive process wastes will begin immediately. Initial efforts will be concentrated on the disposal of coating removal waste solutions.

7. The Laboratory will study the use of electrolysis of the oxides as a means of separating H_2 , D_2 and T_2 . This work will be directed specifically toward D-line needs and more generally toward possible use in the Building 232 operations.

8. Tentatively, the next Steering Committee meeting will be held in Wilmington on October 13th.

9. Attached for information are:

- (a) Appendix A - Financial Status
- (b) Appendix B - Separations, Weapons, and Analytical Development Programs
- (c) Appendix C - Status of Technical Division Studies

TECHNICAL DIVISION

L. C. Evans

LCE:hw
Attachs.

APPENDIX AFINANCIAL STATUS

Technical Division costs for July, the first month of FY-1954, were \$55,000 or 8% below the Financial Plan. The costs of all programs were well under the Financial Plan except that for the 100 Area Process Development Program, which was inflated about \$70,000 by unusual and non-repeating circumstances on several subcontract accounts.

DISCLAIMER

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APPENDIX BSEPARATIONS, WEAPONS, AND ANALYTICAL DEVELOPMENT PROGRAMS
September 1 to November 30, 1953

		<u>Man Months</u>
<u>8510</u>	Purex Design Testing	<u>13</u>
	Evaluation of New or Modified Rate Jets	
	Evaluation of Centrifuge Auxiliaries	
	Demonstration of "in line" Connector	
	Capacity Study of 221 Building	
<u>8511</u>	Purex Operation Studies	18
	M-S Operation (1) at High Temperature and	
	(2) with Low Acid Flowsheet	
	Investigation of Methods of Stripping TBP	
	from Process Streams	
<u>8512</u>	Separations Process Chemistry	30
	<u>TNX</u>	
	Uranium Distribution Coefficient Studies	
	Head End Cake Disposal	
	TBP Emulsion Studies	
	Laboratory Assistance to Pilot Plant	
	<u>773-A</u>	
	Metallurgical Waste Recovery Dissolving Studies	
	Extension of the TNX Distribution Coefficient	
	Studies	
	Distribution of Butanol Between Typical Process Phases	
	Heat Capacities of Process Solutions	
	Solubility and Stability of Sulfamic Acid in HNO ₃	
	Acid Resistance of Various Ion Exchange Resins	
	Swelling Properties of Various Commercial Resins	
	Distribution Coefficients of Process Ions on Various Resins	
	Kinetics of Mass Transfer Between Two Liquid Phases	
	Planning, Design, Procurement and Installation of Equipment	
	Permanent Waste Disposal	
<u>8513</u>	Separations Mechanical Development	15
	<u>TNX</u>	
	Development of M-S of Increased Capacity	
	Rate Jet Development	
	Low Holdup Evaporator Study	
	Miscellaneous Instrumentation (e.g. resistance probe)	
	<u>773-A</u>	
	Planning, Design, Procurement and Installation of Equipment	

APPENDIX B (Cont.)

		<u>Man Months</u>
<u>8517</u>	Purex Hazards Bomb Tests to Evaluate Hazards of Various Evaporations	<u>5</u>
<u>8521</u>	"D" Line [REDACTED] Retention of Hydrogen by a Uranium Bed Including Capacity, Off Gas Rates, etc. Sequential Addition of H ₂ and D ₂ . Use of Electrolysis of Oxides to Separate H ₂ , D ₂ and T ₂ .	15
<u>8522</u>	Analytical Chemistry Development D Line Analyses Precise TBP Analysis Butanol in Solvent Analysis Pu Isotope Analysis Lab. Organization Analysis	20

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APPENDIX C

TECHNICAL DIVISION STUDY STATUS

DPW-53-1231

Study No.	Title	Present Authorization			Man Mo. used to 8/31	Total Man Mo. used to 8/31		
		Man Mo.	From	To			Program	Budget
8501	Non-destructive Testing - Present Components	7	8/1/53	9/30/53	3.5	26.0		300 2802.1
8502	300 Area Process Development- Present Components	10	8/1/53	9/30/53	3.1	39.95		300 2802.1
8503	New Fuel Element Fabrication	14	8/1/53	9/30/53	5.25	29.45		300 2802.2
8504	Protective Coatings for New Fuel Elements	18	8/1/53	9/30/53	7.1	27.95		300 2802.2
8505	Corrosion	8	8/1/53	9/30/53	3.6	20.3	40% 60%	400 2950 300 2910.3
8506	100 Area Process Development - General	42	8/1/53	10/31/53	11.2	44.15	75% 25%	100 2803 100 2910.1
8507	Heat Transfer and Water Quality	16	7/1/53	9/30/53	11.1	57.4	75% 25%	100 2803 100 2910.1
8508	Hydraulics of Present Fuel Elements	1	7/1/53	9/30/53	.05	14.25		100 2803
8509	New Fuel Elements - Hydraulic Evaluation	12	7/1/53	9/30/53	8.1	14.6	50% 50%	100 2803 100 2910.1
8510	Purex Design Testing	13	9/1/53	11/30/53	0	47.35		200 2804
8511	Purex Extraction - Operation Studies	18	9/1/53	11/30/53	0	45.05		200 2804
8512	Separations Process Chemistry	30	9/1/53	11/30/53	0	16.0		200 2804
8513	Separations Mechanical Development	15	9/1/53	11/30/53	0	24.95		200 2804
8514	Instrumentation - Prototype Programs	12.5	7/1/53	9/30/53	7.5	32.55	60% 20% 20%	100 2803 100 2910.1 200 2804
8515	Instrument Development - General	32	7/1/53	9/30/53	13.55	46.85	30% 20% 30% 10% 10%	100 2803 100 2910.1 200 2804 300 2802.1 400 2950

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APPENDIX C

DPW-53-1231

TECHNICAL DIVISION STUDY STATUS (Cont.)

<u>Study No.</u>	<u>Title</u>	<u>Man Mo.</u>	<u>From</u>	<u>To</u>	<u>Man Mo. used to 8/31</u>	<u>Total Man Mo. used to 8/31</u>	<u>Program</u>	<u>Budget</u>	
8516	Non-destructive Testing - New Fuel Elements	9	8/1/53	9/30/53	4.8	16.75	300	2802.2	
8517	Purex Process Hazards	5	9/1/53	11/30/53	0	16.4	200	2804	
8518	Theoretical Physics	42	8/1/53	10/31/53	12.65	51.6	100	2803	
						75%	100	2910.1	
8519	Experiment Pile Physics	79	8/1/53	10/31/53	21.35	87.55	75%	100	2803
						25%	100	2910.1	
8520	100 Area Mechanical Development	33	8/1/53	10/31/53	11.5	30.6	75%	100	2803
						25%	100	2910.1	
8521	██████████ Development	15	9/1/53	11/30/53	0	4.05	Weapons	3754	
8522	Analytical Chemistry Development	20	9/1/53	11/30/53	0	0	80%	200	2804
						20%	Weapons	3754	

September 11, 1953

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