SECRET

This document consists of 4 pages and 0 figures.
No. 2 of 4 copies, Series A

CLASSIFICATION CANCELLED
DATE OCT 15 1963
For The Atomic Energy Commission
H. R. Carroll
Chief, Declassification Branch

CLINTON LABORATORIES
CENTRAL FILES NUMBER
44-2-390

RESEARCH AND DEVELOPMENT REPORT

February 29, 1944

723798

by

R. L. Doan

The following twelve problem assignments were closed out during February.

Number	Title
211-X9S	Development of Better Concentration Cycle
202-X15S	Semi-Works Demonstration of the Adsorption Method of Product Separation
202-X16S	Adsorption-Bismuth Phosphate Coupling Procedure
147-X4E	Calibration of 105 Venturi Meter
175-X6P	Evaluation of W-Shield
203-X4C	Decontamination in the Cross-over Cycle of the $BiPO_4$ Process at Clinton
202-X8C	The Behavior of Clinton Concentrations of Pu in the $BiPO_4$ Process
262-X20C	Preparation of Tracers by Pile n, γ Reaction
262-X21C	Isolation of Individual Fission Products (Millicurie Tracers)
205-X29C	MnO_2 Scavenging
205-X30C	LaF_3 Scavenging
205-X31C	The Scavenging Properties of Insoluble Phosphates

Fifteen new assignments were authorized as follows:

Number	Title
208-X44C	Radiation Measurements in Chemistry
307-X45C	Radiochemical Service
231-X46C	Instrumentation
205-X47C	Fission Product Distribution in Plant Process Solutions
205-X48C	Basic Coseparation Studies on Product and By-Product Carrying Precipitates (Decontamination Principles)
209-X49C	Chemical Problems of the Extraction Plant
209-X50C	Theoretical Process Assistance
203-X51C	Application of Decontamination Studies to the Design of Improved Steps in the Complete $BiPO_4$ Process
331-X52C	New Fission Product Activities
335-X53C	Fission Product and Radiochemical Scouting
335-X54C	The Identification of Pu Fission Products
335-X55C	Identification and Mass Assignments of Rare Earth Activities

BEST COPY AVAILABLE

REPOSITORY AAMES/x-10/vault
COLLECTION Central File
BOX No. CF 44-2-390
FOLDER 1

This document contains information affecting the National Defense of the United States within the meaning of the Espionage Act, 50 U.S.C. 31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited.

A-00449

Human Studies Project

SECRET

[redacted]

Number	Title
127-X18P	Activity in Cooling Water from Uncoated Slug
102-X20P	Product-Power Ratio
131-X21P	Foils for Flux Measurement at High Intensities

The progress made on the various active assignments during the month is summarized in the two semi-monthly Research Highlight Reports written by each section on February 15th and February 29th respectively.

	February 15th	February 29th
Chemistry	M-CN-1285	M-CN-1296
Separations Dev.	M-CN-1282	M-CN-1294
Analytical	M-CC-1281	M-CC-1293
Physics	M-CP-1284	M-CP-1295
Engineering Dev.	M-CE-1283	M-CE-1292
Biology	M-CH-1286	M-CH-1297
Instruments	M-CP-1288	M-CP-1298

Technical personnel of the Research group increased from 206 at the end of January to about 247 at the end of February. Twenty-one of the new additions were men from the Special Engineers Detachment of the Army assigned to work at the Clinton Laboratories. The others were obtained on a transfer basis either from the Metallurgical Laboratory at Chicago (6), Iowa State College (1), or from du Pont (12).

Program for March and April

During the coming two months considerably more emphasis will be placed on specific Hanford problems in the Chemistry and Separations Development Divisions than has been possible heretofore when the main attention of these groups was required to put the Clinton Process on a satisfactory going basis. With the Clinton Process now well in hand, however, more time will be available for Hanford activities. This will require the assignment of several hundred milligrams of product 49 for experimental work in the earlier stages and several grams in the later stages in order to permit the study of certain phases of the bismuth phosphate process at concentrations that will be encountered at Hanford.

The Research and Development program for the next two months is outlined below together with the approximate manpower percentage of effort that will be given to each phase of activity.

This [redacted] information affecting the national [redacted] of the [redacted] transmission [redacted] in any manner to an unauthorized person is prohibited by law.

[redacted]

1166928

[redacted]

CHEMISTRY

Activity	Percentage of Division Effort March	April
Isolation of Plutonium from Plutonium Concentrates. . . .	14	12
Decontamination - main $BiPO_4$ Process.	8	8
Concentration Processes	6	6
Plant Assistance.	10	6
Counting Instruments.	10	10
$BiPO_4$ Co-separation Studies (Scavenger)	6	6
Concentration of by-products by Ether Extraction.	6	6
Fission Product Analysis and Investigation.	12	14
Hot laboratory operations	4	8
Radiation effects	6	6
Adsorption studies.	6	4
Radiochemical analytical procedures	6	6
Search for new analyzing agents	2	2
Chemistry of Plutonium.	2	2
Miscellaneous service work and scouting	2	4

SEPARATION DEVELOPMENT AND SEMI-WORKS

Activity	Percentage of Division Effort March	April
Semi-works operation.	35	35
Plant assistance.	10	10
Improvement in yield.	10	12
Bismuth Phosphate Precipitation Studies	5	5
Development of a LaF_3 Concentration Cycle	6	4
Improvement in Decontamination.	15	17
Corrosion and waste disposal.	3	5
Cross-over cycle.	12	10
Metal solution.	4	2

ANALYTICAL CONTROL

Activity	Percentage of Division Effort March	April
Routine analysis of control samples	75	70
Standardization and development work.	25	30

1166929

This document [illegible] information affecting the [illegible] within the meaning of the [illegible] of its contents in any manner to an unauthorized person is prohibited by law

[redacted]

PHYSICS

Activity	Percentage of Division Effort March	April
Improvement in pile operation.	15	15
Snell experiment	30	25
Radioactivity of process gases	10	6
Induced Radioactivity in commercial material	13	15
Fundamental neutron studies.	8	12
Techniques for scanning Hanford pile	12	15
Method of increasing pile power.	6	6
Shielding of W water-tube header	6	6

ENGINEERING DEVELOPMENT

Activity	Percentage of Division Effort March	April
Increasing operating power of pile	20	15
Corrosion of Hanford water tubes	35	35
Adsorption Process Design.	35	35
Miscellaneous Plant assistance	10	15

BIOLOGY

Activity	Percentage of Division Effort March	April
Experimental Xe^{133} production.	5	5
Metabolism of Fission Products	33	33
Biological effects of pile radiations.	25	25
Biological effects of external β-rays.	8	8
Biological monitoring.	13	13
Metabolism of short lived fission products	16	16

R. L. Doan

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, 50 U. S. C. 31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

1166930

SECRET