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HANFORD WORKS MONTHLY REPORT

FOR

SEPTEMBER 1951

REPOSITORY PNL

COLLECTION Atmospheric Releases

BOX No. N/A

FOLDER N/A

Compiled By

Department Managers

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INV SEP 14 '83

October 19, 1951

Classification reviewed for declassification

by

Date

HANFORD WORKS

RICHLAND, WASHINGTON

Operated for the Atomic Energy Commission
by the
General Electric Company
under
[illegible]t # W-31-1[illegible]

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HW 22304-Del
October 19, 1951

TABLE OF CONTENTS

General Summary 4

Staff 6

Force Report 7

Personnel Distribution 8

Manufacturing Department 18
- Plant Statistics 20
- Metal Preparation Section 24
- Reactor Section 29
- Separations Section 36

Engineering Department
- Technical Section 45
  - Pile Technology Unit 49
  - Separations Technology Unit 78
  - Analytical Unit 94
  - Technical Services Unit 109
- Design and Construction Section 126

Medical Department 139

Radiological Sciences Department 153

Financial Department 176
- General Accounting Section 179
- Manufacturing Accounting Section 200
- Engineering Accounting Section 202
- Community Accounting Section 205

Utilities and General Services Department
- Plant Security and Services Section 209
- Purchasing and Stores Section 242
- Transportation Section 261
- Electrical Distribution and Telephone Section 265

Employee and Public Relations Department 270

Community Real Estate and Services Department 295
- Contract Section 296
- Community Services Section 299
  - Public Works Unit 300
  - Parks and Recreation Unit 304
  - Richland Police 310
  - Richland Fire 320
  - Engineering Unit 322
- Real Estate Section
  - Housing and Real Estate Maintenance Unit 325
  - Real Estate Engineering Unit 336
  - Commercial and Other Property Unit 337
- 700, 1100, 3000 Area Services Section 340

Project and Related Personnel 345

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HANFORD WORKS MONTHLY REPORT

GENERAL SUMMARY

Major Changes in Organization

During July, August and September there were several major changes in organization and nomenclature, many of which were in accord with a company-wide plan which was made effective during this period of time. The changes in nomenclature are apparent from a comparison of the Tables of Contents of the reports for July and August. The more important ones are as follows:

The Nucleonics Division is a major organizational branch of the General Electric Company. This Division operates a physical plant known as Hanford Works. The Division is itself divided into eight Departments, which are further sub-divided into Sections. The Sections are, in turn, divided into Units.

Study of the two Tables of Contents mentioned above will show the manner in which the numerous former divisions have been regrouped into the eight present Departments. It is to be noted particularly that the Manufacturing Department has relinquished its function of managing the electrical distribution and telephone systems to the new Utilities and General Services Department, and has assumed the management of the operational aspects of the former Health Instrument Divisions. It has also made radical changes in its internal organization to improve direct managerial control of manufacturing costs.

Production Operations

Although the number of ruptured fuel slugs increased to 13, compared with 9 and 10 for the previous two months, the associated loss in production time was but 263 hours, largely because of removal within the scram recovery time limit.

Operations in the various plants attained the following percentages of forecasts: canning, 100%; pile discharge, 128% (highest discharge in history); plutonium production 102%. A new high was achieved in maximum pile operating level.

Improved control of iodine emission from the separations plants continued during the month, although an increase was noted in the activity of vegetation in the surrounding country. There was no notable deviation from established patterns in other phases of control activities.

Personnel and Services

The turnover rate for the plant remains fairly steady, being 2.46% in September, but the plant roll continues to increase, attaining 8,896 in September.

The Chief Operators voted against representation by the HAMTC. The Richland and North Richland firemen are now represented by the HAMTC.

Some 700 pending applications for housing reflect the continuing shortage.

Expansion and Construction

Procurement has been initiated on approximately 83% of all material and equipment required for "C" plant.

1217090

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General Summary

Construction work was begun on the Library and Files Building, a unit of the Works Laboratory Area. Construction of the Mechanical Development Building was completed except for the interior.

Construction was delayed by a continuing shortage of certain crafts.

The addition to Kadlec Hospital is about 85% complete.

The Hot Semi-works reached 24% of completion.

Engineering and Technology

A review of the nuclear safety hazards in the separations processes indicates that the batch sizes in both the Redox and Bismuth Phosphate Plants probably can be increased.

An automatic titrator has been placed in routine service for the determination of uranium. This instrument, which was developed during the course of a larger program of research on control methods, possesses advantages of versatility, precision and speed, and is but one of a series of instruments under development for the improvement of process control.

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STAFF

General Manager	G. R. Prout
Manager, Schenectady Office	B. R. Prentice
Assistant General Manager	W. E. Johnson
Assistant to the General Manager, General Administration	G. G. Lail
Assistant to the General Manager, Technical	W. I. Patnode
Assistant to the General Manager, Salary Administration	J. R. Rue
Counsel	G. C. Butler
Manager, Finance	W. W. Smith
Manager, Employee and Public Relations	H. E. Callahan
Director, Radiological Sciences	H. M. Parker
Director, Medical	W. D. Norwood
Manager, Engineering	A. B. Greninger
Manager, Manufacturing	C. N. Gross
Manager, Utilities and General Services	F. E. Baker
Manager, Community Real Estate and Services	L. F. Huck

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FORCE REPORT SEPTEMBER 1951

	EXEMPT		NON EXEMPT		TOTAL	
	8-31-51	9-28-51	8-31-51	9-28-51	8-31-51	9-28-51
GENERAL	24	24	57	43	81	67
LAW	2	2	11	11	13	13
ENGR. DEPT.						
General	0	2	0	1	0	3
Design & Const. Section						
Construction	12	12	29	27	41	39
Design	227	226	323	397	550	623
No. Richland Realty	17	18	112	109	129	127
Project Engr.	75	75	109	12	184	87
Technical Section						
Administrative	7	5	4	3	11	8
Pile Tech.	149	151	154	164	303	315
Separations Tech.	117	106	53	65	170	171
Technical Services	36	39	151	154	187	193
Analytical	10[illegible]	113	287	268	387	381
MANUFACTURING DEPT.						
General	35	38	20	19	55	57
Industrial Engr.	10	9	13	13	23	22
Reactor Section	171	168	853	883	1024	1051
Metal Prep.	55	57	318	322	373	379
Separations	236	219	1021	1107	1257	1326
MEDICAL DEPT	42	41	228	224	270	265
RADIOLOGICAL SCIENCES DEPT.						
General	5	4	2	2	7	6
Records & Standards	58	59	185	134	243	193
Biophysics	48	45	92	69	140	114
Biology	33	33	47	44	80	77
FINANCIAL DEPT.						
Engr. Acctg.	10	12	88	83	98	95
Mfg. Acctg.	9	9	70	69	79	78
Gen. Acctg.-Acctg.	22	23	107	104	129	127
Gen. Acctg.-Payroll	10	10	107	109	117	119
Comm. Acctg.	6	6	26	26	32	32
EMPLOYEE & PUBLIC RELATIONS	3[illegible]	37	78	79	115	116
UTILITIES & GENERAL SERVICES						
General	0	16	0	12	0	28
Elect. Dist. & Tele. Sec.	30	28	150	151	18[illegible]	179
Transportation	46	40	448	457	494	497
Plant Sec. & Services						
Patrol & Sec.	57	57	586	589	643	646
Safety & Fire	42	42	110	108	152	150
Office Services	28	26	274	270	302	296
Purchas. & Stores Section	86	84	328	324	414	408
COMM. REAL ESTATE & SERV. DEPT.	192	192	434	416	626	608
TOTAL	2034	2028*	6875	6868	8909	8896

* Includes 56 Comm. Firemen

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PERSONNEL DISTRIBUTION - SEPTEMBER 1951

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200 E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	24	24
Cler. & Other Non Exempt	-	-	-	-	-	-	-	-	-	-	43	43
Total	-	-	-	-	-	-	-	-	-	-	67	67
LAW												
Exempt Personnel	-	-	-	-		-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	11	11
Total	-	-	-	-	-	-	-	-	-	-	13	13
ENGR. DEPT												
Engr. General												
Supervisors	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	-	-	3	3
Design & Const. Sect.												
CONSTRUCTION												
Supervisors	-	-	-	-	-	-	-	-	-	-	8	8
Inspectors & Analyst	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	27	27
Total	-	-	-	-	-	-	-	-	-	-	39	39
DESIGN												
Supervisors	1	23	-	3	2	1	-	12	-	-	39	81
Other Exempt	10	9	-	8	5	-	27	2	4	23	57	145
Draftsmen & Designers	-	-	-	-	-	-	3	-	-	10	106	119
Clerical	2	12	-	2	6	-	5	1	-	22	137	187
Others	-	10	-	2	3	-	1	-	3	3	69	91
Total	13	54	-	15	16	1	36	15	7	58	408	623

1217094

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
NORTH RICHLAND REALTY												
Supervisors	-	-	-	-	-	-	-	-	-	-	18	18
Janitors	-	-	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	-	-	14	14
Others	-	-	-	-	-	-	-	-	-	-	38	38
Total	-	-	-	-	-	-	-	-	-	-	12	127
PROJ ENGR.												
Supervisors	-	-	-	-	-	-	-	-	-	25	-	25
Engineers	-	-	-	-	-	-	-	-	-	50	-	50
Clerical	-	-	-	-	-	-	-	-	-	6	-	6
Others	-	-	-	-	-	-	-	-	-	6	-	6
Total	-	-	-	-	-	-	-	-	-	87	-	87
TECHNICAL SECTION												
GENERAL											5	5
Supervisors	-	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	-	8	8
Total	-	-	-	-	-	-	-	-	-	-		
PILE TECHNOLOGY												
Supervisors	2	-	-	-	-	-	-	8	-	-	-	10
Metallurgists & Engrs.	18	4	1	5	17	-	2	35	-	-	2	84
Physicists	-	-	4	4	3	-	-	15	-	-	-	26
Engr. Assts.	16	2	2	2	5	-	-	5	-	-	-	31
Tech. Grads.	19	5	2	8	11	-	2	26	-	-	1	74
Technologists	10	-	-	3	2	-	-	1	-	-	-	16
Laboratory Assts.	17	2	-	6	8	-	-	12	-	-	2	47
Clerical	6	1	-	4	2	-	-	10	-	-	1	24
Engr. Asst.	-	2	-	-	-	-	-	1	-	-	-	3
Total	88	16	9	32	48	-	4	112	-	-	6	315

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
SEPARATIONS TECH.												
Supervisors	-	-	-	-	-	1	6	14	-	-	-	21
Chemists & Chem. Engrs.	-	-	-	-	-	3	25	53	-	-	-	81
Other Exempt	-	-	-	-	-	-	1	3	-	-	-	4
Tech. Grads.	-	-	-	-	-	3	5	12	-	-	-	20
Clerical	-	-	-	-	-	-	6	12	-	-	-	18
Lab. Assts. & Tech.	-	-	-	-	-	-	4	11	-	-	-	15
Other Non Exempt	-	-	-	-	-	-	-	12	-	-	-	12
Total	-	-	-	-	-	7	47	117	-	-	-	171
TECH. SERVICES												
Supervisors	-	2	-	-	-	-	1	8	-	-	3	14
Other Exempt	-	8	-	-	-	-	1	13	-	-	3	25
Lab. Assts	-	-	-	-	-	-	4	1	-	-	-	5
Technologists, & Tech. Grads	-	7	-	-	-	-	1	11	-	-	1	20
Clerical	-	2	1	-	-	-	3	43	-	-	43	92
Others	-	10	-	-	-	-	2	23	-	-	2	37
Total	-	29	1	-	-	-	12	99	-	-	52	193
ANALYTICAL TECH.												
Supervisors	1	-	-	2	-	6	20	13	-	-	-	42
Chemists & Engrs.	8	1	1	2	-	1	14	44	-	-	-	71
Technologists, Tech. Grads	2	-	-	2	-	11	40	29	-	-	-	84
Laboratory Assts.	4	-	-	7	-	35	87	37	-	-	-	170
Clerical	-	-	-	1	-	1	5	7	-	-	-	14
Total	15	1	1	14	-	54	166	130	-	-	-	381

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MANUFACTURING DEPTS.												
GENERAL												
Supv.	-	-	-	-	-	-	-	-	-	-	13	13
Other Exempt	2	-	-	1	-	-	-	-	1	1	20	25
Clerical	-	-	-	-	-	-	-	-	1	1	15	17
Tech. Grads	-	-	-	-	-	-	-	-	-	-	2	2
Total	2	-	-	1	-	-	-	-	2	2	50	57
INDUSTRIAL ENGR.												
Supv	-	-	-	-	-	-	1	-	-	-	2	3
Other Exempt	-	-	2	-	-	-	-	4	-	-	-	6
Tech. Grads	-	-	3	-	-	-	2	6	-	-	-	11
Clerical	-	-	-	-	-	-	-	-	-	-	1	1
Others	-	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	5	-	-	-	3	10	-	-	4	22
REACTOR												
Supv.	26	44	34	36	-	-	-	-	-	-	-	140
Other Exempt	4	4	7	5	-	-	-	-	2	-	6	28
Supv. in Training	-	2	-	2	-	-	-	-	-	-	-	4
Operators	112	174	10	108	-	-	-	-	-	-	-	501
Craftsmen	55	92	79	44	-	-	-	-	-	-	-	270
Inspectors & Lab. Assts.	6	9	5	6	-	-	-	2	-	-	-	28
Clerical	7	8	7	13	-	-	-	-	-	-	3	38
Others	2	8	3	3	-	-	-	-	-	-	-	16
Tech. Grads.	4	11	3	6	-	-	-	1	-	-	1	26
Total	216	352	245	223	-	-	-	3	2	-	10	1051

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	100-B Area	100-D Area	10 -F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	70(-1100 Area	Total
METAL PREPARATION												
Supv.	-	2	-	-	-	-	-	39	-	-	1	42
Other Exempt	-	-	-	-	-	-	-	15	-	-	-	15
Supv. in training	-	-	-	-	-	-	-	2	-	-	-	2
Operators	-	-	-	-	-	-	-	142	6	-	-	148
Craftsmen	-	25	-	-	-	-	-	101	-	-	7	133
Clerical	-	1	-	-	-	-	-	20	-	-	1	22
Others	-	2	-	-	-	-	-	7	-	-	1	10
Tech. Grads.	-	1	-	-	-	-	-	6	-	-	-	7
Total	-	31	-	-	-	-	-	332	6	-	10	379
SEPARATIONS												
Supv.	-	-	-	-	-	33	121	-	-	-	-	154
Other Exempt	-	-	-	-	-	7	53		-	-	5	65
Supv. in Training	-	-	-	-	-	2	16	-	-	-	-	19
Operators	-	-	-	-	-	227	470	-	-	-	-	697
Craftsmen	-	-	-	-	-	50	228	-	-	-	-	278
Inspector & Lab. Assts.		-	-	-	-	11	23	5	-	-	-	39
Clerical	-	-	-	-	-	9	44	-	-	-	2	55
Others	-	-	-	-	-	3	4	-	-	-	-	7
Tech. Grads.	-	-	-	-	-	3	9	-	-	-	-	12
Total	-	-	-	-	-	345	968	5	-	-	8	1326
MEDICAL SERVICES DEPT.												
Supervisors	-	-	-	-	-	-	-	-	-	-	22	22
Physicians	-	-	-	-	-	-	-	-	1	3	8	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	7	7
Technicians	-	-	-	-	-	-	-		1	3	12	16
Nurses	1	4	4	1	3	4	7	1	2	3	60	90
Clerical	-	-	-	-	-	-	-	-	3		38	48
Others	-	-	-	-	-	-	-	-	-	1	69	70
Total	1	4	4	1	3	4	7	1	7	17	216	265

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700 1100 Area	Total
RADIOLOGICAL SCIENCES DEPT.												
STAFF												
Supervisors	-	-	-	-	-	-	-	-	-	-	2	2
Other Exempt	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-		-	-	-	-	6	6
RECORDS & STANDARDS												
Supervisors	-	-	-	-	-		-	10	-	-	3	13
Other Exempt	1	10	1	10	-	10	8	2	-	-	4	46
Clerical	-	-	-	-	-	-	-	1	-	-	1	2
Others	15	4	4	3	-	10	23	50	9	-	14	132
Total	16	14	5	13	-	20	31	[illegible]	9	-	[illegible]	[illegible]
BIOPHYSICS												
Supervisors	-	-	-	-	-	1	6	1	-	-	-	8
Other Exempt	-	-	-	-	-	3	19	15	-	-	-	37
Clerical	-	-	-	-	-	1	2	2	-	-	-	5
Other Non Exempt	-	-	-	-	-	19	39	6	-	-	-	64
Total	-	-	-		-	24	66	24	-		-	114
BIOLOGY												
Supervisors	-	-	6	-	-	-	-	-	-	-	-	6
Other Exempt	-	-	27	-	-	-	-	-	-	-	-	27
Clerical	-	-	4	-	-	-	-	-	-	-	-	4
Others	-	-	40	-	-	-	-	-	-	-	-	40
Total	-	-	77	-	-	-	-	-	-	-	-	77

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
FINANCIAL DEPT.												
GENERAL ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	2	28	30
Other Exempt	-	-	-	-	-	-	-	-	-	1	2	3
Clerical	-	-	-	-	-	-	-	-	4	41	168	213
Total	-	-	-	-	-	-	-	-	4	44	198	246
MFG. ACCTG.												
Supv.	-	-	-	-	-	-	-	-	-	-	9	9
Clerical	-	-	-	-	-	-	-	-	-	-	69	69
Total	-	-	-	-	-	-	-	-	-	-	78	78
ENGR. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	12	-	12
Clerical	-	-	-	-	-	-	-	-	-	83	-	83
Total	-	-	-	-	-	-	-	-	-	95	-	95
COMM. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	-	6	6
Clerical	-	-	-	-	-	-	-	-	-	-	26	26
Total	-	-	-	-	-	-	-	-	-	-	32	32
EMPLOYEE & PUBLIC RELATIONS												
Supervisors	-	-	-	-	-	-	-	-	-	-	24	24
Empl. Rel. Counselor	-	-	-	-	-	-	-		-		1	1
Other Exempt	-	-	-	-	-	-	-	-	-	-	12	12
Clerical	-	-	-	-	-	-	-	-	-	-	64	64
Others	-	-	-	-	-	-	-		-	-	15	15
Total	-	-	-	-	-	-	-	-	-	-	116	116
UTILITIES & GENERAL SERVICES												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	16	16
Clerical	-	-	-	-	-	-	-	-	-	-	12	12
Total	-	-	-	-	-	-	-	-	-	-	28	28

DECLASSIFIED

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
PLANT SEC. & SERVICES												
SEC. & PATROL												
Supervisors	6	6	6	5	-	5	9	7	5	-	4	53
Other Exempt	-	-	-	-	-	-	-	-	4	-	-	4
Patrolmen	70	48	6[illegible]	47	-	72	154	74	11	-	27	570
Clerical	-	-	-	-	-	-	-	-	16	-	1	17
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	76	54	73	52	-	77	163	81	38	-	32	646
SAFETY & FIRE												
Supervisors	4	-	-	-	4	-	4	4	10	-	7	33
Engineers	-	2	-	1	-	2	-	3	-	-	1	9
Firemen	44	-	-	-	8	-	20	16	14	-	-	102
Clerical	-	1	-	1	-	1	-	1	-	-	2	6
Total	48	3	-	2	12	3	24	24	24	-	10	150
OFFICE SERVICES												
Supervisors	-	-	1	-	-	1	3	1	1	-	17	24
Procedures Analysts	-	-	-	-	-	-	-	-	-	-	2	2
Laundry Operators	-	-	-	-	-	2	-	-	-	-	1	3
Janitors & Servicemen	8	5	6	7	-	5	20	13	6	-	40	110
Clerical	-	-	-	-	-	-	1	-	-	-	42	43
Others	-	-	-	-	-	-	45	-	-	-	69	114
Total	8	5	7	7	-	8	69	14	7	-	171	296

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
PURCHASING & STORES												
Supervisors	1	-	-	-	-	-	-	-	-	2	28	31
Other Exempt	-	-	-	-	-	-	-	-	26	-	27	53
Clerical	6	-	-	-	-	-	-	-	-	31	145	182
Others	20	-	-	-	-	-	2	1	-	8	94	125
Rotational Trainees	-	-	-	-	-	-	-	-	16	-	1	1
Total	27	-	-	-	-	-	2	1	42	41	295	408
ELECT. DIST. & TELEPHONE												
Supv.	-	-	-	-	-	-	-	-	13	-	8	21
Other Exempt	-	-	-	-	-	-	-	-	3	-	4	7
Craftsmen	-	-	-	-	-	-	-	-	60	-	31	91
Clerical	-	-	-	-	-	-	-	-	4	-	23	27
Operators	4	4	4	4	-	-	-	-	12	-	-	28
Others	-	-	-	-	-	-	-	-	3	-	2	5
Total	4	4	4	4	-	-	-	-	95	-	68	179
TRANSPORTATION												
Supervisors	2	-	3	2	-	1	1	-	3	-	26	38
Other Exempt	-	-	-	-	-	-	-	-	-	-	2	2
Bus Drivers	-	-	-	-	-	-	-	-	-	-	163	163
Journeymen	3	1	1	8	-	-	3	-	6	-	62	84
Trainmen	-	-	-	-	-	-	-	-	26	-	-	26
Servicemen	6	-	2	-	1	-	-	-	1	-	16	26
Equip. Oper.	7	-	16	-	1	-	-	-	-	-	26	50
Clerical	-	-	1	-	-	-	-	-	-	-	26	27
Others	7	-	7	13	-	9	3	1	1	-	40	81
Total	25	1	30	23	2	10	7	1	37	-	361	497

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
COMM. REAL ESTATE & SERVICES												
Supervisors	-	-	-	-	-	-	-	-	-	14	112	126
Other Exempt	-	-	-	-	-	-	-	-	-	-	10	10
Firemen	-	-	-	-	-	-	-	-	-	23	33	56
Patrolmen	-	-	-	-	-	-	-	-	-	17	23	40
Journeymen	-	-	-	-	-	-	-	-	-	-	164	164
Servicemen	-	-	-	-	-	-	-	-	-	-	31	31
Truck Drivers	-	-	-	-	-	-	-	-	-	-	33	33
Power Operators	-	-	-	-	-	-	-	-	-	-	33	33
Clerical	-	-	-	-	-	-	-	-	-	-	67	67
Others	-	-	-	-	-	-	-	-	-	-	48	48
Total	-	-	-	-	-	-	-	-	-	54	554	608
GRAND TOTAL	539	568	461	387	81	553	1605	1032	280	398	2992	8896

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MANUFACTURING DEPARTMENT
SEPTEMBER 1951

SUMMARY

Effective September 1, 1951, personnel handling radiation monitoring work in the areas were transferred to the Manufacturing Department, forming the Radiation Monitoring Units of the Reactor and Separations Sections and a staff office in the Metal Preparation Section. Personnel formerly reporting to the Plant Industrial Engineer were assigned to the Sections during the month.

Several discussion meetings and area visitations were scheduled for 34 representatives of utilities and commercial companies on the subject of "Power Applications of Atomic Energy".

The Metal Preparation Section forecasted total of 105 tons of acceptable pieces was canned at a yield of 76.4 percent. There were no autoclave failures during September. The melt plant produced 23 tons of billets at a yield of 91.1 percent and a solid yield of 94.8 percent. The machining yield of 74.7 percent was adversely affected by the very poor quality of rods processed.

The Reactor Section achieved a total maximum pile operating level 54 MW above the previous high. A total of 114 tons of metal was discharged during the month. The remaining H-10 load was discharged.

The production input was 104.8 percent of the forecast while the output was 128.0 percent of forecast, which represents the largest amount ever pushed in any one month. There was a total of 14 ruptured slugs, including one P-10 target slug with a resultant loss of 262.5 hours of production time. On three occasions it was possible to discharge the ruptured slugs within the scram recovery time limit with a resultant saving of approximately 70 production hours. The time operated efficiency was [illegible].3 percent.

A total of 129 charges plus two acid washes was started in the Canyon Buildings which represents 100.0 percent of forecast. The Concentration Buildings completed 130 charges and two acid washes. A total of 126 regular charges plus two acid washes and 10 special charges was processed through the Isolation Building. Production was 102 percent of forecast.

The average cooling time was 48 days with the minimum being 41 days. The average purity of completed charges was 98.9 percent.

C. N. GROSS, MANAGER
MANUFACTURING DEPARTMENT

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MANUFACTURING DEPARTMENT

PATENT REPORT SUMMARY
FOR
MONTH OF SEPTEMBER 1951

Richland, Washington
October 8, 1951

All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the couse of their work have been examined for possible inventions or discoveries.

INVENTOR	TITLE
NONE	NONE

C. N. GROSS, MANAGER

MANUFACTURING DEPARTMENT

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MANUFACTURING DEPARTMENT
METAL PREPARATION SECTION
SEPTEMBER 1951

I. RESPONSIBILITY

In accordance with the reorganization of the Manufacturing Department, effective September 11, 1951 Radiation Monitoring services were established for the Metal Preparation Section, consisting of former H. I. Operations functions.

Effective September 10, 1951, the responsibility for operation of the Power facilities at Hanford and the 101 building was transferred to the Design and Construction Management Section.

Responsibility for operation of the 300 Area car pool was transferred to the Utilities and General Services Department, Transportation Section, effective September 10, 1951.

II. ACHIEVEMENT - OPERATIONS UNIT

Operating Experience

1. Statistics

	August	September	To Date 1951
Billets Produced	20	23	179
Bare Pieces Machined (Tons)	77	86	770
Briquettes Produced (Tons)	12	17	114
Oxide Burned (Weight out Tons)	2	3	27
Acceptable Pieces Canned (Tons)	90	105	806
Acceptable Pcs. Canned (% of Forecast)	91.9%	100.00%	---
Melt Plant Billet Yield (%)	90.2	91.1	89.1
Melt Plant Solid Yield (%)	93.3	94.8	94.4
Machining Yield (%)	76.7	74.7	78.0
Chip Recovery Yield (%)	88.8	87.4	88.0
Canning Yield (%)	71.5	76.4	81.1
Autoclave Frequency (No./M)	.06	.00	.09

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2. Activities

The Melt Plant, Chip Recovery and Slug Recovery operations were continued throughout the month without incident. During the month, nine tons of raw oxides were processed through the oxide burner. On September 24, the program for burning the large backlog of expended graphite parts from the Melt Plant (MD-4 oxide) was completed.

The uranium machined during the month was predominantly "U" type material which had been rolled during June and August. The general quality of this material was poor. Defects consisted of rough ends averaging seven inches in length, irregular surfaces, seams, cracks and elipticity. Random samples of material rolled in August were found to be of poorer quality than material rolled in June. Steps are being taken to improve "as received" rod quality.

Canning production was 100% of the forecasted amount. The increase in production was due to the operation of one canning line on the 4-12 shift throughout the month and a five per cent increase in the canning yield. The increase in the canning yield was achieved by reducing the number of pieces rejected for deviations from the standard process, marred surface and AlSi on the outside of the can. Improved operator technique and close supervisory follow up were responsible for the major portion of this improvement.

None of the slugs tested for penetration during the month were found to be penetrated to within .015" of the outer surface of the can wall.

There were no autoclave failures during the month. A total of 93,937 slugs have been autoclaved since the last failure.

The 305 test pile operated normally throughout the month. One hundred twenty three routine and 40 special tests were run. Seven and one half days were devoted to control rod re-calibration.

3. Special Operations

During the month 2,525 poison and 240 Chem. 10-66 pieces were canned. In addition, 116 man hours were devoted to the fabrication and handling of special request materials.

4. Schedule Variance

The production of machined bare slugs was approximately 4 per cent below the forecasted amount and was caused by a failure to procure the forecasted manpower.

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5. Reports Issued

Number	Title	Author	Date
HW-22094	Suspected SF Discrepancy in Production Lot 89-TQ, 300 Area Manufacturing Process	H. E. Berg	8-14-51
HW-22108	300 Area Program Committee Meeting	W. A. Blanton	9-10-51

Equipment Experience

1. Operating Continuity

A high frequency arc starter was installed on one of the slug welding machines. This device has eliminated previous difficulty in striking the arc and thereby has increased the duty cycle of this equipment by approximately six per cent.

Improvements

1. Adoptions

During the month an arc positioning quadrant was installed on the slug welding machines. This device will standardize the positioning of the welding electrode with regard to the cap and will produce welds of more uniform quality.

Inventions and Discoveries

All people in the Operations Unit engaged in work which might be expected to result in inventions or discoveries have reported that no inventions or discoveries were made during the period covered by this report.

II. ACHIEVEMENT - PLANT ENGINEERING UNIT

Operating Experience

1. Power Statistics

384 Building

Maximum steam generated	15,800 lb./hr
Steam generated - Total	7,205 M lb
Steam generated - Average rate	10,007 lb./hr
Coal consumed - Total (estimate)	554 Tons

300 Sanitary and Fire System

Sanitary water from 3000 Area	30,540,000 gal.
Well water pumped - Total (to Construction)	1,008,000 gal.
Total water - Average rate	730 gpm
Chlorine residual	.45 ppm

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White Bluffs Ice Plant

Ice manufactured	881 M lb.

2. Instrument Statistics

Current shop work loads consist of:

	Man Hours	Crew Weeks
Instrument Machine Shop	4600	7
Electronic Fabrication Shop	3278	10
Mechanical Development Shop	2251	2

Project C-346 (P-12 Exponential Pile Program) was closed, decreasing the backlog for the Mechanical Development Shop by 1000 man hours. Future graphite fabrication will be done in the 101 Building at Hanford.

3. Activities

The 300 Area steam plant was shut down completely on September 9. All main and auxiliary steam header valves in the power house were repacked. A 4-inch sectional valve was installed in the loop between the 313 and 314 buildings so that these buildings could be isolated separately.

4. Equipment Experience

There were five heating element failures in the Process Canning furnaces in the 313 Building during this month. Studies are continuing to improve, if possible, the type elements used to effect a reduction in the number of failures.

5. Improvements

Adoptions

A ventilation system was installed to eliminate fumes at welder stations in the 313 Building. An exhaust fan, flexible tubing, and funnels provide suction to each individual welder to carry away the fumes.

The Automatic Canning unit designed by the Industrial Engineering group, intended to accomplish mechanical timing cycle on the canning operation, was completed and demonstrated. The working committee on this subject will advise what future action should be taken.

Glass seals for collecting electrodes of miniature, metal, radiation counting tubes have been successfully produced by platinizing the tip and shoulder of Pyrex capillary tubing sections to form a base for the metallic bond.

Inventions and Discoveries

All people in the Plant Engineering Unit engaged in work which might be expected to result in inventions or discoveries have reported that no inventions or discoveries were made during the period covered by this report.

Plant Development and Expansion

1. Project Status

Project C-199 - 300 Area Sanitary Sewage Disposal System

Final plans and specifications were approved September 21.

Project C-433 - Additions to 300 Area Power Plant

Several specific items, such as boilers and turbo generator, were approved to enable the subcontractor to place orders.

2. Industrial Engineering and Studies

The General Engineering Laboratory has indicated a cost of $60,000 to $80,000 to cover the engineering involved in designing a mercury jet switch for the 105-C building temperature mapping equipment. A Development Engineer visited the Laboratory to discuss the design and fabrication problems in connection with this switch.

3 Reports Issued

HW-21996	"Measurements of Pile Periods on a Counting Rate Meter"	I. M. Jacobs 8-22-51
	"Proposed Preventive Maintenance Lubrication Practices"	T R. Moffettee 9-14-51

III. PERSONNEL

The following appointments were made effective during August 1951:

Thomas D. Naylor, Staff Engineer, Radiation Monitoring Unit.

Safety Experience

There was one sub-major injury; no major injuries during the month.

Radiation Exposure

No incidents of personnel over-exposure occured during the month.

W. M. Mathis
Manager
Metal Preparation Section

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MANUFACTURING DEPARTMENT
REACTOR SECTION
SEPTEMBER, 1951

I. RESPONSIBILITY

Effective September 1, 1951, the Radiation Monitoring Unit was established within the Reactor Section. The new unit is comprised of the survey facilities and personnel formerly assigned to the Radiological Sciences Department, Operational Section serving the Manufacturing Department in the 100 Areas. The Unit is responsible for the radiation monitoring of personnel associated with the Reactor Section program.

The automotive repair and service functions of the Plant Engineering Unit were transferred to the Utilities and General Services Department on September 10, 1951.

II. ACHIEVEMENT

Operating Experience

The total reactor production (input) was 4.8% over the forecast but was 2.1% less than the total for August due primarily to the shorter work month. A total increase of 52 MW over previously established maximum pile operating levels was achieved during the month by improved temperature control techniques and continued annealing of the graphite moderator.

There were 14 slug jacket failures during September, of which 13 were uranium slugs and one was a P-10 target slug. A total of 262.5 hours of outage time was chargeable to the removal operations. On 3 occasions the ruptured slugs were discharged within the scram recovery time limitation, permitting an immediate resumption of operation. It is estimated that these discharges, made possible since the ruptured slugs did not bind in the tube, reduced the total potential outage time by approximately 70 hours.

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Reactor Section
Manufacturing Department
September, 1951

Production Summary	B	D	DR	H	F	Total or Average
Reactor Time Operated Efficiency (%)	96.1	74.1	96.0	84.8	75.6	85.3
Reactor Outage Time (Hours)						
Plutonium Production	22.8	176.1	24.6	33.7	171.9	429.1
H-10 Production	-	-	-	75.7	-	75.7
Production Tests	5.0	10.0	4.0	-	4.0	23.0
Total	27.8	186.1	28.6	109.4	175.9	527.8
Reactor Unscheduled Outage Time (Hours)	0.8	168.6	10.1	33.7	145.7*	358.9
Metal Discharged (Tons)	16.31	25.03	9.66	35.48	27.73	114.21
Water Pumped - Bldg. 181 (GPM Average)	43,885	85,390	46,207	44,305		219,787
Steam Generated (M lbs.)	112,437	176,603	77,241	102,429		468,710
Coal Consumed (Tons)	7,028	11,160	5,120	6,650		29,958

* Of this amount 95.8 hours resulted from an isolation and repair program related to process water leaks in tubes 0890-F and 0893-F.

The preliminary work necessary for feeding aluminum sulfate coagulant at the 100-F Area Filtration Plant was completed during the month. This included the re-activation of unused chemical feed lines and the fabrication of two Zeolite water softeners to be used for lime slurry preparation. Aluminum sulfate feed will be started under the conditions set forth in Production Test No. 105-473-P, Document HW-21924, as soon as production approval is obtained.

The entire remainder of the H-10 loading was discharged from H Reactor during the outage of September 25-28. The decision to schedule the premature discharge of the H-10 load was made in an effort to avoid predicted production losses due to future P-10 target and regular slug ruptures. The premature discharge resulted in a loss of approximately 5% of the originally scheduled tritium production, (see Document HW-22114).

Equipment Experience

The general mechanical condition of the reactor components and equipment continued good throughout the month. A total of 96.4 hours of unscheduled reactor outage time resulted from equipment failures, as follows:

a. A total of 95.8 hours of outage time resulted from process tube water leaks at F Reactor. The leaks were located in tubes 0890-F and 0893-F. The charges in the tubes were removed and the tubes will be replaced during a subsequent outage.

Reactor Section
Manufacturing Department
September, 1951

Equipment Experience (Continued)

b. The F Reactor was shut down for 0.6 hours on September 21 to discharge tube 4677-F. The outlet temperature of this tube apparently increased about 20° C, although the flow and inlet pressure appeared normal. No satisfactory explanation for this higher temperature reading could be developed, other than possible inaccuracy of the temperature monitoring equipment.

Deterioration of the downcomer at F Reactor apparently accelerated during the month, possibly due to the higher water flow rates employed. Increased emphasis is being placed on the temporary repair program to assure, insofar as possible, that the need for major repair does not develop before the scheduled replacement of the downcomer.

The No. 5 Boiler at Building 184-D was inspected by The Travelers Insurance Company inspector on September 6, 1951. This completes the annual inspection of all 100 Area boilers for 1951.

The No. 7 Process Pump Motor, at Building 190-D, failed during an attempted start on September 3, 1951. The motor has been removed for rewinding.

The rewinding of Process Pump Motor No. 6, from Building 190-B, was completed and the unit was returned to service on September 14, 1951. (This unit failed on 7-28-51.)

Improvements

Work progressed on an improved method for detecting alpha activity in retention and storage basin water samples to facilitate release of these basins when their activity concentrations are questionable.

No inventions or discoveries were made by personnel of the Reactor Section during September.

Plant Development and Expansion

The status of currently active Reactor Section projects is summarized below:

C-411 (J Slug Handling Facilities)
Heat transfer tests to determine the allowable number of slugs per cask without overheating were conducted during the month. It was found that 63 slugs produce a temperature rise of 30° C and a pressure of 10 psig in the cask after one and one-half days. The slugs used had been discharged 60 days previous to the test.

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Reactor Section
Manufacturing Department
September, 1951

Plant Development and Expansion (Continued)

Modifications to the shipping cask eliminated the handling difficulties mentioned in the August report. A dummy shipment from Hanford to Arco was completed satisfactorily September 25.

C-420 (CO_2 Bulk Storage Facilities)
No further field work has been accomplished pending approval of the revised project proposal which is being prepared. Directive HW-218, Modification No. 1, was received from the Atomic Energy Commission extending the required completion date to January 1, 1952.

C-431 (100-C Plant)
The design of the reactor and its associated equipment is approximately 86% complete and approved. The Building 105-C design is approximately 86% complete and 60% approved.

The first shipments of "B" blocks, thermal shield blocks and gunbarrel donuts were received during the month.

C-438 (Ball 3X Facilities for B, D, DR, H, and F Piles)
(Engineering and Procurement of Critical Materials)
The final draft of the project proposal was completed this month and is ready for approval of the department manager.

Design work on this project is approximately 90% complete. All major design will be done by October 15.

Bids from at least two vendors are expected October 1 for the ball hoppers and step plugs. These are the last major mechanical components for which contracts must be let.

C-472 (Thermocouple Equipped VSR Thimble, B and D)
Two thermocouple equipped thimbles have been installed at Bldg. 105-D. It is next planned to install two thimbles at Bldg. 105-B.

M-713 (VSR Design)
A request for an extension of the directive completion date to May 1, 1952, was forwarded to the Commission. Work on the project is stopped until this authorization is received.

M-608 (Differential Thermohm Systems for Power Level Measurements, 105-B, D, F, DR and H)
The first installation has been completed at Bldg. 105-F. Anticipated delivery dates of equipment from 300 Area Instrument shops should permit installations November 1, November 15, and December 15, at D, B, and H Areas, respectively.

Reactor Section
Manufacturing Department
September, 1951

Plant Development and Expansion (Continued)

M-831 (Retention Basin Repairs, B, D, F, (Project Preparation Only) The engineering necessary for the project proposal has been completed.

Following is a summary of significant reactor studies active during September:

Pile Gas Circulation

A series of tests were conducted to determine the effect of gas flows and pressures on pile reactivity. The tests revealed that no permanent effect resulted from varying gas flows from 500 to 1,300 c.f.m. and pressures from two to twelve inches of water.

Charging Machine Development

The test facility for charging machine and slug discharge equipment has been completed and the charging machine development program was under way at month end.

Ruptured Slug Problem

A study is being made of the operational aspects of the ruptured slug problem. It was revealed that in three of the areas the majority of slugs which ruptured were charged with one of the area charging machines. The particular charging machines will be tested at the earliest opportunity and replaced with improved machines.

Mechanical Developments

Several operating aids and mechanical developments are in progress. A jack which will remove either the inlet nozzle end cap or shielding is being fabricated. Equipment is being fabricated which will permit pressure testing of process tubes without necessitating the removal of pigtails.

Reports Issued

The following documents concerning the slug jacket failures occurring during September provide detailed information on these events.

Area	Type of Failure	Date	Tube No.	Outage (Hrs.)	Document No. Describing Incident
B	Ruptured Uranium	9-17	0970-B	0.4	HW-22176
B	Ruptured Uranium	9-26	1288-B	0.4	HW-22265
D	Ruptured Uranium	9-1[illegible]	1756-D	28.6	HW-22220

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Reactor Section
Manufacturing Department
September, 1951

Reports Issued (Continued)

Area	Type of Failure	Date	Tube No.	Outage (Hrs.)	Document No. Describing Incident
D	Ruptured Uranium	9-3	1562-D	34.5	HW-22218
D	Ruptured Uranium	9-6	1765-D	23.7	HW-22219
D	Ruptured Uranium	9-10	1860-D	28.5	HW-22287
D	Ruptured Uranium	9-19	1479-D	27.3	HW-22288
D	Ruptured Uranium	9-29	1766-D	26.0	HW-22305
DR	Ruptured Uranium	9-20	3273-DR	0.6	HW-22206
DR	Ruptured Uranium	9-20	1264-DR	9.5	HW-22206
F	Ruptured Uranium	9-2	2293-F	26.3	HW-22121
F	Ruptured Uranium	9-5	2061-F	23.0	HW-22149
H	Ruptured P-10	9-26	2964-H	8.0	HW-22296
H	Ruptured Uranium	9-30	3684-H	25.7	HW-22296

Document HW-22272 describes the detection and isolation of the leaking process tubes at F Area.

III. PERSONNEL

Organization Changes

Concurrent with the establishment of the Radiation Monitoring Unit in the Reactor Section, the following appointment was made:

P. C. Jerman, Chief Supervisor of the former 100 Area Survey Sub-Unit of the Radiological Sciences Department, Operational Section, was appointed Head - Radiation Monitoring Unit.

Force Changes

Number of employees on the payroll during September, 1951:

	Section General	Plant Engineering	Operations	Radiation Monitoring	Process	Section Total
Beginning of Month	4	773	236	0	17	1030
End of Month	3	761	237	51	16	1068
Net Change	-1	- 12	+ 1	+ 51	- 1	+ 38

The changes during the month consisted of 12 terminations, 7 hires, 60 transfers into and 17 transfers out of the Section.

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Reactor Section
Manufacturing Department
September, 1951

Safety Experience

There were no major or sub-major injuries in the Reactor Section during September.

Radiation Exposure

Removal of ruptured slugs from the reactors was accomplished during the month without over-exposure of personnel or spread of contamination outside established danger zones.

Training

The program for obtaining and training qualified supervisory personnel to fill future requirements was continued during September. Ten trainees are receiving on-the-job experience and 20 Technical Graduates are on assignment under the Rotational Pool program.

E. P. Lee
Manager
REACTOR SECTION

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Richland, Washington
October 3, 1951

MANUFACTURING DEPARTMENT
SEPARATIONS SECTION
SEPTEMBER, 1951

I. RESPONSIBILITY

Effective September 1, 1951, radiation monitoring responsibilities in the operating areas of the Section were assumed by the Radiation Monitoring Unit, Separations Section.

The responsibility of operating and maintaining the main supply fans in the Redox Laboratory building was assumed by Plant Engineering, Separations Section on September 12, 1951. Similar responsibilities were assumed in the 200 West Area Filter Building on September 16, 1951, with respect to the #4 filter unit, the #2 clearwell, #4 and #5 settling basins, mixing and flocculation equipment and associated pumps and piping.

II. ACHIEVEMENT

A. Operating Experience

1. Production Statistics

a. Operations

	B Plant		T Plant		Combined	
	Normal	Acid Wash	Normal	Acid Wash	Normal	Acid Wash
Charges started in Canyon Bldgs.	64	1	65	1	129	2
Charges completed in Conc. Bldgs.	66	1	64	1	130	2
Special charges-Conc. Bldgs.	-		-		-	
Charges completed-Isolation Bldg.	63	1	63	1	126	2
Average Waste Losses	2.1		2.2		2.2	
Average MWD/Ton	583		577			
Special Charges-Isolation Bldg.					10	
Average purity completed charges					98.9	
Material balance thru Isolation					100.9	

Separations Section

	B Plant Normal	B Plant Acid Wash	T Plant Normal	T Plant Wash	Combined Normal	Combined Acid Wash
Yield through process					98.3	
Average cooling time (days)					48	
Minimum cooling time (days)					41	

b. Power

	August	September
Raw water pumped, gpm	5,798	6,129
Filtered water pumped, gpm	1,314	1,138
Steam generated, lbs/hr	70,053	80,080
Maximum steam generated, lbs/hr	120,000	132,000
Total steam generated, lbs	52,120,000	57,658,000
Coal consumed, tons (estimated)	3,246	3,383

c. Waste Evaporation

	September	To Date
Gallons evaporated	538,980	2,284,179
Percent volume reduction	72.3	73.2

The average over-all evaporative rate was 555 gallons of condensate per hour. Necessary repairs accounted for the loss of 84 hours operating time.

d. Waste Storage

	Batches
Metal Waste reserve storage capacity - T Plant	628
1st Cycle reserve storage capacity - T Plant	1069
Metal Waste reserve storage capacity - B Plant	1014
1st Cycle reserve storage capacity - B Plant	410

Increase in number of batches over last month is due to anticipated waste volume reduction in runs to be processed.

2. Activities

a. Suppression of Radio-Iodine in Dissolver Solutions

Samples of the canyon ventilation air indicate the quantity of I^{131} released per day, while metal solution is treated with mercuric nitrate to a .0001M concentration, to be approximately 20 percent of that amount released prior to starting the mercuric nitrate treatment. It has previously

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been shown that mercuric nitrate addition to produce a .001M concentration reduced the amount of I^{131} released to approximately two percent of pre-test conditions. A .0005M concentration will be evaluated in October and will very probably be adopted as a tentative standard.

b. High Waste - First Decontamination Cycle

Product content of the first decontamination cycle by-product cake colution of Run T-11-09-D-34 was 55.41 percent. No reason is known for the abnormal result; however, it is to be noted that this was the first run processed through the new 16-2 centrifuge. Rework in Section 16 resulted in a final waste loss of 0.42 percent. The product effluent was processed through the Canyon and Concentration Buildings as a special run.

3. Special Operations

a. Acid Washes

Data are tabulated below which indicate the percentage of product recovered from the completed acid washes in terms of a standard charge:

Run	Extraction	Section 12 and First Cycle	2nd Cycle	Total 221 Bldg.	Total thru Process	Preflush B, E & F Cells
B-11-08-AW1	11.24	27.9	4.00	43.10	54.3	19.6
T-11-08-AW1	8.43	32.28	12.15	52.86	49.52	26.1

4. Schedule Variance

Actual production of regular material through the Isolation Building was 102. percent of the forecast made at the start of the month. Material actually started in the Canyon Buildings was 100.8 percent of the amount forecasted. This is especially noteworthy in view of the unscheduled shutdown of B Plant for three days (See Item: B.-1b).

B. Equipment Experience

1. Operating Continuity

a. All plants were placed in standby condition for the Labor Day holiday. Shutdowns and startups were effected without incident.

b. Operations in the B Canyon Building were suspended approximately 72 hours beginning at 4:00 p.m. on 9-1-51, when an unusual collection of liquid in the 302-B catch tank serving the 154-B diversion box was noted and subsequently jetted to underground storage. Although not substantiated, it is believed that the water came from some open lines to the 241-C Area which had previously been hydrostatically tested.

c. Rerouting of First Cycle Waste

Late in August the first cycle waste was diverted from the 109-BY tank to 112-BX tank since the former was filled to capacity. Unfortunately the new line which was placed in service leaked between the 221-B Building and the 154-BX diversion box, and it was necessary to reroute the waste through other lines. This failure is the second one to occur since the 154-BX was activated; the first failure occurred in a metal waste line. Plans are being made to excavate a portion of the first cycle waste line in an effort to determine the cause of the failure.

d. Some time was lost in T Canyon when it became necessary to replace both centrifuges in the first cycle decontamination Sections. One centrifuge had an old unreinforced type skimmer which failed and which will be impossible to repair because of high radiation levels. The other centrifuge is normal electrically and it may be possible to salvage the unit by replacing the dip tubes.

e. A scheduled sanitary water curtailment was in effect in the 200-West Area from 6:00 a.m. to 1:30 p.m. on September 16, while the filter plant was shut down to make the tie-ins and alterations necessary to place the new settling basins in service. All production areas operated on a limited scale during this period.

2. Inspection, Maintenance and Replacements

a. When the Redox 1B reactor column was backflushed some of the raschig rings were forced out through the open nozzle on top of the tower. By cutting an opening in the top of the column at the feed point, it was noted that construction forces had failed to install a retaining support grid for the rings. A grid was fabricated in two sections to permit installation through the six by nine inch opening. This opening was sealed by welding and the column was repacked with raschig rings through a second opening cut near the top of the column.

b. Because the sand in the layer of fine sand in the Redox Sand Filter causes too much of a pressure drop, about one foot of

this layer is being removed. No decreased efficiency of the filter is expected since the sand particles are not as large as those in the other filters. The work is expected to be completed by October 5th.

C. Improvements

1. Adoptions

a. The PBX telephone switchboard serving the 234-5 building telephones was removed and replaced with an automatic exchange, thus eliminating the need for a switchboard operator.

b. Reflux condensers have been installed in the vent lines from the tanks in the Isolation Building in which the thermal decomposition of hydrogen peroxide occurs. The condensers remove the moisture from the contaminated air thereby prolonging the life of the CWS Type 6 filter media in the filter boxes.

c. Regeneration of the silver nitrate dissolver off-gas reactors with silver nitrate has proven to be feasible and satisfactory.

2. Inventions or Discoveries

There were no inventions or discoveries of a patentable nature reported during the month.

D. Plant Development and Expansion

1. Project Status

a. Redox - Project C-187-D

Major work items outstanding include the installation of thermocouples (to be shipped 10-1-51), functional test of the silver reactors, revisions to the silo and canyon cranes, completion of ventilation balancing on the process side of the building, revision to the sand filter as noted in Item B-2b and wholesale replacement of Teflon gaskets.

Work on all components of the operability and capacity tests continued during the month. Actual boil-up tests in the process vessels were started and are proving to be of great value in uncovering major equipment, instrument, and design deficiencies as well as determining to a degree the limiting factors in equipment performance. The accumulation of

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quantities of metal shavings, dirt, grease, glass, et cetera, in the seats of the column letdown valves led to an extensive program of column flushing using water with air agitation.

Experience to date with the 1" Teflon connector head gaskets in 100 lb. steam service has shown that there is excessive extrusion of the material into the pipe under heat and pressure, and that the extended material tends to break off as a ring which eventually could plug a steam jet. The most successful corrective measure is the use of a Teflon impregnated asbestos unit which has been reamed to allow room for extrusion. Approximately 110 gaskets must be replaced in October in addition to 100 2" gaskets which are similarly unsatisfactory.

b. TBP Project - C-362

The present construction status is apparently lagging six percent behind the revised August 1, 1951 schedule. A major factor contributing to this delay is the continued shortage of welder-fitters.

The nitric acid vendor, General Chemical Company, is experiencing difficulty in obtaining some of the equipment for his plant. This situation is expected to delay nitric acid production by 45 days, i.e., until February 15. By procuring 180,000 gallons from another source, delivery can be delayed by General Chemical Company for a month or two with no adverse effect on TBP inventories.

Earlier sluice nozzle tests showed the nozzles caused "feathering" of the stream which would result in poor sluicing. A new nozzle was designed with straightening vanes, a polished inside finish, and a 2" straight section at the top of the nozzle. Tests on this nozzle were satisfactory. Approximately 80 percent of the water delivered was within a five foot circle at a distance of ninety feet.

c. UO_3 Project - C-361

A re-estimate of Project costs indicates that the total costs will not exceed the $2,200,000 authorized.

It is anticipated that Part "A" of the project will be completed and ready for acceptance by the Manufacturing Department not later than October 15, 1951. Special provisions have been firmed up during the month for the operation of the UO_3 Plant while construction of the C-362 project is being completed in other portions of the 224-U Building.

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d. RMA - Projects C-198 and C-413

It is tentatively planned to accept the RMA Line Construction Area from contractor personnel on October 15, 1951. This will require the completion of functional tests on Tasks II, IV, and VI.

E. Pertinent Reports Issued

Document	Title	Author
Unclassified	September Monthly Report-Separations, Plant Engineering	R. T. Jessen
HW-22338	September Monthly Report-234-5 Building, Operations	T. Prudich
HW-22300	September Monthly Report, Separations, Operations	V. R. Chapman
HW-22284	September Monthly Report Separations, Radiation Monitoring	A. R. Keene

III. PERSONNEL

A. Organization Changes

Effective September 1, 1951, concurrent with the inclusion of the Radiation Monitoring Units in the Manufacturing Department, A. R. Keene was appointed Head of the Radiation Monitoring Unit - Separations Section.

B. Force Changes

1. Number of employees on roll

	Monthly Roll	Weekly Roll	Total
Beginning of month	236	1027	1263
End of month	257	1092	1349
Net Increase	∕21	∕65	∕86

2. Personnel Changes

	Monthly Roll	Weekly Roll	Total
From Radiological Sciences Dept.	∕18	∕39	∕57
Transfers in	0	∕16	∕16

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	Monthly Roll	Weekly Roll	Total
Transfers out	0	-10	-10
Reactivates	0	⁄4	⁄4
New Hires	⁄1	⁄28	⁄29
Terminations	-1	-9	-10
Weekly to monthly	⁄3	-3	0
Net Increase	⁄21	⁄65	⁄86

3. Work Schedule

Approximately 87 percent of Operations personnel continued to work a six day week schedule for the month. This will drop to about 5 percent on October 1, 1951.

Plant Engineering Instrument personnel, comprising 18 percent of personnel in Plant Engineering continued on a routine six day week schedule. All other crafts worked on a six day basis as needed.

Shift personnel in Radiation Monitoring continued to work a six day schedule. A five day schedule is expected to be resumed during October.

C. Safety Experience

There were no major or sub-major injuries incurred by Separations Section personnel during the month of September.

The 200-E Area on September 25th achieved a record of 1000 days without a lost time injury.

D. Radiation Exposure

On two separate occasions, contaminated waste was inadvertently sent to the Process Laundry instead of the Burial Ground. The incidents were formally investigated and efforts intensified to prevent a recurrence.

An unusually high dosage rate of 125 rep/hr was reported over the 154-BX diversion box which was opened to repair waste line leaks. A field dosage rate of 470 mr/hr at the canyon building roof was caused by this intense radiation source. Personnel exposures were well controlled.

Stack air from the B and T facilities showed discharge rates ranging approximately from 5 to 30 curies I^{131} per stack per day.

Separations Section

The alpha activity of the cell exit air from the T Concentration Building was reduced ten-fold or more during the month. This improvement was achieved as a result of a study of air conditions within the cells, and tank to cell pressure relationships. It was found that at certain stages of the operations positive pressures within the tanks were created. This caused process vapors to be emitted to the cell atmosphere. To correct this condition extensive recocooning of the cell tanks was performed. In order to prevent the pressure from breaking the cocoon a standard assault mask canister was inserted as a filter and breather.

Manager
Separations Section

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TECHNICAL SECTION

September 1951 10/10/51

SUMMARY

Pile Technology Unit

Physics personnel participated in an Atomic Energy Commission nuclear safety review meeting. Subsequent detailed reviews at Hanford showed that a batch size of 375 grams of plutonium would not give rise to any nuclear safety hazards in either the Bismuth Phosphate or the Redox processes.

Preliminary specifications for the automatic temperature recording system for C Pile were issued. A plug board circuit which will allow a tape controlled card punch to be adapted for data transcription was developed.

Calculations have shown that thermal reflectors inside of the front and rear biological shields of C Pile would be needed for the most extreme case of front to rear enrichment. For a moderate case of enrichment such reflectors would be required only for the rear shield.

Testing of the pressurized discharging machine has proceeded satisfactorily.

A decision was made to request Sylvania Electric Products Company to prepare a number of Hanford slugs by powder metallurgical methods for study of the dimensional stability of these slugs during irradiation. Metal prepared by this method has a density about the same as alpha rolled uranium with a completely random orientation and very small grain diameter.

Separations Technology Unit

In the Canyon Buildings, new conditions of reduced extraction bismuth concentration and process volumes have been adopted as standard procedure resulting in a net savings of approximately $500 per run. The 4-5L B iodine silver reactor was successfully regenerated following ten months of highly efficient service. In the Purification and Fabrication Buildings, the recovery of aged oxalate supernates is being carried out successfully by blending with current supernates and recycling to the Concentration Building.

In the Redox Plant, start-up preparations have included equipment checking and boil-up tests in concentrators. An excessive pressure drop through the ventilation air sand filter was remedied by removing a one-foot thickness of

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G sand. In the Metal Recovery Plant power consumption tests on the Slurry Accumulator agitator were completed and indicated the need for some design changes. Pumps and agitators are currently being tested in mock-up. Pile Technology recommendations have resulted in an increase in product batch size from 300 to 375 grams.

Chemical development activities have been devoted mainly to studying the performance of the Fenske Stacked Extractor for possible recovery of 234-5 slag and crucible wastes and coupling of 2 BP and F-10-P solutions to the 234 operation. Studies have also been made on a semi-works scale to establish slag and crucible dissolution and filtration methods. The testing of a production model TBP pump for RAW service was completed successfully at the Johnston Pump Company plant. The Hot Semi-works reached 24 percent completion during the period.

In the research laboratory, the addition of mercuric nitrate prior to metal dissolution prevented the evolution of all but negligible amounts of iodine. Considerable attention was given the laboratory establishment of a "Recuplex" solvent extraction flowsheet for the simultaneous coupling of F-10-P and 2 BP to 234 (eliminating 231) and the recovery of slag and crucible wastes.

In the 234-5 development laboratory means for increasing the density of the peroxide filter cake are being investigated. The peroxide coupling of Redox 2 BP product is also being studied in an effort to improve the cake density. Experiments to test the suitability of a peroxide reduced Pu IV oxalate appear promising.

Analytical Unit

Research on an automatic titrator has been pursued intermittently for two years because of its prospective advantages in respect to permissible range of concentration, small sample volume, precision and speed. An instrument has now been placed in routine service for the determination of uranium prior to transfer to the Redox Control Laboratory. Sixty process development samples containing uranium in the range 10 to 1000 g./l. were analyzed with a precision of about ± 3%. This precision may improve with experience, since the major source of error lies in the sampling and pretreatment techniques. The small sample volume was immediately useful in that the majority of the samples analyzed were "Mini" mixer-settler samples available in volumes of less than 1 ml. Single determinations require 35 minutes elapsed time, but for multiple analyses one operator can complete a determination every 15 minutes. Confirming previous experience, phosphate was found to introduce no interference. However, special treatment was required for several samples containing boron and high concentrations of nitric acid.

A group of procedures for control of the Redox and Metal Recovery Processes were developed and placed in written form. These included: methods for determination of sodium, phosphorus, chromium, nickel, molybdenum, and boron in uranium oxide product; an indirect photometric procedure for determination of MIBC in hexone; a photometric procedure for determination of chromate; and a photometric procedure for determination of ferrous ion in centrifuge slurry solution.

In the normal course of counting instrument calibration for control of the Separations Process, the ASP counters have been related to a vacuum counter (ASVP) whose geometry could be physically measured. Incorporating recently

improved fabrication and geometry measurement methods in a revised vacuum attachment (based on Berkeley design) which eliminates side scattering of alpha particles, we have been able to show definitely that the long time geometry calibrations at 50.5% were low by approximately 1%. This work was based on standard samples mounted on platinum discs, the surface of which, as previously reported, causes inaccuracies after one usage. Since in all of the present control work stainless steel is now employed as the medium for mounting samples, re-determination of the geometry values of all counting instruments is now in progress, based on stainless discs and with the new ASVP attachments.

Technical Services Unit

Relocation of Technical Section activities previously housed in the main Building 101, Hanford, was completed on September 7. The Technical Shops are now located in Bldg. 1717 in 100-D Area, and Equipment Design is in Bldg. 1707 in 100-D. These buildings will serve as temporary locations for these activities until permanent quarters in the Mechanical Development Building in the Works Laboratory Area becomes available.

Design and fabrication of laboratory and multicurie cell equipment for the Redox Analytical and Plant Assistance Laboratory (Bldg. 222-S) continued to receive top priority in Equipment Design and in the Technical Shops. Arrangements were completed for the transfer of all non-exempt designers and draftsmen from Technical Services to the D & C Services Unit. The affected personnel will continue to work directly with Equipment Design, but on an assigned basis.

Difficulties in adjustment of the ventilation system continue to delay final acceptance of this important part of Bldg. 222-S, the Redox Analytical and Plant Assistance Laboratory. Investigation into the causes of the yellow discoloration of the marbelized white rubber tile floor covering continued, including samples laid in Bldg. 222-S as a final check on the several variables involved.

Phase I construction of the Mechanical Development Building shell in the Works Laboratory Area was completed and the building was accepted on September 24. Negotiations continued with the Dix Steel Building Company for the design of Phase II, which covers the interior construction and outfitting of this facility.

Field construction continued on the Radiochemistry Building in the Works Laboratory Area, with good progress made on the concrete work for footings and basement walls.

The subcontract for the construction of the Library and Files Building and the Badge House for the Works Laboratory Area was awarded to the L. H. Hoffman Construction Company of Portland, Oregon, on September 21.

Invitations to bid on the Plot Plan and Utilities for the Works Laboratory Area, and for additional sewage disposal facilities (Proj. C-199), were issued on September 27. Bid assemblies are to be available October 3, and bid opening is scheduled for November 7. Contractors are requested to bid on both projects but must keep costs of each segregated.

Alteration of the contract forms due to modifications in the prime contract caused the bid opening date for the Radiometallurgy and Pile Technology Buildings in the Works Laboratory Area to be set back from October 3 to October 10.

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The regular semi-monthly reports of certain Kr-85 computations were completed and forwarded to the A.E.C. During the month a request was received from the A.E.C. to (1) re-evaluate present computations using an alternate method of estimation, and (2) to comment on the feasibility and reliability of the proposed method. A study is in progress in compliance with this request.

Considerable work was completed in compiling a library of IBM punched card tables and calculator sub-routines for common mathematical functions. A method of calculating optimum interval tables from punched constant interval tables is in preparation. A method of solving simultaneous linear differential equations on IBM equipment has been developed. The 8-10 digit Card Programmed Calculator control panel has been redesigned to provide improved operation of the calculator. During the month the first major addition was made to the initial complement of IBM computing equipment. Machines received, installed and placed in service were: One key punch, one reproducer, one sorter, one collator and one interpreter.

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October 5, 1951

PILE TECHNOLOGY UNIT

SEPTEMBER, 1951

VISITORS AND BUSINESS TRIPS

Visitor	Date	Address	Purpose
F. J. Champlin W. A. Hartman T. O'Regan	9-21-51	GEL	P-10 Consultation
H. C. Mattraw	9-24/30-51	KAPL	P-10 Consultation

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Visitor	Date	Address	Purpose
D. E. Gaar L. G. Gitzendanner	9-25/29-51	GEL	Attend conferences and inspect equipment
C. D. Harris J. T. Patnovik	9-26/27-51	duPont-Schenectady duPont-Wilmington	P-10 Consultation

Name	Date	Place Visited	Purpose
R. H. Leyse	9-1/10-51	GEL and KAPL	Follow shop construction of Project C-410 at GEL and Discussion of In-Pile Experiments at KAPL
W. R. DeHollander	9-3/15-51	KAPL	P-10 Consultations
J. H. Bach	9-4/7-51	Westinghouse Atomic Power Division	Metallurgical consultations on zirconium program
D. P. O'Keefe	9-4/10-51	Westinghouse Atomic Power Division	Metallurgical examination of normally discharged slugs
S. Goldsmith	9-1/6-51	A.C.S. Meeting	A.C.S. Meeting
L. D. Turner	9-7-51	Westinghouse Atomic Power Division	Metallurgical examination of normally discharged slugs
P. F. Gast	9-10-51	A.E.C.-N.Y.O.O.	Conference on Pile Poison
L. D. Turner	9-10/11-51	KAPL	Metallurgical discussions of hot cell work
J. H. Bach	9-10/11-51	Sylvania Electric Products	Uranium Consultations
	9-11/13-51	ANL	Discussion of the zirconium program
R. H. Leyse	9-11/17-51	GEL	Follow shop construction C-410 at GEL and discussion of In-Pile
G. E. McCullough	9-12/14-51	Westinghouse Electric Corp.	Examine slugs. General special irradiations discussions

Name	Date	Address	Purpose
L. D. Turner	9-13/14-51	ANL	Metallurgical discussions of hot cell work
W. T. Kattner	9-17/18-51	Simonds Saw & Steel	Observe metal fabrication
J. W. Riches	9-17/18-51	Simonds Saw & Steel	Observe metal fabrication
J. F. Sullivan	9-17/21-51	GEL	P-10 Consultation
R. H. Leyse	9-17/30-51	GEL and KAPL	Follow shop construction C-410 at GEL and to discuss in-pile experiments at KAPL
W. T. Kattner	9-18/19-51	Allegheny Ludlum	Observe special metal fabrication
J. W. Riches	9-18/19-51	Allegheny Ludlum	Observe special metal fabrication
	9-19/21-51	KAPL	Discuss metal fabrication and related problems
W. T. Kattner	9-19/21-51	KAPL	Discuss metal fabrication and related problems
R. E. Nather	9-20/21-51	UCRL	Consultation on Special Irradiation
W. T. Kattner	9-21-51	Simonds Saw & Steel	Observe metal fabrication
W. T. Kattner J. W. Riches	9-21-51	Allegheny Ludlum	Observe special metal fabrication
	9-21-51	A.E.C.-N.Y.O.O.	Discuss metal fabrication and related problems
	9-24/26-51	KAPL	Discuss metal fabrication and related problems
	9-24/26-51	A.E.C.-N.Y.O.O.	Discuss metal fabrication and related problems
J. W. Riches	9-27/28-51	ANL	Discuss metal fabrication and related subjects
	9-30-51	Bethlehem Steel	Observe special metal fabrication

ORGANIZATION AND PERSONNEL

	August	September
Physics	43	41
Engineering	66	67
Metallurgy	43	53
Pile Applications	67	71
P-10 Project	72	72
Administrative	14	15
	305	319

The Physics Branch hired a physicist, terminated one engineering assistant, a laboratory assistant, and a technical graduate.

In the Engineering Branch, a chemist and two laboratory assistants were hired. A technical graduate transferred in from Project Engineering and a laboratory assistant transferred in from Stores. One laboratory assistant, an engineer, a physicist, and an engineering assistant terminated.

A technical graduate and a chemist were hired for the Metallurgy Branch. One technical graduate transferred in from Purchasing, one from the Minor-Construction Unit, two from Design and Development Unit, and six from Management-General. A general-clerk transferred to Metallurgy from D & C Section. A technical graduate and an engineer terminated. A metallurgist transferred from the Metallurgy Branch to the Pile Applications Branch.

In the Pile Applications Branch, one laboratory assistant was hired, a technical graduate was re-activated, one technical graduate transferred in from D & C Section, and two technical graduates transferred in from Management-General. Two engineering assistants and one laboratory assistant terminated. A metallurgist transferred to Pile Applications Branch from the Metallurgy Branch, and an engineer transferred from P-10 to the Pile Applications Branch.

P-10 Branch hired a new laboratory assistant. A technical graduate transferred in from D & C Section and one laboratory assistant from Manufacturing-Accounting. One technologist terminated. An engineer transferred from P-10 to Pile Applications and a steno-typist transferred to the Administrative Branch.

The Administrative Assistant to the Manager is on loan to the Pile Technology Unit, placed with the Administrative Branch. A laboratory assistant that was temporarily in the Administrative Branch until his "Q" clearance was received, terminated. A steno-typist transferred from P-10 to the Administrative Branch.

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CRITICAL MASS

Experiments were begun on untamped spherical reactors early in the month. The major purpose of these experiments is to determine the effect of a water tamper on the critical mass of plutonium.

A nuclear safety review has been made of the 231 building and process. The detailed results of this review are to be given in a future report; meanwhile, it is clear that a batch size of 375 grams is safe from criticality hazards. A similar review was conducted of the "Redox" process with the conclusion that a batch size of 375 grams is safe here as well. Further work may allow the "Redox" batch size to increase to about 400 grams.

IMPROVED PILE STRUCTURE

The measurements of the seven inch lattice are in progress. Preliminary figures for the buckling of the wet lattice indicate that it will be at least ten microbucks below that of the eight inch lattice. Rechecks of the measurements are being made at present.

The buckling as calculated from indium foil measurements of the flux appears to be lower than the value obtained from BF_3 counter measurements. No explanation has been found for this discrepancy as yet. The constant cadmium ratio values in layers 10 to 18 lead one to believe that the energy spectrum of the neutrons is constant in this region. Since it is from measurements in this region that the buckling is calculated, neutron energy spectrum changes are probably not the source of trouble. Nevertheless, it was noted that the cadmium ratio falls by about 15 percent between layers 18 and 24. This means that the cadmium ratio starts decreasing approximately 100 cm. from the top boundary of the pile. In contrast, it is found from horizontal flux measurements in layers 10 to 14 that the cadmium ratio begins decreasing only about 25 cm away from the side boundary. This difference will be investigated further.

An absolute measurement of the thermal neutron flux in the Test Pile has been made. The method consists in comparing the Test Pile flux to that in the Standard Pile by means of gold foils. The Standard Pile had been previously calibrated against the Argonne flux standard.

The result for a point 15 feet 7 inches from the outside edge of the shield in stringer number nine is

$$\text{flux} = 2.15 \pm 0.17 \times 10^6 \text{ neutrons per cm}^2$$

with the following pile operating conditions:

Shunt position:	1 ohm
Level galvanometer:	19.9 cm. deflexion
Control rod:	116.8 inches
Barometric pressure:	739 mm.

The major portion of the uncertainty in this determination arises from the uncertainty (± 7 percent) in the Argonne absolute neutron flux standard.

Some information on the sensitivity of this calibration to barometric pressure and control rod position has been obtained to indicate that changes in these do not affect the flux at the calibrated position by more than a few percent. Further work on this dependence should be done.

GENERAL LATTICE DESIGN

The neutron spectrometer to be used in the measurement of the xenon cross section was completed this month. Operational tests of the instrument are now under way.

Measurements of neutron and γ-ray distributions produced by the neutron beam impinging on a large tank of water have been made. These have been applied to the design of a beam catcher for the X-2 level at DR Pile. The design of this catcher is now completed. It will weigh about 8000 pounds and consist of a core of paraffin and boron surrounded by a jacket of high density concrete.

As a preliminary to the study of the graphite heating effects due to cadmium control rods, the photon flux due to an isotopic point source of γ-rays has been calculated as a function of distance from the source. The analysis is similar to that used for plane geometry.

In connection with the Test Pile calibrations, the effective cross section of a cadmium wire for pile neutrons has been calculated. A table of the results for various values of the parameters involved may be obtained from P. M. Thompson of the IBM group.

SHIELDING STUDIES

Initial measurements on the attenuation of pile neutrons in the Brookhaven concrete shield are complete. The data show that neutrons are attenuated in this type of shield with a relaxation length that gradually increases with shield thickness; as is the case in iron-masonite shields. The curvature of the concrete is smaller than that in iron-masonite and this is attributed to the lower slowing down power (by virtue of a lower hydrogen content) of the concrete. Nevertheless, because the rates of attenuation are nearly the same for large thicknesses of both materials, it is believed that the behavior of the penetrating neutrons is governed by the inelastic and large angle scattering of the iron.

As a direct comparison of the shielding effectiveness of the two materials one can quote an "average" relaxation length based on the best data available at present. Values for this are:

Hanford iron-masonite: $\tau_{av} = 6.3$ cm.
Brookhaven concrete: $\tau_{av} = 6.6$ cm.

It is to be remembered that these values apply to an overall attenuation of 10^8 and are appropriate for those pile neutrons which have penetrated 29 inches of graphite and 10.5 inches of iron before entering the biological shield.

An empirical formula has been obtained which represents the data obtained with the iron-masonite shield. The flux at the point x, F (x) is given by $F(x) = F(0) \exp(-.594x) + 0.0866 \exp(-.378x) + 2.38 \times 10^{-6} \exp(-.109x)$ where x is the distance in cm. from the thermal shield.

Work has continued on the radiation effects on physical properties of shielding materials. Gas evaluation rates have been measured for Portland concrete samples containing gravel aggregate and haydite aggregate. These rates are about 6 cm^3 per gram per day at a thermal neutron flux of 1.5×10^{13}. The gas was found to be 80 per cent hydrogen.

OPERATIONAL PILE PHYSICS

Background data on the two BF_3 counters continued to be recorded during the month. A new BF_3 counter to replace the defective near-side counter was installed during the shutdown at H Pile starting September 25. At present, its operation indicates the same defect as in the previous one.

A saturation curve of current vs. voltage was run on the General Engineering Laboratory designed high temperature ion chamber in F Pile at 100 MW while the pile was being shut down on August 29, 1951. The plateau at two ma current from 650 to 1900 volts is consistent with that at 0.85 ma obtained on June 5, 1951 at approximately 50 MW.

Preliminary specifications for the automatic temperature recording system in C Pile were issued on September 8, 1951. Suggested changes and additions have since been forwarded which include specifications of the tape coding system to be used in the transcription of data from tape to IBM cards. A plug board circuit has been developed which will allow the IBM type 44 tape controlled card punch to be adapted for data transcription with only minor modifications and no sacrifice in the key punch machine's flexibility.

Development of temperature recording equipment for the older areas progressed as expected. Relays have been requisitioned, Flexowriter design renovations have been proposed, and the fast one-second Brown Potentiometers are scheduled for delivery late in October. Consideration is being given to installing the pilot Flexowriter system at one of the old piles rather than at DR Pile.

A revision was made to Production Test 105-467-P, "Fringe Tube Enrichment," which provides for spacing the 15 eight-inch U^{235}-Al alloy with regular metal slugs in a region of approximately 80 percent of the maximum flux in H Pile. Provided the current metallurgical experiments to obtain good thermal contact between a can and an unbonded slug are successful, authorization will be requested to charge the enriched pieces unbonded. The alloy contains approximately 4 percent U^{235}.

GRAPHITE STUDIES

Pile Graphite - Distortion - Production Test 105-458-P

Graphite bore diameter traverses taken through process tube channels 1188-B and 3574-D by means of an electronic gage showed the bore profile to be rough, elliptically shaped, and considerably altered from tolerance dimensions. The continuous plot indicated an ellipticity of as much as 17 mils; no apparent pattern to the distortion was found with respect to position in the pile. Maximum and minimum diameters measured were 1.759 and 1.733 inches, respectively, for a nominal bore of 1.744 ± 0.003 inches. Variations of this magnitude have considerable implications in the heat transfer problems currently encountered in the piles, and may be an important factor in the control of graphite temperatures. A total of 20 traverses are planned to obtain a better evaluation of these data.

Preliminary evaluation of the vertical height traverses taken through the A test hole at the D Pile indicates the need for an additional traverse; this will be completed shortly.

Pile Graphite - Pile Annealing - Production Test 105-288-P

X-ray diffraction measurements made on mined graphite powders and cores cut from the tube channel 3574-D, a channel with four years hot exposure, indicated some pile annealing of the Co crystal lattice parameter beyond that obtained previously on a tube channel during a two and one-half year hot exposure. Although a trend toward saturation of graphite damage annealing is indicated, the results are not conclusive in this regard but do indicate the very low rate of pile annealing at temperatures equivalent to those in the hottest regions in the piles. It is apparent that graphite damage in the central bore region cannot be quickly annealed by allowing a process tube to run hot. In the fringe zones, where damage is greatest, the annealing rate is even lower and temperatures in this region would have to be raised to near central temperatures before beneficial results could be expected.

Pile Graphite - Physical Expansion

An examination of physical expansion and crystal lattice spacings for a large number of samples taken from the piles indicates that the correlation between these variables which exists for graphite samples exposed at 30° C. does not apply at the higher temperature experienced by the pile graphite. The data imply that Co lattice spacing is a conservative measure of physical length expansion at temperature above 30° C., and that the interdependency of these two properties is not as direct as previously supposed. Results from the controlled temperature exposure of graphite experiment, and samples from the controlled temperature test hole, will allow a check of this correlation.

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Pile Graphite - X-ray Diffraction

A correlation of graphite tube bore damage, as judged by crystal lattice expansion, indicated that the rate of damage at the outside edge of the fringe zone is about the same in the new piles, operating with carbon dioxide atmospheres, as it was in the old piles with helium atmospheres. This indicates that the tube bore temperatures in this region are not sufficiently different to effect a significant expansion difference in these two cases and that other means, such as overboring the process channel, or enriching the fringe metal, will be necessary to reduce the rate of graphite damage near the edge of the metal loading.

Controlled Temperature Exposure of Graphite - Production Test 105-403-P

The exposure history of graphite at various temperatures was normal for the month with average temperatures of 135°, 165°, 175°, and 205° C.

Graphite Burnout - Production Test 105-85-P

The third set of graphite samples exposed at an estimated 400° C. in pure CO_2 in the D Pile lost weight at the average rate of 6 percent/1000 days over a 341-day test period. Previous rates at the same temperature were 1.0 percent and 1.6 percent/1000 days for 89 and 213 days, respectively. Several explanations may be presented to explain the spread in these values; the principal conclusion is that these data are not in disagreement with previously reported burnout rates, which, because of the nature of the in-pile tests, always show a range of rates. The magnitude of the results confirm the serious nature of the problem at these temperatures, but only a correlation of all data allows temperature limits to be set.

Controlled Gas Atmosphere Experiment - Project C-410

The effect of pile radiation on the C-CO-CO_2 reaction is to be investigated under controlled conditions of temperature and pressure.

The C test hole heater has been assembled in the cooler jacket and is ready for water flow and temperature tests.

Assembly and testing of the gas system mockup continued during September. Considerable difficulty has been experienced with the moisture analyzer cells. Fabrication of the sample charging and discharging equipment has progressed satisfactorily and a mockup is being made for testing the charge-discharge procedures and operations.

Graphite - Surface Studies

Nitrogen desorption studies have shown that virgin KC graphite has a micro-pore structure similar to that reported previously for an irradiated sample. A predominance of pores with an average radius of about twenty angstroms was found.

Graphite - Mechanical Properties

Continued experiments confirmed the previous finding that graphite saturated with water is not materially effected by very rapid heating to 500° C. Internal steam pressures were not great enough to lower the mechanical strength of the specimens.

Compression tests made on samples of cold test hole irradiated CSF graphite, after varying degrees of thermal anneal, showed that both the ultimate compressive strength and Young's modulus fall off rapidly in the thermal annealing range below 500° C. The samples tested had a low initial exposure and the mechanical properties were annealed to near virgin condition by the 500° C. heat treatment. These tests are preliminary to compression tests planned to establish the mechanical properties of pile graphite and are being used to study the accuracy of the methods.

Graphite - Thermal Annealing

Transverse graphite samples, with short pile exposures at various temperatures, showed no permanent change in length on thermal annealing until temperatures proportional to, but considerably higher than, exposure temperature were reached. These phenomena will be carefully checked when additional samples are available from the controlled temperature exposure experiment.

HEAT TRANSFER STUDIES

C Pile Design Studies

Calculations have been made to determine the necessity for using heat reflectors between the thermal and biological shields in the C Pile if front to rear enrichment is used. Only the front and rear faces of the pile were considered. The purpose of the reflectors would be to lower the heat flow from the thermal to the biological shield and thus prevent excessive masonite temperatures in the latter. The calculations were made for three different degrees of front to rear enrichment. It was found that, with the most extreme case of enrichment, the presence of the reflectors would be desirable. For a more moderate case of enrichment, the reflectors would be desired for the rear face but unnecessary for the front. This case of enrichment is the most likely to be used. In the case of no front-to-rear enrichment, the reflectors are not needed for either face.

Work was completed on calculations of the flow rate and inlet header pressure to be used at the start-up of the C Pile. This work was done in conjunction with the Reactor Unit and is summarized in HDC-2327. Three alternatives were covered; a selection depends on the anticipated length of time before high power levels are reached or before high enrichment is used.

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The problem of preventing heat loss from graphite to the bottom thermal shield was examined in detail. This loss should be kept low; otherwise, low graphite temperatures will exist and excessive graphite damage might occur. In general, the heat loss may be decreased in two ways. A heat insulating layer may be inserted between the graphite and the thermal shield, or the temperature difference between the graphite and shield may be decreased by passing hot water through the shield. Analysis indicates that the largest rate of graphite expansion would occur at a point approximately two feet downstream from the edge of the active metal zone. Further study indicates that the use of hot water in the thermal shield would be more effective in reducing this expansion than would the use of the insulator. The details are given in HW-22216. At present, the gains resulting from the use of hot water over the use of the insulator are being weighed against the relative construction problems.

Tube Channel Thermocouples

A proposal has been made to install thermocouples in empty process tube channels in the piles as a means for determining graphite temperatures. Plans call for removing the vertical rod thimbles from the piles next spring, and graphite temperatures in the B, D, and F Piles are at present determined largely from thermocouples mounted on those thimbles. Calculations are being made to determine the effect of removing a process tube on temperatures in the lattice. In addition, the relation between the filler block temperature and that of the thermocouple in the channel will be calculated.

Slug Temperatures

A comparison has been made between calculated slug axial temperatures and experimental values obtained by the use of thermocouple slugs mounted in the pile. The temperature values were in reasonable agreement. The details of the comparison are given in HW-22189. Further calculations indicated that the maximum axial temperatures encountered at 550 MW operation are about 325° C. and at 650 MW about 370° C. for a pile with the present number of effective tubes. These values are based on the conductivity of unirradiated uranium.

Measurement of Uranium Slug Temperatures - Production Test 105-411-P

Special thermocouple slug assemblies are being prepared to measure the difference between central and surface slug temperatures during pile operation, the temperature drop across the slug film, heat generation after pile shutdown and slug temperature after water flow interruption following pile shutdown.

Conventional methods of drilling the small thermocouple holes have been unsuccessful. Accordingly, canned slugs have been sent to the General Engineering Laboratory for drilling by ultrasonic methods using "Cavitron" equipment.

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A special thermocycling autoclave for testing the required non-standard welds, is being fabricated and is 90 percent complete as is the machining of the thermocouple slug accessory fittings. Equipment has been ordered for measuring the thermal stresses in the slug cans during temperature cycling. The stress information is to be obtained as an aid in analyzing the causes of can failure in the piles.

Panellit Scram Times

A partial review has been made of the delay time which may be permitted between a Panellit alarm and the shutdown of the pile. The limit set on the delay is intended to prevent melting of the slug can in case of a water flow reduction or stoppage. Although the calculations are not complete, the indications are that it may be desirable to reduce the present 20 second delay period to about 10 seconds.

Full Scale Heat Transfer Studies

The operation of the full-scale tube test equipment has been delayed because of alterations to the 189-D Test Laboratory. However, the design of new heater tubes has been continued, and it is anticipated the equipment will be in operation soon.

Tube Flow Studies

Installation of equipment at the 100-F Flow Laboratory to permit detailed flow measurements has been completed.

WATER STUDIES

Laboratory Construction

The construction work on the 105-D Water Quality Laboratory was stopped on September 6, 1951, because of an over-expenditure of funds. A revised Project Proposal is being submitted for an additional $50,000 so that Phase I of Project C-424 may be completed. Estimated completion date is 30 days after approval of the revised Project Proposal.

Alum Filter Tests

Production Test 105-473-F, "The Use of Commercial Aluminum Sulfate for 100 Areas' Process Water Coagulation", HW-21924, has been approved and will be started in the near future. The start of the Production Test was first delayed by the time necessary to secure sufficient quantities of alum on the plant and secondly, by the unscheduled outage at the F Pile caused by a water leak. The test will begin, barring unforeseen difficulties, on September 30, 1951.

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Investigations by operating personnel indicate that it may be possible to use activated silica as a coagulation aid in conjunction with ferric sulfate. An investigation is being made to determine the feasibility of this process and the practicability of testing the process on a Production Test basis.

Film Formation Studies

Experimental apparatus has been designed to study the fundamental aspects of film formation and to determine the effects of turbulence, pH, surface temperature, and water composition on film formation rates. The data which will be obtained from this apparatus will supplement the data obtained from the water quality experimental equipment and will be of great use in separating the effects of the different variables.

Corrosion Studies

The high temperature corrosion equipment in the 105-D Laboratory is being revised. The construction work is practically completed, and it is anticipated that this equipment will be placed in operation during the coming month. The equipment will give data on corrosion rates at standard flows with process water up to temperatures of 150° C.

Project C-469, The Front Tube Corrosion Mock-Up, has been approved and the Atomic Energy Commission Directive received. Material procurement is now being completed, and it is anticipated that construction will begin on October 8, 1951. It is estimated that construction will be completed by November 1, 1951.

An informal request for funds to install an induction heater in the 185-D Corrosion Laboratory has been submitted and was approved by the A & B Committee. This equipment will be useful in determining the effects of several of the variables of corrosion and in duplicating in-pile conditions. Construction will begin immediately upon receipt of the Atomic Energy Commission Directive authorizing expenditure of funds.

Sodium Dichromate Elimination

Production Test 105-450-P, "Sodium Dichromate Elimination Test", is scheduled for recharging with heavy metal on September 28, 1951. Since the time of the unscheduled outage caused by plugged cone screens on the experimental tubes, modifications have been made by installing strainers so that it is reasonably certain that trouble of this nature will not occur in the future.

Pump Study

A study of the safety features associated with the process water pumping system has been completed, and it was concluded that the accelerational feature of the primary process pumps is not needed. A complete discussion is given in "Emergency Requirement Considerations for the Process Pumping System", HW-21356, W. C. A. Woods and R. H. Purcell to File.

Recirculation Cooling

A comprehensive survey of the work done in the past on the recirculation method for pile cooling is in progress. This survey's primary function will be to determine what problems exist and then determine what experimentation is necessary to solve these problems.

Power Recovery

The power recovery survey is continuing. The survey will cover in detail all the various methods of power generation utilizing the heat of reaction of the nuclear fission process for both present and future piles.

MECHANICAL DEVELOPMENT

Continuous Charging

Testing of the pressurized discharging machine has proceeded satisfactorily. It has been shown, under mock-up conditions, to be satisfactory in attaching to the nozzle, opening the tube, discharging slugs, closing the tube, and removing itself from the nozzle. Repeated cycles of uranium slugs and aluminum dummies have been made. Successful cycling has been achieved both when slugs were washed out by water pressure and when they were pushed out by a charge of dummy slugs. Tests have been performed with water alone and with a water-oil mixture as the fluid. Additional cycling will be done to determine the dependability of the machine in repetitive operation.

The unpressurized charging machine has been demonstrated to be thoroughly satisfactory in principle. Several columns of uranium slugs have been charged without difficulties other than those arising from overly-optimistic fits and clearances in the initial design. Improvements are being effected on certain of the components, and testing will continue.

Gun Barrel Deflection Tests

A final report on the Gun Barrel Deflection Test (C Pile) is in preparation and, concurrently, tests are underway on the Atlantic Hose flexible connectors for the C Pile pigtails. The latter are also progressing satisfactorily.

Core Graphite Tests

The final test report on "ruptured slug" removal from 105-C cored graphite is in process of formal publication. Meanwhile, the investigation of improved methods for gun barrel replacement has progressed approximately one-half way through the testing phase. Thus far, measures to improve entry into the graphite appear far more important than entry through the cast-iron thermal blocks. Accordingly, a retractable pilot head (bullet-nose) for the gun barrel is being designed to facilitate this problem.

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Horizontal Control Rods

The preliminary cycling tests of the C horizontal rod seal have shown the original design to be inadequate. After only a few cycles, extremely serious galling has repeatedly occurred on the 3S aluminum rod where it passes the hard metal gland assembly. Several measures are being investigated to correct this trouble; graphite gland rings, oil lubrication in place of water, and Molykote, a dry antigall lubricant, are being used.

More than half of the fabrication of equipment for the Horizontal Rod Mock-up has been completed. The test apparatus for this project will be finished ahead of the present promised date for delivery of the C Pile horizontal rod prototype.

Vertical Safety Rods and Third Safety Systems

Tests of several phases of the C Pile Ball 3-X system are being carried out concurrently. Ball flow rates have been determined through the prototype entry chute, and orifice openings have been selected to throttle the discharge flow to the capacity of the "flight conveyor" emptying mechanism, located beneath the pile. Simultaneously, a new prototype graphite stack is being assembled at the White Bluffs Test Tower which will duplicate entirely the C Pile VSR and Ball 3-X slot.

VSR drop-out times are being investigated with various types of lubricants--dry and semi-liquid--in conjunction with the sphincter seal. These tests will be conducted for final proof, at the No. 20 position at the D Pile; this is a thimbleless rod position.

Slug Damage Studies

Nearly 800 uranium slugs for Production Test 105-A60-P have been inspected and measured. Approximately one-third of these have been charged through the piles and are now undergoing final inspection for damage.

The first 1000 slugs undergoing Flow Laboratory damage tests with the high speed charging machine have been charged through the tube and are being checked and inspected for damage. The second 1000 will be similarly charged and inspected during October. No evidence of damage has been observed to date.

Rear Face Television

A project proposal covering a television rear face monitoring system is being prepared, and studies of the equipment and facility requirements are continuing. An operating mock-up will be built in the 189-D Test Laboratory.

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METALLURGY OF URANIUM

Fabrication

A decision was made to request Sylvania Electric Products Company to prepare a number of Hanford slugs by powder metallurgical methods for study of the dimensional stability of these slugs during pile irradiation. Metal prepared by this method has an average density about the same as alpha-rolled uranium and has a completely random orientation. The grain diameter can be controlled by the manufacturing process and can be maintained at about one-tenth of that resulting from Hanford beta phase canning.

The rods experimentally rolled in a continuous mill at Lackawanna, New York, August 27, were examined in the laboratory to evaluate the structure of the metal. X-ray diffraction studies indicate a new texture in these rods, i.e., the (110) direction and the (021) pole are oriented in the rolling direction in all rods. Some recrystallization has occurred in rods preheated in lead to 950° C., but no recrystallization is apparent in rods preheated to 1080° C. for the same length of time in a melted Li_2CO_3-K_2CO_3 bath. The amount of cold work is quite uniform in the samples received from eight rods. The evaluation of these rods is not complete.

An interim report, "The Processing of Uranium Rolled at 300° C. to 600° C., Production Test 313-113-M", HW-21881, was issued.

Physical Measurements

A new oil, tested in the slug dilatometer, operated satisfactorily at temperatures above those previously used. Use of this oil will make possible greater accuracy in predicting the degree of transformation from expansion measurements. The remodeling of the automatic recording dilatometer was completed.

Two documents were issued, (1) "Interim Report, Testing and Transformation of Canned Uranium Slugs, Dilatometric Method", HW-22016, and (2) "Mechanical and Physical Properties of Uranium", HW-22078.

Orientation Studies

Further inspection of data on cold drawn rods indicates considerable differences in the degree of preferred orientation. Interpretation of the data is difficult since no samples are available to show how severely the metal was deformed after rolling, but before drawing. It is possible that the sizing operation modified the orientation around the periphery.

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METALLURGY OF PLUTONIUM

Construction of the vacuum system and auxiliary furnace parts of the thermal analysis interferometer is nearly completed. The modifications to the hood which will contain the interferometer have begun. A special design of top quartz plate is to be used so that the sample length need be one-third that normally required.

METALLURGY OF HANFORD STRUCTURAL MATERIALS

Materials for Process Tubes and Slug Jackets

A review of the present zirconium programs has revealed (1) that the relatively high cost of the metal requires the development of a can recovery process before zirconium jacketing can be economically feasible and (2) that the use of zirconium-tin alloys does not appear promising since tin improves the corrosion resistance of low purity zirconium only while it decreases the workability of metal of higher purity.

100 Area Corrosion

Two tubes of metal with an average outlet temperature of 78° C. corroborated an average corrosion rate of 0.55 mils per month for central tubes and s showed a 25 percent greater rate for a central tube than for a fringe tube with the same outlet temperature. Two tubes of metal discharged at a concentration of 688 MWD/T with an average outlet temperature of 62° C. exhibited a corrosion rate ten percent greater than that predicted from extrapolated data of tubes discharged at normal exposure.

200 Area Corrosion

Work outlined in HW-21988, "Proposed Corrosion Testing Program for Recuplex Process", is well underway. In tests simulating slag and crucible dissolving conditions, eighteen runs have been completed. Preliminary corrosion rates were much lower than anticipated, but much more data should be collected in view of previous unsatisfactory performance of the stainless steels in environments containing halide ions.

Corrosion tests on samples of cast stainless steel melt pots for the UO_3 Process revealed high corrosion rates. Intergranular attack and the appearance of dendrites indicate inadequate heat treatment of the stainless steel.

The end caps on four coil headers in the blend tanks at the UR tank farm were found to have been fabricated of an unstabilized stainless steel. The problem was resolved by welding stabilized stainless steel caps over the original ones. Preliminary data from corrosion tests in the process environment indicate that corrosion rates are low for both of these stainless steels.

CANNING DEVELOPMENT

The feasibility of salt bath beta-treating of alpha-rolled uranium is being studied. Various quenching procedures for four-inch and eight-inch slugs have been investigated. Air cooling below the transformation temperature followed by a vertical water quench produces a minimum of distortion in the transformed slug.

Eight Inch Slug

Drawing H-4-1821 of the steel sleeve for eight-inch can assembly has been completed. Aluminum caps, made by impact extrusion of buttons stamped from plate, have been received and examined metallographically. The metal structure appears satisfactory.

Dimensions of 8.4 inches length by 1.331 inch diameter for the uranium slug core have been tentatively selected. These dimensions, with possibly an increased diameter, appear most satisfactory from a pile physics standpoint. The active stringer of these slugs will be 7.5 inches longer than the one now used. The plan is to eliminate the last five-inch perforated dummy in the rear pattern and to let the active stringer center lie slightly to the rear of the present center.

Cap Wetting

Optimum cap wetting by the Al-Si braze has not been achieved in tests using a wire brush to abrade the cap prior to insertion of the cap in the mouth of the can. Other methods to be tried are wetting by ultrasonics and preheating of caps in a lead bath covered with Al-Si followed by abrasion after the cap is brought up into the Al-Si layer.

Dross Formation on Al-Si

Small additions of beryllium to Al-Si were found to reduce the dross formation at the surface of a molten bath which was allowed to stand in air. Vigorous agitation of the melt resulted in the formation on the surface of a light dross which would readily be skimmed to regain a clean surface on the melt. Because of the severe toxicity of beryllium in any form, extreme precautions are necessary in its handling.

Welding Program

Slugs were welded using amperages from 70 to 130 following preheating of zero to two and one-half revolutions with rotation speeds varying from four to ten rpm, and arc paths of one and two passes. Various methods of preparing the cap prior to welding were tried, such as grooving out the Al-Si braze line, double grooving on the cap face, spinning over the can wall, and using filler rings in a groove. Several of these methods appear promising and will be more thoroughly investigated.

Electrode positioning quadrants were installed on the production welding machines.

New Construction

An estimate is being prepared by the Project Engineering Unit on the cost of a building to house canning development furnaces and induction heating equipment.

Mechanization of Slug Canning

The working committee has reviewed the 313 Building operations and recommended mechanization of can and cap pre-heat and pre-wet, slug and cap insertion, quench, component preparation, slug facing, and welding, and pre-frost test temperature equalization.

In connection with the development of a mechanized slug canning operation, a material superior to the stainless steel now used for baskets and tongs will be required to withstand the corrosive action of the Al-Si bath. It has been found that the carburized surface of a piece of Carpenter 883 tool steel resists wetting and attack by the Al-Si.

Cold Canning of Uranium Slugs

Four uranium slugs were cold canned by extruding the aluminum can over the slug. This process has produced a tight fit but no bonding of the can wall to the slug. Canned pieces held at 350° C. for 24 hours showed no diffusion of the uranium into the aluminum can.

Fuel Element Development

The nucleus of a group to handle the development of a new process for jacketing uranium slugs was established during the month. The current efforts of this group are directed toward setting up a program for this investigation.

RADIOMETALLURGY

Normally Discharged Slugs

An investigation has been started on seven tubes of regular metal that were discharged after 450 MWD/CT. Observation of 150 of these pieces pointed out a higher frequency of severely rippled slugs on material canned on December 15, 150, than among the accompanying slugs with other December and January canning dates. A previous examination of slugs at B Pile revealed that all the slugs in the tube which contained one of the five ruptures canned on December 15, 1950, were canned December 15, 1950, and had rippled surfaces.

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Eight normally discharged slugs from H Pile and two suspect failures from 3181-DE were examined at the Westinghouse Atomic Power Division's hot laboratory. These examinations confirmed observations at Hanford which indicated the two suspected failures were sound.

Underwater Viewer

An underwater viewer and camera are being installed in the 111-B water basin to facilitate the examination of irradiated slugs.

Radiometallurgy Building No. 327

Contracts for purchase of almost all of the standard and custom made equipment have been awarded to the lowest satisfactory bidders.

Invitations for bids have been sent out for the Building No. 327 of Project C-385. The bids are to be returned by October 10.

Equipment

The four foot, twelve inch swing Sebastian lathe has been placed into operation in Building No. 111-B.

A Zeiss metallograph has been removed from the 300 Area, repaired, and installed in 111-B to replace the Bausch and Lomb instrument which was unsatisfactory for photography. With the addition of extensions to the stage movement controls and with the modifications to the microhardness tester which are being made, it should be possible to make a complete hardness survey of transverse section of an irradiated slug wafer.

Preliminary tests with the double crystal X-ray spectrometer attachment indicate good resolution but low intensity of the diffracted beam which reaches the counting tube. Means of increasing the intensity are now being studied. A hot sample holder and an effective shielding system are being designed.

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In the glass lines, ten Production Tests were completed, a number being performed using only hydrogen when all radioactive work was terminated for the outages. The metal system for transferring product from the glass lines to a metal shipping container was completed, leak-tested, calibrated and placed in operation.

One glass line operator exceeded the working limit (35 uc of T_2O per liter of body fluid) but did not exceed the maximum permissible concentration (65 uc of T_2O per liter of body fluid).

TRITIUM DEVELOPMENT

Metal Line Improvement Studies

Current problems associated with metal line operation include:

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Changes in the metal line during the month include:

1. A mechanical modification was added to one of the Skinner solenoid valves such that entry into the line can be made without cutting and welding while still maintaining valve closure; to this addition, a thermocouple vacuum gage and Bourdon gage were attached. Two designs permit entry to the process stream either above or below the valve seat.

2. A flange was added in the flexible line between the one of the extraction furnaces and the metal line to facilitate future replacements of part of the line.

3. The extraction furnace hoods were modified to permit installation of the motorized cask hoists replacing the temporarily used chainblocks. One electrically operated hoist was installed.

Design features for continuous sampling of the metal line for mass spectrometric analyses have been formalized and fabrication is under way.

The stripper addendum to the metal line for recovery of tritium from air-contaminated product and from by-product streams of the process has been delayed. Procurement and fabrication are now complete while assemblage is 45 percent complete.

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Metallurgical Studies

The heat treating, canning, and inspection of Li-Al target slugs for correlation of the effects of heat treatment on extraction have been completed and the slugs have been released for pile irradiation.

Methods of polishing and etching 10 percent lithium alloy to be used by duPont are presently under investigation. The best method of polishing found to date involves the use of the regular sequence of papers with kerosene as a lubricant. Final polishing can be accomplished in the usual manner on the polishing wheels substituting kerosene for water. Immediately after polishing, the kerosene should be removed and a layer of a thick grade of machine oil applied. No satisfactory method of etching has yet been found.

The testing of equipment to be used in the Metallurgical Laboratory is under way to acquaint all personnel with their operation and uses.

Construction Liaison

During the construction and maintenance outages during the month, the following changes were made:

1. The ventilation supply systems were modified for increased flow (now 58,000 cfm) following which air flows were balanced and checked to see that they were adequate.

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2. The Chemical Warfare Service filters on the exhaust air from the Can Opening Room were replaced when dust plugged them and reduced the flow of air into the hood. Can opening had to be terminated until the filters were replaced.

3. An interlock system was reactivated between the ventilation supply and exhaust fans.

4. The air mask supply system controls were centrally located. The supply system itself was modified.

5. Parts of the air monitoring system were modified with activation of new additions.

The burial ground constructed on Project C-442 has been completed and has been activated. The air mask washing and drying facility has been placed in operation. Construction continued on the Metallurgical Laboratory, the Product Storage Building, the Urinalysis Laboratory, and the Hot Maintenance and Instrument Shop.

SPECIAL IRRADIATIONS

Gamma Irradiation of Insulating Materials-GEL-100

Insulating materials are being irradiated by the fission product decay gammas from exposed uranium pieces. New metal was placed in the special sample baskets on September 1 and September 22 following each metal discharge at 105-F. Because of the increased power level and product concentration, the flux intensity has been increased by a factor of at least three over previously obtained values. A revised flux measuring meter was prepared because the first readings were above scale (200 x 10^3 R/hr). Readings as high as 300 x 10^3 R/hr were obtained on September 22 and gamma decay curve data are being accumulated from the metal in two sample baskets.

Life Test of Fission Chambers-DPW-100

A life test under pile conditions is planned to evaluate the possibilities of using fission chambers for monitoring the pile neutron flux. An in-pile sample holder and special front face nozzle were designed and the sketches forwarded to the requesting laboratory.

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Special Irradiations

Monthly statistics on the Special Request Program are tabulated below:

P-10-A pieces charged	353
P-10-A pieces discharged	405
P-10-A pieces being irradiated (exclusive of H-10)	1411
Special Request samples charged	14
Special Request samplesdischarged	15
Samples on hand awaiting charging	466
Samples now being irradiated	328
Samples awaiting shipment	58
Samples shipped during September	3

100 AREA PLANT ASSISTANCE

New maximum power levels were reached during the month at B, D, F, and H Piles as the result of minor revisions of flattening patterns. Equilibrium operation in all the piles was maintained with very little fluctuation. The objective of a transition to thorium as the primary flattening material is proceeding approximately as scheduled with a total of 468 pieces now charged. Although the discharge of the H-10 loading was completed during the month, P-10 material will be used for H Pile flattening for some time to provide necessary flexibility in the poison pattern and to complete production tests involving special P-10 pieces.

Ruptured Slugs

Of the fourteen unscheduled shutdowns during the month, twelve were caused by ruptured slugs. Three of the ruptures were pushed in 22, 26, and 34 minutes during the allowable equilibrium scram time at B and DR Piles. These were removed by normal operating procedures except for higher than normal pressures of 40 to 60 inches of water on the supply headers. This procedure is useful in those cases where the ruptured slug is not stuck. One of the six ruptures occurring at D Pile was discharged in approximately 35 minutes and nearly half equilibrium level was reached before the pile died due to insufficient reactivity. The amount of flattening was subsequently reduced at D Pile to provide 40-45 minute scram recovery time. Calculations indicate that the cost of the excess reactivity required to extend allowable scram time 15 minutes would not amount to as much as the probable gain from rupture scrams, and the operating limitations of temperature and transient control would not be seriously affected.

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Pertinent data are tabulated below:

Tube	Date	Time In-Pile Days	Slug Power KW	Local Water-°C.	Slug Position	Canning Date	Type of Failure
1756-D	9/1/51	199	5.1	53	38 (est)*	12/15/50**	Cap
2293-F	9/2/51	446	5.3	46	33 (est)	5/17/50	Cap
1562-D	9/3/51	159	3.4	53	49	***	Not known
2061-F	9/5/51	243	2.9	58	54	10/2/50	Cap
1765-D	9/6/51	204	6.6	37	33 (est)	12/15/50**	Cap
1860-D	9/10/51	208	5.1	33	22 (est)	12/15/50**	Cap
0970-B	9/17/51	209	4.8	39	32 (est)	1/23/51	Cap
1479-D	9/19/51	246	7.2	50	33 (est)	12/8/50	Not known
3273-DR	9/20/51	188	6.3	68	48 (est)	2/13/51	Cap
1264-DR	9/20/51	164	7.0	34	20	***	Not known
2964-H	9/24/51	413	P-10	41	23	***	Cap
1288-B	9/26/51	288	6.2	60	28 (est)	11/7/50	Cap
1766-D	9/29/51	227	***	***	***	12/15/50**	Cap
3684-H	9/30/51	268	6.9	40	29	1/2/51	Not known

Two unscheduled shutdowns occured at the F Pile which were due to other causes. Tube 4677-F was discharged during the normal scram time after its outlet temperature apparently exceeded surrounding tubes by 20° C.

Water leaks in tubes 0890-F and 0893-F caused sufficient temperature distortion to require reduction in power level on September 22, 1951. The reactivity transient initiated by level cutting combined with the poisoning

* (Est) from weasel data

** It will be noted that four of the slugs which failed were canned on the same day. Prior to this month two other slugs which failed were canned on this date.

*** Data not yet available.

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effect of the water used up the excess reactivity held in the rod system and the pile was shut down on September 23, 1951. After a four-day outage, the leaks were finally located by raising the pressure on individual headers one at a time and noting the rate of accumulation in the drip leg. After the leaking header was found, a test was made to evaluate a new leak detection method. The method consists of forcing helium into one header at a time, expelling the water with the gas, and looking for helium in the pile atmosphere with a helium leak detector. Only about 50 psi of helium pressure could be developed in the header, but there was a definite indication of helium in the gas at the end of a half hour. In its present form, the method is promising but not positive. As the critical configuration on September 25, 1951, indicated less than 100 inhours poisoning effect from the water, no special discharge of the flattening pattern should be required while drying out the pile. A normal P-column startup was made on September 27, 1951.

A representative summary of the reactivity status of each of the operating piles for the end of September is given below:

Pile	B	D	DR	F	H	Totals
Control Rods	111	142	115	135	153	
Xenon	668	671	707	676	694	
Other SR's	31	39	25	46	15	156
Plant Assistance	19	6	5	13	21	64
Dummy Columns	10	16	6	36	50	
Hot Reactivity	1401	1385	1207	1364	1057	
C_o Allowance	-364	-390	-222	-452	-246	
Cold Reactivity	1037	995	985	912	811	

* Number of slugs of thorium metal.

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Gains approaching three ih/day were noted at DR as a result of being in the light phase of the pushing cycle. Average gains slightly over one ih/day took place at H Pile during its first long equilibrium run since May when no appreciable gain or loss rate could be detected. The D Pile lost reactivity due to entering the heavy phase of the pushing cycle, whereas B and F Piles showed little change.

Pile Operating Limits

The operating level of the DR and H Piles continued to be limited by boiling considerations. With the discharge of the H-10 load, which was completed by the end of the month, a power level increase of the H Pile is anticipated as soon as proper flattening adjustments can be made. The B and D Piles are primarily limited by the graphite temperature, little change in lattice conductance was noted during the month. The F Pile has been operating with graphite temperatures up to 410° C. under the provisions of Production Test 105-435-P and with this higher permitted graphite temperature is limited in level by the 85° C. maximum outlet temperature restriction.

Effect on Pile Reactivity of Cooling Water Temperature

During the testing of a heated water supply to one of the test holes in the DR Pile, it was noted that several inches of control rod movement were necessary to maintain a constant power level when the water temperature was varied. Further testing will be done to study this effect which indicates a possible positive water temperature reactivity coefficient.

Materials for Pile Control Rods

Specimens of boron stainless steel from the vertical safety rod which failed at B Pile were tested to determine the mechanical properties of the rod alloy. The results show that the material is so brittle that any binding between the rod and the thimble while the rod is in motion would very probably cause fracture of the rod. The material used does not conform to specifications, and it is probable that the pin used to hold the tip produced a stress concentration which led to the failure.

300 AREA PLANT ASSISTANCE

Test Pile

The 15 pieces of four percent U^{235} aluminum alloy material were tested uncanned in the metal stringer in the Test Pile. That the dih values exhibit no correlation with density, weight, or dimension figures determined by the Analytical group and may indicate lack of homogeneity in the alloy.

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Initial results of the flux-standardization project yield the value of $2.27 \times 10^6 \pm$ ten percent thermal neutrons/cm^2/second in the center of the graphite stringer for a 20 cm deflection of the power level galvanometer.

Fine structure of the thermal neutron distribution in the two central cells of Test Pile test hole #27 has been measured using reactivity techniques.

Precision of the data is of the order of 0.003 ih or about 0.1 percent in relative flux.

Canning

No outstanding process conditions which might be related to the development of wrinkles and ruptures show up in process control data for December 15; however, high bronze pot temperatures and a very large number of Al-Si rejects (17) were noted for G line. The need for a specification on the maximum allowable bronze temperature is being investigated.

PLANT SERVICE WORK

A number of X-ray diffraction patterns are being made to determine the presence of ruthenium sulfate in a mixture of redox solids. This work is being conducted for the Separations Technology Chemical Research.

Some aluminum sheet was reduced in thickness for the Analytical Unit.

INVENTIONS

All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	HW No.	Title
R. G. Wheeler	HW-22177	Method of Mounting Metallurgical Specimens.

Signed [signature]
G. E. McCullough
Head, Pile Technology Unit

GEMcC:lgd

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HW-22304

October 4, 1951

SEPARATIONS TECHNOLOGY UNIT

MONTHLY REPORT
SEPTEMBER 1951

VISITORS AND BUSINESS TRIPS

James W. Dutli, Los Alamos Scientific Laboratory, visited Hanford September 20-21 to discuss radiographic problems.

R. E. Burns, R. M. Wagner, M. H. Curtis and E. Doud attended the American Chemical Society Meeting in New York City September 2-6.

M. H. Curtis and E. Doud visited Knolls Atomic Power Laboratory September 7-8 for consultations on laboratory and hot-semiworks design. Mr. Doud visited Oak Ridge National Laboratory September 10-11 for hot semi-works discussions.

O. F. Hill attended the International Congress Society Meeting in New York City September 9-13.

James Dunn visited the Johnston Pump Company, Los Angeles, California September 4-6 to observe pump tests on TBP production units.

R. B. Richards, V. R. Cooper and B. Weidenbaum visited Los Alamos Scientific Laboratory September 10-12 for discussions of process problems at DP West.

B. Weidenbaum visited Dow Chemical Company, Denver, Colorado September 13-14 for plant design consultations.

W. S. Figg visited Argonne National Laboratory September 17-18, Knolls Atomic Power Laboratory September 19 and Brookhaven National Laboratory September 20-21 to inspect hot laboratory facilities.

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Separations Technology Unit

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	August	September
Administration	2	2
Special Assignment	3	3
Research	41	41
Chemical Development	82	82
Process	44	44
	172	172

Administrative-General: One Technical Assistant to the Unit Head was transferred to D&C and one Steno-Typist A was transferred from Utilities and General Services.

Research: One Tech. Grad. was transferred from Management General, and one Chemist (Jr. Col. Training Program) was terminated.

Development: One Chemical Engineer was transferred from D&C and one Draftsman Trainee was transferred from D&C. One Chemical Engineer and one Engineer Assistant were terminated.

Process: One Chemical Engineer was added as a new hire and one Chemical Engineer was terminated.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Process conditions have been standardized under Production Test 221-B-10, Process Volume Reduction as follows: (a) extraction bismuth concentration at 2.5 grams per liter, (b) first decontamination cycle volumes at 42 percent of the September 1, 1946 standard, (c) second cycle and the Concentration Building at 49 percent of the foregoing standard. The standard preceding the production test was with an extraction Bi:Pu weight ratio of 95 to 1 (approximately 4.5 grams bismuth per liter at 400 MWD/ton) and process volumes at 70 percent. Canyon Building total losses are increased by approximately 0.3 percent (Avg. 1.4 percent, old standard, compared to 1.7 percent, new standard), however, net cost savings are in excess of $500 per run. Greater net savings were realized with volumes reduced to 35 percent and 42 percent in the first and second decontamination cycles respectively; however, difficulties in dissolving the product precipitates precluded routine operation.

The average of nine assays of the alkaline coating removal waste indicate that the product loss per charge with nominal 600 MWD/ton metal has increased to 0.29 percent of an average run from 0.21 percent with nominal 420 MWD/ton metal.

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Separations Technology Unit

Production Test 221-T-15, Control of Radioiodine in Canyon Building Exhaust Ventilation Air, was continued with mercuric nitrate additions to dissolver solution at concentrations of 10^{-3} and 10^{-4} molar. Eleven samples of Canyon Building exhaust air (downstream of the sand filter) averaged 7.3 curies of radioiodine per day (average 1215 curies dissolver per day) when employing 10^{-4} M mercury. With mercury additions to 10^{-3}M, 0.18 curies were evolved per day (average 1381 curies dissolver per day). It is planned to increase the mercury concentration to 5×10^{-4} M since the results were erratic and marginal with 10^{-4} M mercury.

Increased amounts of radioiodine in the stack gas at B Plant were traced to failure of the silver reactor associated with the 4-5L dissolver. This was the only reactor not replaced or reactivated recently. This reactor was reactivated by spraying with silver nitrate solution on September 17, 1951. Subsequent operation, as indicated by the radioiodine content of stack gas at the fifty-foot level, was comparable to that of the 3-5R reactor.

The effluents from the T and B Plant settling tank cascades (Tanks 112T and 112B) have shown no significant change in activity since the combination of second cycle waste and Section 5 cell drainage has been in effect. B Plant effluent has been 16 microcuries/liter vs. 22 mc. for the preceding month and the respective values for T Plant have been 29 and 25.

Concentration Buildings

At T Plant, the lanthanum fluoride by-product precipitation digestion periods were extended, the centrifugation rate decreased, and rapid precipitation was effected during the bismuth phosphate by-product precipitation in an attempt to improve decontamination. Although preliminary results indicated some improvement in decontamination (average of PR Can maximum radioactivity readings of 150 mr/hr for 14 runs compared to 210 mr/hr for the preceding 50 runs) decontamination is not satisfactory. Production Test 224-B-6 will evaluate the addition of $BaSO_4$ slurries to the bismuth phosphate by-product precipitation step as a means for improving decontamination by barium scavenging.

Isolation Building

Essentially no change in the amount of product recycled to the Concentration Building was observed in the averages of eight B Plant and eight T Plant runs processed through the Isolation Building with a digestion period of one hour at 80°C. prior to the first cycle peroxide precipitation. The averages for the test runs were 4.0 percent and 4.8 percent respectively, whereas the averages of twelve control runs from each plant were 4.5 and 4.1 percent respectively. It was anticipated that polymerized plutonium would be destroyed at the elevated temperature if present in F-10-P solution in significant amounts with resulting lower peroxide solubility.

Plutonium recovered by 234-5 laboratory from analytical waste was successfully processed through one peroxide cycle.

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First Cycle Evaporator

Approximately 540,000 gallons of first cycle waste were evaporated with a volume reduction of 74 percent. The sludge content of the evaporator increased by 700 gallons to 2100 gallons total with no detrimental effect on the evaporation rate which has averaged 660 gal/hr. It is planned to attempt to remove this sludge with hot dilute nitric acid upon completion of the batch currently being evaporated.

Purification and Fabrication Plant Assistance

Recovery

Operating procedures for processing (removal of iodine, destruction of oxalate, and concentration) 234 Building supernatant solutions were established during the month of September. These operating procedures employ a process for handling supernatant solutions demonstrated by Production Test 234-1, Supplement A.

A failure of a glass lined evaporator in Recovery Hood 29 occurred during September; the first evaporator failure since startup. The failure occurred below the liquid level of a batch of supernatant solutions which was being evaporated and approximately 2.5 percent of a normal sample can batch was transferred to the retention pond with the evaporator-jacket effluent. The retention pond contents were pumped to the cribs to dispose of the liquid containing product.

Aloxite filters were installed between the reactor and the SNET in Hoods 6 and 7 since the results obtained by a similar installation in Hood 5 were an improvement over the original filter paper installation.

The routine sampling of SN-1 solutions was discontinued during the month of September.

Dry Chemistry

The weight of plutonium calculated from the weight of plutonium tetrafluoride produced plus purification losses during September was 102.1 percent of the amount of plutonium charged to the 234 Building by 231. Seven and four tenths percent of the batches processed through dry chemistry required rehydrofluorination.

Reduction

The average yield for 86 reductions made to September 25 is 98.3 percent, neglecting run Y-11-9-25 for which the reduction yield was 60 percent. This low yield for run Y-11-9-25 is explained by the fact that only 50 percent of the required calcium required for the reduction was added due to an inadvertent error.

A study was made of the feasibility and desirability of using a predetermined weight of calcium and iodine for all reduction charges. The weight of

calcium and iodine required for a 420 gram powder charge (PuF_4) has been recommended for use for powder charges weighing between 410 and 430 grams. During the month of August 70 percent of the fluoride batches weighed between 410 and 430 grams. It is estimated that approximately $140 per month can be saved in operating time if these procedures are followed. Documents HW-21825, HW-22285, and HW-22195 have been issued covering the feasibility study, experimental work and recommendations on this problem.

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Machining

The equipment necessary for machining to final dimensions is currently being installed in Hoods 17 and 18. Run books have been prepared as well as standard operating procedures in rough draft form for the operation. Density of the pieces will be taken after machining, and radiographs will be taken only after coating in accordance with current standard procedure.

234-5 Plutonium Recovery

Recovery of Stored Oxalate Supernatants

The processing of 30 lots of concentrated (SN-3) solutions by the addition of 2 lots of SN-3 per batch of SN-2, prior to the hydrogen peroxide addition and evaporation, have demonstrated that with 2.5 liters of 50 percent hydrogen peroxide the destruction of oxalic acid is virtually complete and 99 percent, or greater, of the iodine in the combined solutions is removed (as compared to an iodine removal of 96 to 99 percent with 2.6 liters of hydrogen peroxide). Observation of the 224 Building E-4 tank has shown no evidence of corrosion from the iodine remaining in the recycled solution.

Anomalous results, indicating the presence of both iodide and iodate in the final solution, are still being obtained. The effect of a further reduction in the hydrogen peroxide volume is under active investigation.

Recuplex Process

The preliminary engineering flowsheets for the Recuplex process have been completed. Equipment arrangement and process vessel design studies are in progress.

General

Statistical analysis of process data which was tabulated at the time the RG Line was producing numerous pieces with high densities has been made by the statistics group. This analysis which consisted of data taken during the time when high densities were being obtained along with similar operating

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data for two previous months indicate that the variables at the casting operation which can be measured are insignificant with respect to the high densities. The analysis does show however that an average increase of 0.031 g/cc occurred when a new pressing process involving helium admission was inaugurated. The occurrence of pits containing a hard core has caused difficulty in meeting specifications. No specific single cause for this has been determined; however, several possible sources of contamination were noted and corrective measures were suggested.

High MWD Material Processed

Eleven batches of product having an exposure of 648 MWD were processed and diluted at the reduction and melting stations to produce metal with a satisfactory neutron emission level. The eleven batches were combined with some 420 MWD material and normal recycle and eventually melted into castings. The average MWD ranged from 501 to 525 and the neutrons/gm/second varied from 45.7 to 47.2.

RM Line

Rough drafts of all run books and all procedures to guide the work called for in the startup plans for which Technical has the responsibility, have been completed.

REDOX AND URANIUM RECOVERY PLANT ASSISTANCE

Redox Plant

Equipment operation and checking was continued by the Separations Section during the month. Water boil-up tests are currently in progress on the uranium concentrators and PR Cage equipment. Preliminary data obtained on the uranium concentrators indicate that their capacity is limited to an instantaneous uranium production rate of about 5.3 tons per day without exceeding atmospheric pressure in the vessel.

During the column flushing operations, Raschig rings were forced through the IAP-IBF line on IB Column which indicated the absence of the packing support grid above the center feed section. Inspection revealed that the grid had not been installed by the vendor. A grid was installed and the extraction section was repacked through the upper hold-down grid. All other columns were checked for the presence of packing support grids by means of an "Audogauge" and were found to be satisfactory.

Canyon ventilation balancing revealed that a pressure drop of about 10.3 inches of water was sustained across the sand filter. This exceeded the designed pressure drop of 7 inches and left no reserve fan capacity. Practically all of the resistance to air flow was found to reside in the "G" sand layer due to the presence of excessive fines. A recommendation was made by the Technical Section that 16 to 18 inches of the "G" sand be removed. At present, pneumatic removal of one foot of "G" sand is in progress after which additional pressure drop determinations will be made. If no compaction occurs during removal, and the designed pressure drop is achieved, the filter is expected to remove 98 percent, or more, of the radioactive particulate matter from the air going through the sand.

Separations Technology Unit

Uranium Recovery Plant

In addition to assisting with preparation of the Uranium Recovery Technical Manual (see below), some time was spent following plant construction on critical items, and a start was made on revising operating procedures to incorporate changes required by recent equipment revisions.

Outstanding construction items included checking run-in and power consumption tests on the Slurry Accumulator Agitator in the 244-UR Process Vault, and following the packing of the fiber glass filters for the process vessels and the vault ventilation of the 244-UR Building.

It appears that the completion date of September 25, 1951, for the first cascade of the 241-U Tank Farm plus the 244-UR Process Vault will not be realized, although major items should be completed shortly after this date. Work on Project 351 (UO_3 Conversion) is progressing rapidly with the construction completion target date set at October 1, 1951. Work in the 221-U Building is still progressing slowly with only a few more tanks being added during the period. A number of pumps and agitators have been run-in in Mock-Up and the first pump is being installed in the Centrifuge Catch Tank, TK-14-2, of the 221 Building.

Uranium Recovery Technical Manual

On September 25 the preparation of this manual was about 74% complete. Five chapters were completed during the month, bringing the total number of chapters completed to date to thirteen.

REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Process Studies

A preliminary investigation was made into the feasibility of increasing the Redox Plant critical-mass-control batch size above the currently established 300-g.Pu nominal value, and the need for ANN-dilution of the IBP stream for nuclear safety was re-examined. While consultations with Pile Physics are continuing, it appears from the discussions so far that it will be safe to increase the Redox batch size to a 375-g. nominal (400-g. maximum) value, and that ANN-dilution for nuclear safety will not have to be resorted to at enrichment levels up to as high as 530 g.Pu/ton U. On the basis of conservative estimates of the Redox Plant plutonium production capacity as limited by the PR Cage (and based on a 530-g.Pu/ton U enrichment level), an increase in the nominal batch size from 300 g. to 375 g. and elimination of ANN-dilution would increase the plutonium production capacity of the Redox Plant from 36 Kg/month to 46 Kg/month. On the basis of more optimistic estimates, the PR Cage capacity, under the above conditions, should be as high as 58 Kg/month - the presently expected upper capacity of the Redox extraction battery as limited by the 2B Column. A separate report on this investigation is being prepared.

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Alternative flowsheet conditions for the current Recuplex solvent-extraction studies (see below) were given consideration during the month. This work resulted in issuing the following document:

HW-22208, "Tentative Recuplex Flowsheet No. 8B", issued September 21, 1951, by D. P. Granquist.

Chemical Engineering Development

Recuplex Solvent-Extraction Studies

A series of exploratory and scouting runs has been made in the 20-stage, Fenske Stacked Extractor using a solvent of 100% CCl_4 during the initial operation, and CCl_4 containing 15 vol.% TBP for later runs. The more important information obtained from the first twenty-four runs is summarized below:

1. The 8A Recuplex Flowsheet (HW-22005) employing a CAX (15% TBP in CCl_4) having a nominal density of 1.48 g/ml and a CAF' (slag and crucible) feed having a density of 1.40 was found to be inoperable because of the small density difference between phases encountered at the CAF' feed stage in the stacked extractor.

2. The new 8B Recuplex Flowsheet (HW-22208) in which the CAF' is diluted with an equal volume of water to a density of 1.2 was adopted to increase the density difference between phases at the CAF' feed stage to 0.28 g/ml. Using the 8B Flowsheet, the flooding capacity of the stacked extractor was approximately 1100 ml/min total throughput (sum of both phases).

3. At approximate 8B Flowsheet conditions with the CA Extractor operating on feeds simulated with C.P. chemicals, at 50% of the flooding capacity, U waste losses of less than 0.1% were obtained in four extraction stages. This corresponds to a probable overall stage efficiency for uranium transfer of 75 to 100% (equilibrium data, using uranium as a stand-in for plutonium, are not available at present for a more accurate determination).

4. Under 8A Flowsheet conditions, but with no CAF' being fed to the CA extractor, a flooding capacity of approximately 600 ml/min (sum of all feeds) was obtained. Operating at 50% of this flooding capacity, uranium waste losses of less than 1% were obtained in four extraction stages.

5. The flooding capacity of the stacked extractor operating under simulated CC (stripping) contactor conditions (100% CCl_4 and water) was approximately 3000 ml/min total throughput at a frequency of agitation of 400 cycles/min and an agitator amplitude of 0.31 in. A waste loss of 51% of the feed uranium was obtained in four stages under 8B flowsheet conditions when operating at a total throughput of 1060 ml/min, a frequency of 500 cycles/min, and an amplitude of 0.31 in. This corresponds to an overall stage efficiency of approximately 10 to 40%.

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Process Chemistry

Laboratory Filtration Studies - Recuplex Process

Slag and crucible from the reduction of uranium fluoride was dissolved in the laboratory under Los Alamos conditions, which employs a six hour digestion period at 120°C. prior to filtration to coagulate the silica. The dissolver solution containing on the order of 2.4 grams per liter SiO_2 was filtered through a 3 in. diam. D porosity Micrometallic sintered stainless steel filter plate. Hy-flow Supercel and Celite 521 were both employed as both a precoat and as a premix filter aid. Filtration reduced the SiO_2 content from 2.4 g/l (1700 ppm) to approximately 10 ppm producing a filtrate with up to 90% light transmission (657-millimicron wavelength) and disengaging times on the order of 50 to 100 seconds, compared with 190 to 300 seconds for the unfiltered slurry.

The use of glass cloth (supported on 1/4" mesh stainless steel screen) as a filter medium is being investigated, and results will be reported next month.

Interfacial Tension of Recuplex Solutions

A new DuNouy tensiometer was set up and calibrated with some standard solutions (benzene-water, CCl_4-water, benzene-air, CCl_4-air, and water-air). The results were within ± 1% of representative values given in the literature.

Interfacial tensions were determined on stream samples from Fenske Stacked Extractor Runs Fe-9-A and 17-A.

The interfacial tension for CAX-CAW from Run FE-9-A (which exhibited an abnormally low flooding capacity) was observed to be about 10% lower than for Run FE-17-A, which was a satisfactory run. It was also noted that the interfacial tension of the first system dropped rapidly with time when the two-phase system was allowed to stand, whereas the readings for solutions from Run FE-17-A remained constant (as do pure components such as CCl_4 and H_2O). This suggests that an unknown surface-active agent may have been present in the solutions from Run FE-9-A.

Equipment Development

Filtration of Slag and Crucible Solutions

Semi-works equipment designed to produce slag and crucible feed for the Recuplex solvent-extraction studies has been completed. The first dissolution and filtration was made September 26, using a dissolver charge of three crucibles with associated slag.

Corrosion Studies

Corrosion studies designed to evaluate the resistance of various materials to chemical attack by Recuplex process solutions are underway. The conditions existing in the slag and crucible dissolver have been simulated by dissolving representative portions of slag and crucible in the presence of test specimens of the materials. Test specimens have been exposed to both the liquid and the vapor during dissolving. A total of 20 dissolutions has been carried out. After each dissolution the solution is refluxed 24 hours.

In general all the parent metal stainless steels showed corrosion rates which were 2 to 3 times higher for specimens exposed to the vapor than specimens exposed to the liquid. There was little significant difference between the three parent metal stainless steel samples. Corrosion rates of samples exposed to the liquid are not excessive. Vapor corrosion rates of 25 to 35 mils per year can be expected. Except for the case of Type 309 SS, corrosion rates of sensitized stainless steel samples were not significantly different from the parent metal samples. By error an unstabilized Type 309 SS was employed and, as would be expected, excessive corrosion rates were encountered for the sensitized samples. Samples of Pyrex and cobalt glass exposed to both liquid and vapor were essentially unaffected.

Pump Development

Johnston Production Pump, THP Process, Pump 221-U-P-8-6, a 14-ft.-shaft deepwell turbine pump for service in concentrated neutralized RAW, was assembled with boron carbide bearing elements at the Johnston Plant. The pump operated uneventfully in the Johnston Co. test pit for 20 days pumping water at 45 gal/min against a 90 ft. head. Over the test period the shut-off head (no flow) remained constant at 123 ft. of water. A representative of the Technical Division was present during dismantling. Investigation of the test fluid revealed that the water contained a considerable quantity of abrasive concrete dust from the walls and floors of the Johnston Co. test pit (this was a new test pit), which rendered the test more severe than was expected. The boron carbide bushings showed no measurable wear. The bearing surfaces were highly polished. The journals under the boron carbide bushings showed no significant wear but three of the five journals were lightly scored to a depth which was estimated not to exceed 0.6 mil. Based upon the favorable results obtained from this test and upon the ease with which the pump was assembled using standard horizontal assembly methods, boron carbide is again confirmed as a suitable pump bearing material.

One of the production plant Potter Flow Meters which will be installed in the cross country neutralized concentrated RAW waste line has been received for evaluation. This instrument, which employs a turbine rotating on process-lubricated graphite-filled Teflon bearings inserted directly in the process stream, will be tested using a simulated, concentrated neutralized RAW at 82°C. Flow generation up to 50 gal/min will be provided by the Johnston P-8-2 production pump. The Potter meter has a reported range up to 50 to 75 gal/min. The turbine type rotor or sensitive element is mounted in a 1" diameter restriction in the 3" diameter waste line.

Decontamination Studies

Metal samples, coated with Amercoat 23, 33, and 55 and Phenoline #3, have been contaminated with 4-year-old $BiPO_4$ waste acidified with HNO_3. Subsequently the samples were decontaminated separately with water, 5% Versene in water, and 25% Friespan (a detergent) in water. Decontamination factors were as follows:

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	Water	5% Versene	25% Friespan
Amercoat No. 23	10^3	7×10^2	2×10^4
Amercoat No. 33	10^2	2×10^2	2.5×10^2
Amercoat No. 55	10^3	2×10^4	3.5×10^3
Phenoline #3	10^2	10^2	70

Hot Semiworks

Construction of the Hot Semiworks is 24 percent complete. During the month concrete was poured for 12 cell cover blocks, the ventilation air duct from the Hot Process Building to the filter, the filter walls, the Fan House floor pad, the stack breaching, the septic tank, the loading dock, and the second floor and roof of the Solvent Handling Building. Heating and ventilation equipment was installed in the Office and Change House and the painting of these buildings is 50 percent complete. Forms have been erected for the above-grade portion of the B cell walls. Framing of the Fan House is 80 percent complete. Excavation for the water mains has been started. Backfilling around the Hot Process Building is 50 percent complete.

SEPARATIONS PROCESS RESEARCH

Iodine in Dissolver Solution

The effect of mercuric nitrate on iodine evolution during dissolving was studied. Metallic uranium was introduced into solutions simulating dissolver solution at various stages in a cut. Evolution of iodine from the solutions during a one-hour dissolving period was determined as a function of $Hg(NO_3)_2$ concentration. With 10^{-4} and 10^{-3} M $Hg(NO_3)_2$ present, total iodine evolved during the seven stages studied was about 50 and two percent, respectively, of that when mercury was absent. With 10^{-2} M $Hg(NO_3)_2$, iodine evolution was negligible.

Iodine in the Redox Process

Contrary to a previous abstract report, recent data show that some evolution of iodine does occur during evaporative concentration of Redox IAW waste. This conclusion was reached as a result of laboratory studies using tracers other than plutonium to establish the de-entrainment factor for the apparatus used. One to two percent of the iodine present in a simulated IAW was evolved in the laboratory experiments. However, of the iodine which did evolve, not more than 0.5% failed to condense in the off-gas system.

Evolution of iodine during concentration of mixed Redox aqueous wastes and during evaporation of the concentrator distillate will be investigated.

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Ion Exchange Decontamination of Redox Concentrator Distillates

Decontamination by hydrogen-form Dowex 50 resin of a solution simulating that which will enter the second waste evaporator in the Redox plant is under investigation. Ionic composition of the solution was calculated from decontamination factors quoted for the various concentrators involved. Early effluent fractions from a Dowex 50 column show a constant activity level yielding a DF of only 20. This behavior indicates breakthrough of a specific activity. Characterization of the activity in the effluent will be followed by consideration of means to improve the decontamination.

The Recuplex Process - Flowsheet Studies

A flowsheet has been developed whereby a product solution 60 g/l Pu and 30-60 g/l HNO_3 is produced from the Recuplex Process by (1) using a dilute nitric acid solution (0.1 M HNO_3) for removing plutonium from the organic extractant, and (2) recycling a portion of the product-rich strip solution to the extraction column as a scrub solution for the organic phase. The flowsheet has been tested by a batch countercurrent run consisting of seven extraction stages, one scrub stage and six stripping stages. The aqueous feeds were F-10-P solution and simulated IIBP concentrate (8.5 g/l Pu), and slag and crucible solution. The organic extractant was 15% TBP in AMSCO 125-90W. The flows of the extractant, strip, aqueous (IIBP + F-10-P) and aqueous (slag and crucible) were 30, 15.4, 53.3 and 30 volumes, respectively. One-half of the product-rich strip solution (containing 57.9 g/l Pu and 34 g/l HNO_3 and at a flow = 7.7 volumes) was recycled and used for the organic scrub. (This plutonium, of course, is recovered in the extraction section.) The plutonium lost to the aqueous and organic waste streams was 0.1 and 0.13%, respectively.

Plutonium distribution coefficients have been measured between 30% TBP - AMSCO 125-90W and aqueous solutions containing nitric acid and ammonium sulfate. The nitric acid and ammonium sulfate concentrations were varied from 0.5 to 2 M and 0 to 0.6 M, respectively. The aqueous plutonium concentration (at equilibrium) was varied from 1 g/l to 60 g/l. These data and the equilibrium data which have been collected from batch countercurrent extraction and stripping runs with both 15% and 30% TBP furnish sufficient data such that almost any flowsheet can be developed or evaluated with a fair degree of certainty. These data can also be used in the carbon tetrachloride system as the plutonium distribution coefficients are, to a first approximation, independent of the diluent.

Solvent Research

Extraction and scrub studies with dissolver solution under both nitric acid salting conditions and acid deficient aluminum nitrate salting have shown fission product decontamination for several phosphonates which is at least as good as for TBP. In general, decontamination is better with acid deficient salting than with an acid system. In some cases ruthenium appeared to be readily scrubbed from the organic phase. The phosphonates had an E_a^o for Pu(IV) from 3 M HNO_3 which was about ten times the E_a^o from 0.2 M acid deficient 0.8 M $Al(NO_3)_3$.

Tri (β-chloroethyl) orthophosphate was found to be a poor extractant for uranium from 3 M HNO_3. This effect is apparently due to the strong inductive effect of the halogen on the electronegativity of the oxygen. Infrared data for the P⟶O stretching frequency have been obtained on this compound and a number of other orthophosphates as well as on some phosphonates and have been found to correlate well with uranium extractability.

Pulse Column Research

HETS values of 7 - 9 inches have been obtained for both Purex IA and IC operation at 25°C. with the valve-actuated pulse column using plates with 0.026 inch diameter holes as against an HETS of 15 inches for plates with 0.039 inch holes, all other operating conditions being the same. The throughput rate was 528 gal/sq ft/hr, but flooding velocities were not measured. Even lower stage heights were noted as 57°C.

Single drop studies during drop formation were made under Purex stripping conditions, and the extraction expressed as equivalent to that occurring in a certain length of free fall. An equivalent path length of about 16 cm was found during the formation of either a large drop over a long period of formation or a small drop in a short time of formation.

Extraction Equipment Research

A so-called "turbo extractor" is being tested under Purex operation conditions. The extractor is made in either a single or multiple unit and operates by impinging the two liquid phases against the two sides of a disc rotating at about 600 rpm. Good throughputs were observed. The single unit gave 1.0 stage while the three unit model gave 2.0 stages in a run which was incomplete. Significant features of this extractor include simplicity of construction and operation of the extractor.

234-5 DEVELOPMENT

Plutonium Peroxide

An increase in the density of the peroxide cake in the filter boat is desired in order to permit maximum throughput in the 231 Building operation and dry chemistry operations in 234 Building which is presently limited by the capacity of the filter boat - approximately 1600 ml. The use of 0.50 molar vs. present 0.15 molar sulfate at the time of precipitation has resulted in a plutonium density of 0.33 g/l. Further variations in precipitating conditions will be investigated with a plutonium density of 0.5 g/l or greater as the objective.

A single plutonium peroxide precipitation from simulated Redox 2BP and 3BP solutions following neutralization from 6.0 to 8.5 M HNO_3 to 2.0 M HNO_3 with 50 percent KOH or 15 M NH_4OH gave a waste loss (supernatants and washes) of approximately 5 percent. When neutralized to 4.0 M HNO_3 the loss was excessive 13 to 70 percent. The bulk densities (precipitated at 0.15 M $SO_4^=$) of the filtered peroxide in both cases were only 0.2 g/l (plutonium).

Plutonium Oxalate

Three runs were made on the precipitation of plutonium(IV) oxalate employing hydrogen peroxide (50 percent) as the reducing agent in an amount equivalent to reducing 40 percent of the total plutonium to IV (previous studies have indicated approximately 40 percent of the Pu in AT solutions is VI). The precipitate resulting from adding the oxalic acid to a final concentration of 0.043, 0.087, and 0.144 molar had a plutonium density of about 0.3 g/ml and exhibited solubilities of 0.054 to 0.124 g Pu/l. The lowest solubility occurred with the lowest concentration of oxalic acid. It is believed that higher densities will result from increasing the temperature above the 25°C. employed in the foregoing series.

Processing Plutonium Metal Turnings

Two procedures for processing metal turnings to permit incorporation into current production via conversion to either (1) a metallic mass or (2) a plutonium tetrafluoride powder were found to be promising. Yields of 98.1 to 99.2 percent of clean massive metal resulted from three runs in which 0.56 to 0.94 moles of iodine per mole of plutonium plus 10 percent excess calcium metal charge were fired with approximately 5 grams of plutonium metal turnings. Five batches of turnings hydrofluorinated via a two step process (conversion to PuF_3 with a 50-50 mixture of HF-Argon at 100°C. followed by conversion to PuF_4 with HF at 500°C.) resulted in yields of 98 to 99.9 percent and gave reduction yields ranging from 87.0 to 97.2 percent.

Scavenging Ba^{140}

The introduction of 0.5 g/l preformed barium sulfate together with 0.05 molar sulfate concentration in Tank A-1 in the Concentration Building accompanied by digestion at 75°C. appeared to be the most satisfactory of the various schemes evaluated for the removal of Ba^{140} by scavenging without encountering gross contamination of the 231 Building P-1 Tank solution with inactive barium. A supply of preformed barium sulfate was prepared by the group to permit a Production Test evaluation to be carried out in B Plant.

234-5 Quality Control

Three pieces were returned to the production line during this period. (1) One piece was returned three times, twice for high alpha counts and once because of a positive electrolytic check. (2) One piece was returned when a high alpha count from a sharp edge was obtained. (3) One piece was returned because of a large depression on the secondary surface.

Autoradiographic inspection of coatings revealed that very little improvement of coating quality was realized during this period.

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STACK GAS DISPOSAL

Reactivation of the 4-5L B Plant Silver Reactor

Direct monitoring of the dissolver off-gases downstream from the 4-5L B Plant silver reactor on September 12 confirmed the indications previously obtained in the routine sampling at the 50 foot level stack position that the reactor was operating at a lowered efficiency (80 to 90 percent). The Berl saddle packing was sprayed with silver nitrate solution on September 17 by the method described in HW-21957 (Performance of Replacement and Regenerated Silver Reactors - Operated at 375°F). Monitoring measurements made with the 50 foot level sampling facilities after the spraying treatment indicated that the I^{131} removal efficiency had been restored to the range of 99.9 percent. A direct monitoring of the dissolver vent gases downstream from the reactor will be made to determine the performance more accurately. The satisfactory operation of this reactor for a period of 10 months, after being severely overheated in preliminary mock-up tests, has established that under conditions of proper operational control the minimum useful life of a silver reactor should be one year.

Dissolver Cell Fiberglas Filter

The vent gases from all dissolver operations have been passed through the 3-5R B Plant filter since August 8, 1951 with no significant increase in pressure drop. The test will be in effect for three months. If at the end of this period there has been no significant increase in flow resistance, the use of the by-pass line during the coating removal process will be discontinued in all dissolver cell assemblies.

Particle Size Distribution of the Dissolver

Four cascade impactor runs were made with the 4-5L B Plant dissolver vent gases in an attempt to determine the particle size distribution of the radioactive aerosol. The aliquot of the gas stream was drawn from the downstream silver reactor position. The slides and filter papers have been submitted to the 222-B Control Laboratory for analyses.

Redox and TBP Sand Filter Installations

Permeability tests and sieve analyses of the Seattle and Montery G sands procured for the Redox and TBP filters respectively have established that the excessive pressure drop across the Redox filter, and consequent loss of ventilation balance, is caused by a higher percentage of fines in the "G" sand than specified; the TBP sand is well within specifications and no difficulty is anticipated.

Fiberglas Filter for Project C-362

The placing of the Fiberglas media in the filters treating the effluent gases from the U Area TBP solution make-up facilities was started on September 18. At this time it was determined that the specified No. 55 Fiberglas with silicones added to the binder for increased resistivity

Separations Technology Unit

to chemical attack, had not been procured. The No. 55 Fiberglas that was purchased did not have the silicone additive. Since the possibility exists that the unfortified No. 55 Fiberglas would not have a sufficiently long useful life, the decision was made to substitute No. 115K Fiberglas for the No. 55 Fiber in the filter that services all the effluent gases. The No. 55 Fiberglas was packed in the smaller tank vent filter. If this filter fails, the unit will be by-passed and the tank vent gases will be sent directly to the large filter.

INVENTIONS

All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	
W. L. Lyon	Report of what may be an invention in the bomb fusion of plutonium metal turnings.

R. B. Richards

R. B. Richards
Separations Technology Unit

October 4, 1951

RBR/ fmf

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ANALYTICAL UNIT

SEPTEMBER 1951

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VISITORS AND BUSINESS TRIPS

G. E. Fuson of the Consolidated Engineering Corporation, Pasadena, California, spent September 24-27 at the Hanford Works servicing the Consolidated mass spectrometer.

H. C. Mattraw, KAPL, spent September 24-28 at Hanford inspecting the new G.E. spectrometer and discussing difficulties encountered in the start-up of this instrument.

G. B. Barton spent September 4-6 in New York City attending the National Meeting of the American Chemical Society.

A. H Bushey, L. F. Kendall and F. W Albaugh spent September 10-13 attending the International Congress of Chemistry in New York City.

L F. Kendall spent September 6-7 at Leeds & Northrup Company, Philadelphia, discussing the Leeds & Northrup emission spectrometer. September 8 was spent at G.E L., Schenectady, discussing redesign of the X-ray Photometer.

E. W. Rebol spent September 10-17 inspecting various laboratories. September 10 was spent at G. E. Co., Works Laboratories, Fort Wayne, Indiana; September 11 at G. E. Co., Works Laboratories, Coschocton, Ohio; September 12-13 at G. E. Co., ANP Project, Oak Ridge, Tennessee; September 14 at G. E. Co., Major Appliance Division, Louisville, Kentucky; and September 17 at G. E. Co., Erie Works, Erie, Pennsylvania.

ORGANIZATION AND PERSONNEL

Personnel totals in the subdivisions are summarized as follows:

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Analytical Unit	August 31	September 30
Analytical Service	344	335
Analytical Research	38	37
Administrative	3	3
Division Totals	385	375

ANALYTICAL RESEARCH

Metal Recovery Process

The automatic coulometric titrator was moved into the Chemical Development Service Laboratory to allow final routine testing for the determination of uranium. Duplicate titrating units, operating from the same constant current source were installed to permit conduct of two titrations simultaneously. Approximately 60 samples, containing uranium in the range from 10 to nearly 1000 g./l. were analyzed. It was opportune that the instrument was available, since it requires exceptionally small samples and many of the samples analyzed were "Mini" mixer-settler samples of only 250 ul. volume each. The precision of the large majority of analyses was better than 3%, and it was observed that most of the error lay with sampling and pretreatment techniques so that improvement may be expected as experience is gained. As found from previous research, the presence of phosphate in several samples introduced no interference. Special treatment was developed to avoid interference from the presence of boron and high nitric acid contents in several samples. A single titration requires 20 minutes preparation time and 15 minutes of elapsed time during the automatic titration. With many samples one operator can complete one analysis per 15 minutes.

Procedures employing X-ray absorption techniques for the determination of U in UO_3 product and in various Redox and Metal Recovery streams were established. The X-ray Photometer to be employed for routine analyses is in good operating condition, and a supply of small, constant path-length cells has been placed on order for immediate delivery. Preliminary investigation showed that a group of five Redox and Metal Recovery process reagents may be analyzed conveniently and with adequate precision by means of X-ray absorption. As reported last month, the General Engineering Laboratory has redesigned the production model X-ray Photometer in a manner somewhat unsatisfactory for Hanford uses. It was learned from representatives of the Laboratory, however, that a satisfactory custom built instrument could be produced. This instrument would contain an X-ray tube of considerably higher power and would incorporate various improvements developed at Hanford. In addition, it would include improvements developed by G.E.L. and incorporated in their new design; principal among these is the use of ionization chambers rather than phosphor-photomultiplier tube X-ray pickup.

It is expected that samples of oxide product from the UO_3 plant will have 50,000 beta c/m from U-237, approximately 800 beta c/m from UX_1 and UX_2, and a maximum of 1500 beta c/m from fission products. As previously reported, the most direct and accurate determination of fission product beta will require the separation of fission products from U and Th (i.e., UX_1). Experiments have shown that with an organic solvent the relative order of elution from a paper pulp column is U, Th, Zr .... As reported previously, satisfactory separations have been established for U, but difficulties were encountered in separating the Th from the

fission products. It was found during the month that a mixture of acetone and HNO_3 will remove about 75% of the Th but that approximately 5% of the fission products are also removed. Modifications of the procedure which promise a satisfactory separation are under investigation.

Suitable procedures for the spectrographic determination of Na, P, Cr, Ni, Mo, and B in UO_3 product have been developed and prepared in written form. Still under investigation are procedures for the determination of Fe and Si.

Delivery of the mass spectrometer on order for the isotopic analysis of UO_3 product has been delayed for six weeks and is thus not expected until the end of October. The delay is occasioned by technical difficulties encountered in the use of an identical instrument in the Oak Ridge laboratories.

A blue cover report issued during the month as document HW-22090 is entitled "An Infrared Absorption Method for TBP After Extractions from an Aqueous Phase".

Redox Process

An improved model flame photometer purchased for the determination of sodium in Redox streams was tested and found adequate for the purpose. The instrument employs a smaller and hotter flame than previous models and thereby yields more intense spectra, produces less heat, and is better suited for enclosure in a gloved box. It has an improved aspirating system and requires less sample for an analysis. Since provision was not initially made to pipe both hydrogen and oxygen into the Redox Control Laboratory, tests were made to determine if propane-oxygen or hydrogen-air could be used for the combustion; satisfactory results were not obtained, so provision must be made to supply the recommended gases.

Process analytical procedures have been drawn up for the determination of MIBC, chromate, and ferrous ion. The former employs dichromate as the reagent to oxidize MIBC and provides for the photometric determination of the chromic ion as an index of MIBC content. The chromate and ferrous determinations are carried out by conventional photometric procedures that have been refined to allow the use of small sample sizes.

P-10 Process

A hood has been installed over the manifold employed with the new G. E. Mass Spectrometer, thereby permitting analysis of tritium-containing samples. A voltage stabilizer has been incorporated to correct for excessive line fluctuations, and the preamplifier has been partially shock-mounted to avoid difficulties resulting from building vibration. In agreement with the experience reported from KAPL, a more intense and better-focused ion beam has been obtained through introduction of a vernier adjustment positioning control of the source magnet. During the month, data were obtained relating the resolution and sensitivity to the slit setting in order to determine the optimum adjustment. Numerous minor electronic repairs are receiving attention. Considerable mutual assistance resulted from a visit of the KAPL mass spectroscopist during the installation of the instrument.

Several months ago a group of gaseous P-10 samples was distributed to KAPL, the National Bureau of Standards, Hanford Works, and Los Alamos. The former three

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sites have reported results on the proposed cooperative test. Agreement among results is satisfactory in some cases and poor in others. Examination of the data reveals no consistent pattern. Since KAPL and the Bureau of Standards were equipped to identify and determine minor impurity constituents, it had been requested that they do so. Both sites reported the presence of small quantities of tritiated methane. Subsequently, Hanford determined the cracking pattern of methane and re-examined the mass spectrometer tracings and confirmed the presence of this impurity. It was observed during this work that methane formed the tritiated products very rapidly in the mass spectrometer source head. The source of this contaminant has not been discovered. This test program was of considerable advantage in that it (a) indicated no definite bias at any one site; (b) revealed the presence of the methane contaminant; (c) suggested the mutual value of continued cooperation and the need for standards; and (d) showed the value of having two different instruments on hand in order to take advantage of the different combinations of sensitivity, resolution, etc., thereby afforded.

Agreement has been reached with P-10 groups of the Pile Technology Unit on procedure and equipment for in-line sampling and procurement and calibration of the necessary components is in progress.

Pile Technology Problems

It was previously reported that a group of slugs from the P-10 loading was separately processed and was being analyzed in order to allow a determination of the pile exposure given these slugs. A relatively large portion of the dissolver solution obtained has been decontaminated in the laboratory in preparation for the determination of Pu-240 and Pu-238. A separation sample taken from the corresponding AT process step was analyzed for Pu-240 with the spontaneous fission counter and for Pu-238 with the alpha energy analyzer; 5.16 wt. per cent and 1.5 wt. per cent, respectively, were found. The former figure, when compared to a previously established curve relating MWD to Pu-240 content, indicated an MWD value of 726. This figure is somewhat higher than the preliminary estimate reported by Pile Technology.

Three infrared analyzers were obtained and installed in the 108-D Shop for preliminary testing prior to conduct of a series of in-pile experiments designed to study the graphite-CO_2-CO equilibrium. Analytical Research personnel have prepared standard samples and are calibrating the instruments for the determination of moisture, CO_2, and CO, respectively.

General

Room 59 in the 3706 Building has been completely converted to a gas laboratory. An improved apparatus for the determination of carbon in metallic plutonium is being assembled in the room for testing prior to transfer to the 234-5 Laboratory. Likewise, equipment for surface adsorption measurement of the surface area of UO_3 product is being assembled in the room for testing prior to transfer to routine use. An apparatus for the determination of carbon in uranium, similar to the one referred to above, is being tested in the 3706 Building service laboratories; the apparatus has not yielded highly precise results, apparently because of an inefficient cold trap, which will be replaced.

Analytical Unit

During the month a G. E. Model H Leak Detector was calibrated for carbon tetrachloride and turned over to Building 321 personnel. As originally designed, the instrument was too sensitive, requiring modifications to permit operation in the 10-100 p.p.m. range.

Research on the direct reading emission spectrometer and the porous cup excitation technique was conducted during the month. Extensive modifications and introduction of new parts on the spectrometer were completed; further evaluation of exposure conditions and instrument settings led to a twofold increase in sensitivity obtainable from the porous cup technique.

Further work with the spectrographic procedure for determination of silicon in Al-Si has revealed that the sample disc surface, after taking a fine cut, may contain as much as 10% (relative) more silicon than the interior of the sample. Steps have been taken to inspect the chill cast procedure used in obtaining sample discs with the aim that the procedure may be modified to minimize the segregation.

Development work on the "chlorination procedure" for determination of U in Al-Si bath has been completed. It allows determination of U, which is present in a maximum amount of 0.3%, with a relative precision of ± 20% on a single determination. The procedure consists of oxidation of the metallic sample in a stream of chlorine, a technique which affords a partial separation of the silicon and tin, and subsequent dissolution of the chloride product and determination of uranium by coulometric or radiocounting techniques.

ANALYTICAL SERVICE

Work Volume Statistics

The following tabulation shows the source and volume statistics for samples on which analyses were completed:

	August		September	
	Samples	Determinations	Samples	Determinations
Process Control - 200	4,501	10,550	5,743	13,612
Process Control - 300	618	967	594	941
Water Control - 100, 700	1,011	3,827	975	3,888
Research & Dev. Programs	1,860	3,550	1,360	3,133
P-10 Control	388	3,899	198	1,975
Process Reagents	1,761	2,118	2,456	3,477
Essential Materials	1,030	2,040	882	1,625
Special Samples	426	7,664	329	4,409
Totals	11,595	34,615	12,537	33,060

A roughly 35% increase in Separations Process control work was more than off-set by a one-week P-10 Project operational shutdown to install new equipment and a general decrease in the number of special samples submitted, particularly those for spectrographic analysis.

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Analytical Unit

100 Areas Control

As a part of specification and acceptance tests on two demineralizers which were installed in the 202-S Building several water samples were analyzed for total hardness, phenopIthalein and methyl orange alkalinity, magnesium, calcium, chloride, sulfate, pH, silica, sodium and total solids. Complete river water analysis at the 100-F Area was initiated on a weekly basis at the request of the Pile Technology Unit; the data will be used for evaluation studies prior to and during the alum flocculation test which will be started in the near future. Assistance is being given the Pile Technology Unit in setting up equipment at 105-DR in order to determine equilibrium studies and rates of reaction of graphite burnout. Several mixtures of CO and CO_2 in helium are presently being analyzed on the mass spectrometer to calibrate each of these infra-red analyzers to be separately used for continuous monitoring of CO, CO_2 and water vapor.

In the P-10 Laboratory, erroneous mass spectrometer results have been obtained when samples were run which contained high amounts of hydrogen, (50-100%). A consistent mass 4 peak, either He^4 or HT, was present which could not be readily explained since the samples were from "cold" developmental lines where no He^4 or HT was present. Investigation showed the peak to be HT. Further checking of the instrument revealed that when samples containing high amounts of hydrogen are introduced into the leak and manifold the gas acts as a scrubber and removes HT which is adsorbed on the inner manifold wall and does not pump out under ordinary conditions as evidenced by no mass 4 peak being present on the blank scan. This situation has been corrected by flushing the leak and manifold with a small portion of the sample gas, which cleans the manifold of HT, and then admitting another portion of the gas to be used in analysis.

The CN Mass Spectrometer was inoperable two days during the month due to a burned out filament. It was felt that this occurred as a result of age of the filament rather than faulty mechanism in the instrument.

A Sorensen voltage regulator has been installed on the G. E. Mass Spectrometer in order to stabilize excessive line voltage fluctuations. It was found that normal line voltage caused instability of the power supply and amplifiers thereby decreasing the instruments sensitivity so that results were in error.

200 Areas Control

A sanitary water outage was scheduled in the 200 West Area on September 16 to permit construction forces to effect the tie-in of the new filter unit at 283 West. No difficulties were encountered during the outage and a total of 55 man-hours was charged to the unassigned time code (140).

Recent data obtained by the Methods Control group and confirmed by the Analytical Research personnel (HW-22075-R, Analytical Unit Monthly Report) proved the necessity of applying the + 2% backscattering correction to the 6-1-MS and 6-3-MR plutonium assay results. The application of this correction was started on September 1; accordingly, the overall material balance is expected to drop by 2%.

A synthetic 6-1-MS (starting solution) sample has been prepared by Analytical Research and is being analyzed for Am-Cm once per week at the 222-B and -T Laboratories. This program will be continued for an indefinite period as a check on

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Analytical Unit

the analytical technique and method.

Considerable difficulties have been encountered in the 222-B Building Laboratory with the Falling Drop apparatus for specific gravity determination. These have included trouble with the micro-switches slipping off the brass contact rail with resulting loss of control arm movement, breakage of the plastic case containing the micro-switch due to insufficient bevel of the brass rail, mercury leakage from the Emil Greiner pipet, failure of pipets to lower completely into the sample and difficulty in maintaining constant temperature control. The micro-switch trouble has been remedied and the remaining difficulties are being studied with the help of Instrument personnel and the Technical personnel responsible for the development of the equipment.

In the 234 Building Laboratory, on September 9 a short circuit destroyed the three variacs of the fluoride analysis equipment to such an extent that repair was impossible, rendering the entire assembly inoperable. New equipment installed included fuses to prevent re-occurrence. Installation and blank runs were completed on September 15 and the accumulated backlog of analyses was worked off by September 17. Since all analyses were up to date when the suspension of analytical work occurred, no lost time was experienced by the Separations Section.

Based on data submitted from the analyses of 74 recent AT samples, the relationship between the observed chemical assay and the specific gravity has been re-evaluated and documented by Statistics in HW-22134. The control limit, with any calculated AT assay based on the equation: AT (g/l) = - 1131.04 + 826.76 x Specific Gravity, is now ± 14.78 g/l (99.0% Confidence). Plans were made to adopt the new control limits at the 231 Building Laboratory on October 1.

Deletion of the SN-1 (supernatant from the plutonium oxalate precipitation) sample as discussed in HW-21697, 234-5 Program Committee Meeting, was accomplished on September 1. Based on present production schedules, it is estimated that the discontinuance of this sample will result in a saving of 350 man-hours per month of analytical time.

Several items of analytical assistance were provided the Plant Assistance groups in the 234-5 Building. Flushing of the RM line with ceric solution as a check on sampling techniques, agitation, etc. was completed during the month. A ferrous sulfate titration was used to determine the ceric content of several samples. Four AT samples from P-11 material were analyzed spectrographically. Because of off-color supernatants from the peroxide precipitations, poor purification was suspected; however, the analytical results indicated normal impurity content. Spectrographic analyses of seventeen samples, primarily for aluminum, magnesium, chromium, iron and lanthanum contaminants, were made to evaluate the possibility of coupling the Redox to 234-5 Process with one intermediate peroxide precipitation.

To eliminate the sources of trouble in the present cupferron extraction procedure prior to spectrographic assay noted in last months report, HW-22075(R), two changes were made. Separate standards containing only the alkali elements and only the other elements eliminated inconsistencies due to the unusual effect of the former on the excitation behavior of the latter. An additional nitric acid

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evaporation of the aqueous layer from the extraction eliminated much of the subsequent carbon deposit on the electrodes. The changes listed above have been so recently completed that comparative data under process control conditions are not available. However to roughly check the reproducibility and accuracy of the new procedure a preliminary standard containing no plutonium was prepared and analyzed and the results compared with those obtained by direct evaporation and sparking of the same standard solutions. A summary of the data below indicates reliability within a factor of two.

Element	Ca	Mn	Cr	Sr	Al	Ba	Cd	La	Ni
Nominal Value	100	100	250	250	1000	1000	1000	1000	1000
Direct Spark - 234-5 (Av. 6)	104	98	220	415	470	1550	980	1950	1040
Revised Cupferron Extraction Procedure - 234-5 (Av. 6)	180	120	675	350	555	1925	1375	1360	1690
Direct Spark - 3706 (Av. 2)	100	50	250	500	250	1000	500	500	250

300 Area Control and Special Services

In support of the electrolytic process for recovery of the tin scrap received from Hanford Works, the U. S. Bureau of Mines Station at Albany, Oregon, requested determination of uranium in twenty-two samples as a check on their analytical methods. The samples of anode tin were analyzed by the "Fluorimeter Method" and found to contain approximately 0.2% U and the samples of tin dross were analyzed by the "X-ray Method" and found to contain approximately 6.0% U.

The absolute density of approximately seventeen slugs of aluminum containing U-235 was determined for Pile Technology without any difficulty. The original weights were taken to check the shipping report and the density values correlated with dih values as a non-destructive test to determine the U-235 content.

The Industrial Engineering group, while evaluating fuel consumption by the various area steam plants, have submitted a large number of coal samples to the laboratory for analysis. These coal samples are being analyzed with and without moisture removed to see what effect drying has on BTU values. To date the two compare favorably as follows:

BTU's Without Drying	BTU's With Drying
11,131	11,236
10,118	10,089
9,742	9,715

In addition samples of the off gases from the coal during drying are to be taken to determine whether there is a breakdown in coal to liberate illuminating gases which in turn will cause a decrease in BTU's. These tests are in process in the laboratory.

These laboratories were involved in several other problems of unusual nature. A recent large shipment of floor wax was analyzed for the Janitor Service group

and found to be below specification in Carnauba wax content. The below specification material was found to contain an appreciable amount of resin which indicated an inferior grade; consequently, the material was rejected and replaced. Because of high pressure drops through a new filter for canyon ventilation off-gas in the Redox area, the particle size distributions on two samples of Seattle and Monterey sand were determined. The Seattle sand, which was apparently causing the trouble, was found to be out of specification because of a high percentage of fines. A degreasing agent "Kelite" was submitted for analysis by the Industrial Medicine group. This agent was found to cause considerable irritation to the hands of mechanics and after careful qualitative analysis for common irritants, phenols, cresols and creosote were found to be present.

In the study of direct fluorination of plutonium oxalate, the Separation Technology Unit's Research group used cerous oxalate and ceric oxide as stand-ins for plutonium salts, and used the two freons, $F_2ClC\text{-}CClF_2$ and $CHClF_2$ as fluorinating agents. Several samples of the finished product were submitted to the laboratory for fluorine and carbon determinations. The Willard-Winter Method, distillation of hydrofluosilicic acid followed by $Th(NO_3)4$ titration, appears to give satisfactory results for the determination of fluorine. Another problem concerned the determination of UNH activity coefficients in the presence of $Al(NO_3)_3.9H_2O$ and eventually other nitrates. They hope to show that the activity coefficients are dependent only upon ionic strength and independent of the particular salt employed. In connection with this study the laboratory has been requested to determine UNH and $Al(NO_3)_3.9H_2O$ within 1% of the true value. The $CrSO_4$ Method for UNH and the acidimetric titration of Al are proving satisfactory.

222-S Building and Chemical Development Service Laboratory

Continued difficulties with the balancing of the air conditioning system will delay final acceptance of the 222-S Building until the first week in October. Meanwhile some of the laboratory equipment has been set up on the benches for procedural training, principally in fission product analyses. The "cold" laboratory (Room 4-M) has been readied and some essential material analyses are being made. The sample storage and counting rooms have been set up and all counters (ASP, BGO, Shonka) are ready to go. Considerable work remains with regard to setting up the equipment to remotely handle the heavily shielded type of sample container.

A letter from the Plant Assistance group outlined the analytical requirements for the control of the Redox Process. A number of changes from original estimations were evident, the most notable being a decrease in fission product and a corresponding increase in sodium analyses. The resultant manpower requirements will remain unchanged.

A large number of samples from the "Mini" extractor have been analyzed for the Process Chemistry group. Many of these samples are less than 150 microliters in volume and require the use of micromethods. One of these, a determination of uranium, employs a five microliter sample in an autotitrator developed by the Analytical Research group. The uranium is reduced to U(IV) by passing the solution of the sample in a dilute mixture of $FeBr_2$ and HBr through a column of granular metallic lead and thence into the titration vessel. The reduced solution is blanketed with CO_2 and electrolyzed by a constant current. Bromine, which is generated at the anode, oxidizes the uranium to U(VI), with $Fe^{2,3}$ acting as

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a catalyst. The current and the timer are cut off automatically by a triggering mechanism at the instant an excess of bromine is generated, which occurs when all the uranium is oxidized. By recording the current in milliamperes and the time of duration of the titration in seconds, the grams per liter of uranium in the sample can be calculated. The most frequent causes of error to date have been faulty electrodes, air oxidation due to inadequate flow of CO_2 through the titration vessel, and fluctuations of the current. When the setup has been operating properly, samples of known uranium concentrations have been analyzed giving results deviating less than three per cent from the known values.

Methods Control

The following table summarizes the results of the routine geometry determinations made on all of the ASP and IDL counters in the Area control laboratories. The accepted value is 50.5% for the ASP unit. The IDL's are maintained on the best operating plateaus, since the geometry level is specific for each instrument. A satisfactory counter performance for routine control is indicated by the results. The 234-5 Laboratory experienced excessive counter breakdown difficulties, however.

Alpha Counter Standardizations

		August		September	
Laboratory	Instrument	Av. Geometry	No. Tests	Av. Geometry	No. Tests
3706	ASP	50.43	29	50.48	34
	IDL	50.53	18	50.50	19
222-B	ASP	50.48	82	50.47	77
222-T	ASP	50.49	83	50.48	113
231	ASP	50.46	51	50.50	57
234-5	IDL-1	50.99	11	51.02	7
	IDL-2	51.16	9	50.99	3
	IDL-3	51.18	14	51.07	29
	ASP	50.43	10	50.47	16

The investigation which was originally undertaken primarily to establish the accuracy of the two per cent backscattering correction required in substituting stainless steel for platinum as the mounting medium for alpha counting, has been extended to a review of the geometry of the ASP type instruments. The presently used geometry of 50.5% is based on the comparison of the ASP type instrument with the ASVP type instrument using a platinum disc consisting of 10 pie sections. In the comparison, all 10 segments are counted at one time in the ASVP and individually in the ASP. Several months ago the vacuum attachment of the ASVP instrument was redesigned to incorporate improvements suggested by the University of California, Radiation Laboratory (Berkeley). These new attachments have shown much greater reproducibility than the old attachments and since the modifications in design were made to eliminate side scattering, are believed to be more accurate. The geometry factor (ratio of disintegrations per minute to counts per minute) on the new ASVP attachments is about 700 as compared to 1500 for the previous attachments. This factor of two decrease in the geometry factor of the ASVP instrument and the improvement of the coincidence loss corrections in the ASP instrument has made possible the counting of the same disc in the ASP and ASVP instrument, removing possible errors in the pie disc technique. In using electroplated platinum discs, a preliminary test indicated the geometry

of the ASP instrument was 51.34 ± 0.28% instead of 50.5. Since stainless steel discs are now being used on all main line plutonium samples instead of platinum, the above study was discontinued and an attempt was made to determine the geometry of the ASP instrument for stainless steel discs. To decrease the counting time required on the ASVP instrument, the comparison of the ASP and ASVP instruments was made at the same counting rate.

Six chemists prepared 10 discs each by mounting 25 microliters of an 8.77 g/l plutonium solution on stainless steel. These discs were counted on the three ASVP instruments in Building 3706. Each chemist also prepared two dilutions of 50 ml. containing 50 microliters of this solution. Five discs were prepared from each solution by mounting 50 microliters aliquots on stainless steel and counting on three ASP instruments. The average results obtained are tabulated in Table I. The relatively poor precision was due to a large between-chemist error. The geometry of the 231 Building ASP instruments was calculated using the d/m/g of Pu obtained in 3706 Building and the results previously obtained on the analysis of standard plutonium samples of slightly different concentration (but of same isotopic content) in the 231 Building. Since the geometries were significantly different an attempt was made to find the source of error.

One dilution of the plutonium solution was prepared (50 microliters/50 ml.) and analyzed in all four buildings. The results obtained are tabulated in Table II. The discrepancy still existed but was of much smaller magnitude.

The original experiment was repeated; however, this time the g/l value of the solution was not accurately known (the solution was obtained by compositing several vials of the standard plutonium solution). The results obtained are tabulated in Table III. In this experiment all four laboratories prepared dilutions and counted the discs on their ASP instruments. The area laboratories were in substantial agreement between themselves, but the discrepancy between ASP results in 3706 and the area laboratories still remains. Both 3706 Building and the area laboratory chemists checked their previous results. The results obtained to date were reviewed and a comprehensive program outlined for further investigations to define the true counter geometry and calibration factors for the analytical methods employed for process control.

TABLE I

Original Geometry Calibration Using Stainless Discs

3706	ASP	7.7031×10^{10} c/m/g ± 0.767%	Geom.	50.29 ± 0.49
	ASVP	1.5316×10^{11} d/m/g ± 0.594%		
231	ASP (prev. data)	7.5693 c/m/g ± 0.31	Geom.	49.42 ± 0.47

TABLE II

Dilution of First Standard Analyzed in All Areas

Building	No. Chem.	Av. c/m/g x 10^{10}	ASP Prec. %	Geom.
3706	5	0.77403	0.253	50.51
222-T	9	0.76748	0.406	50.08
222-B	11	0.77044	0.430	50.28
231	10	0.77006	0.737	50.25

TABLE III

Solution Prepared by Compositing Old Vials of Solution (i.e., g/l not known)

Building	Instrument	No. Chem.	Av. Value		Prec.	Geom.	
3706	ASVP	5	1.4157×10^9	d/m/ml	0.307		
3706	ASP	5	0.71216×10^9	c/m/ml	0.365	50.30	±0.24
222-T	ASP	2	0.69934×10^9	"	1.40	49.40	
222-B	ASP	2	0.70587×10^9	"	0.367	49.86	
231	ASP	2	0.70261×10^7	"	1.13	49.63	
(T + B + 231)	ASP	6	0.70261×10^9	"	0.650	49.63	±0.72

Since the isotope correction factor (ICF) curve used to calculate grams of plutonium from total plutonium count (TPC) is based on the old ASVP instrument, the use of the 50.5% geometry and a 2% backscattering correction factor between platinum and stainless steel will be continued until the geometry of the ASP for stainless steel based on the revised ASVP attachment has been reliably established and appropriate revisions made in the ICF curve. A comparison of the isotope correction factor computed using the 50.5% geometry and 2% correction factor for stainless steel with that given by the curve now in Plant use relating TPC/TU to ICF is given below. The source of the apparent bias of + 1.46% is not known. Since the 11-08 series runs, which were made using stainless steel mounting exclusively, have about the same bias (+ 1.52%) as the previous runs (11-05 through 11-06) using platinum, the substitution of stainless steel for platinum discs has not had any deleterious effect.

Comparison of Isotope Correction Factor Obtained on AT to that Calculated from TPC/TU

Run Series	B-11-08	T-11-08	B + T-11-08
No. Determinations	55	58	113
Av. % Difference *	+ 1.34	+ 1.57	+ 1.46
% Precision, Indiv.	± 3.20	± 3.68	± 3.45
% Precision Av.	± 0.43	± 0.48	± 0.32

* ICF obtained from analysis of AT - ICF from TPC/TU

In the determination of plutonium content of metal castings an excessive number of reruns are being made. At the present time a sample is rerun if any of the following specifications are not met:

1. Range limit of 0.81% for four titrations
2. A summation limit of Pu plus other elements of 100.0 ± 0.24%
3. Minimum purity of 98.5% plutonium

The following table indicates the reruns required to meet these specifications:

	No.	%
Total number of sets of 4 titrations	147	100
Range less than 0.81%		
1. Within summation limit and above minimum purity	54	36.7

	No.	%
2. Outside summation limit	22	15.0
3. Below minimum purity	18	12.2
Range between 0.81 and 1.82		
1. Within summation limit and above minimum purity	19	12.9
2. Outside summation limit	11	7.5
3. Within summation limit but below minimum purity	4	2.7
Range greater than 1.82%	19	12.9

The major cause of analysis being outside minimum purity or summation limits appears to have been incorrect ceric normality. At the present time, the 234-5 Laboratory is restandardizing ceric reagent on the same equipment as used for the analysis, using Bureau of Standards iron as reference material. The presumption is that in those analyses with ranges greater than 1.82%, as well as some giving better results, analytical techniques and equipment operation have been sub-standard. The problem of establishing a satisfactory range limit is complicated by the presence of a large number of erratic results and by the fact the ranges are not normally distributed, hence, no change in the checking limits will be made until these factors are rationalized.

Analytical methods have been received or revised for determination of solution clarity for TBP samples, plutonium by TTA extraction, zirconium by TTA extraction, uranium by X-ray photometer, uranium by coulometric titration, crystallization point and methyl isobutyl carbinol by spectrophotometer. Apparatus has been received, revised, and tested for the determination of sulphates (Method SV-1a). It includes the dual titrator (with two 1 ml. Gilmont displacement burets with stopcocks, modified for magnetic stirrers) and a smaller, modified still, requiring only 0.3 to 0.9 mg. SO_4 (one-fifth the sample previously used). Three dual titrators have been assembled and delivered to 222-S for use in acid and aluminum determinations. Two additional dual titrators will be delivered for the determination of ferrous and sulfamate after testing of the revised method.

The 2" x 1 1/2" x 1 1/2" diagonally magnetized Alnico magnets have been received Mounted on an A. H. T. Company magnetic stirrer motor with a simple chuck and a lucite cover to hold 16 test tubes (up to 14 mm. diameter, or 10 ml. volume), the diagonal magnetization permits efficient stirring in all the tubes using iron wire stirring bars. This is the cheapest, smallest and most efficient of the series of magnetic stirrers yet invented for stirring in small test tubes or cones with iron wire stirring bars. Although this model is ideal for organic extractions used with cupferron, TTA, oxine, uranium, plutonium, etc., it is not suitable for the 50 ml. test tubes currently used for fission product determinations. The latter require the combination centrifuge-magnetic stirrer devised earlier this summer.

Safety and Special Hazards Control

Twenty-three minor injuries were incurred during the report period, and one of which was near-serious. In attempting to remove a frozen stopper from a flask of acid a laboratory assistant placed the flask on a hot plate instead of just warming the neck under the tap. Safety glasses saved her eyes during the resultant explosion and only superficial burns were incurred. The sharp increase

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Analytical Unit

in injuries will require special supervisory attention for the next few months, particularly with regard to methods or instruction.

Contamination and survey data for the service laboratories are summarized below:

	222-B	222-T	231	234-5	CDSL
No. Days N. C. W.	56	62	27	13	0
% No Contamination Work	5.6	5.6	3.8	1.2	0
Survey Work (Hours)	186	244	116	87	20
Non-Regulated Items Contaminated	155	112	241	133	0
No. Cases Floor Contamination	12	11	49+	18	1
Air Contamination - No. Above Tolerance					
Alpha	1*	0	0	4**	0
Beta, Gamma	0	0	0	0	0

The cases of above tolerance air samples were obtained near the hoods in Room 7 (*) and in Room 157 (**). Since no notification was received from the Survey Services Unit at the time the condition was noted, it is impossible to ascertain the cause; however, it is known that no unusual conditions occurred and that correct techniques and standard procedures were being followed.

+ Two incidents of general floor contamination at the 231 Building Laboratory occurred on August 30 and September 21. In the first case it was concluded that the contamination occurred during the disposal of dry waste and was then subsequently spread to adjacent laboratory rooms. Investigation of the second case revealed the source to be one spot of gross contamination near the iron determination hood. This may have occurred during the transfer of equipment to the decontamination sink.

In returning a process sample to the vault in Room 141 at the 234-5 Building Laboratory, a laboratory assistant placed the sample on the window ledge prior to obtaining the vault key. As she turned around the sample fell to the floor, spilling approximately 3 ml. of the sample. No personal or clothing contamination was involved. It is planned to install a metal tray under the two window ledges in Room 141 to prevent recurrences.

On September 6, 1951, at 3:40 P.M. an unusual incident occurred in the recovery of plutonium from the analytical waste after boron determination. In the addition of 16 $\underline{N}$ HNO_3 for the conversion of the chloride solution in the reactor to nitrate, the reaction was sufficiently rapid that the negative pressure inside the reactor was lost and the plutonium solution backed out of the line being used for nitric acid addition. The line was attached as soon as possible to a standby trap bottle. High level contamination of the rubber gloves of the operator and of 2,000 and 1,500 d/m on hands of person assisting operator was all the personal contamination that occurred. The hood and processing equipment was highly contaminated, requiring 80 man-hours for cleanup. In the future nitric acid will be added in smaller increments, cooling after each addition.

An informal investigation of an incident at the 222-B Laboratory which occurred on August 17 was reclassified to a Class 2 investigation on the basis of probable over-exposure. A laboratory assistant had several spots of contamination on her

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coveralls which probably came from splashing acid at the decontamination sinks. Recommendations to provide better fitting clothing, through surveys and publicity have been compiled with; a study of the hooded facilities, which are only six m months old, did not reveal how recommendations for their change would improve them significantly.

A case of hand contamination occurred in the 231 Building when a new employee put on a contaminated rubber glove wrong side out. Daily treatment for a period of a week was required before all of the remaining plutonium (1000 d/m) was removed. An application of collodion and rubber gloves prevented spread of the contamination to the employee's residence.

INVENTIONS

All Analytical Unit personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during September 1951 except as listed below. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

INVENTOR(S)	TITLE
S. A. Hays	Diagonal Magnetic Stirrer

Signed: F. W. Albaugh
F. W. Albaugh, Unit Head

FWA:ltc

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TECHNICAL SERVICES UNIT

SEPTEMBER 1951

VISITORS & BUSINESS TRIPS

There were no off-site visitors sponsored by the Technical Services Unit during the month.

Business trips of Technical Services personnel were as follows:

B. J. Borgmier spent September 3-7 attending the Diamond Jubilee meeting of the American Chemical Society in New York City. She spent September 10-14 discussing mutual problems of technical information organization with AEC personnel at Oak Ridge, Tennessee.

T. W. Hauff spent September 10-13 in New York City attending the meeting of the International Congress of Pure and Applied Chemistry. On Sept. 14 he reviewed new laboratory service facilities at the du Pont Experimental Station at Wilmington, Del. He was in Schenectady on September 17-19 inspecting and discussing laboratory facilities and technical services at KAPL and the G. E. Research Laboratory. He returned via the Argonne National Laboratory, where he spent Sept. 20-21 for the same purpose.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized as follows:

	August 31	September 30
Engineering	70	72
Technical Information	82	84
Mathematics	31	31
Administrative	3	3
Unit Totals	186	190

Included in the Sept. 30 figures are ten rotational trainees, seven being assigned to Laboratory Equipment Design and three to the Computing Laboratory. This represents an addition of one during September.

ENGINEERING SERVICES

Mechanical Shops (Bldgs. 1717-D, 3706 and 222-S)

Work volume statistics for the Mechanical Shops are as follows:

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Technical Services Unit

	Customer Division or Program	August No. of Jobs	August Man-Hours	September No. of Jobs	September Man-Hours
Work Done on Jobs Completed	P-10	12	199	18	382
	Pile Tech. (Incl. P-12) (a)	34	507	34	473
	Separations Tech.	18	490	16	530 (b)
	Analytical	26	580	19	637
	Technical Services	12	267	14	332
	Others	2	278	3	52
	Sub-Total	104	2,321	104	2,406
Work Done on Jobs Not Completed	P-10	8	277	4	68
	Pile Tech. (Incl. P-12)	16	40	5	121
	Separations Tech.	4	251	7	364
	Analytical	22	524	6	291
	Technical Services	19	80	5	356
	Others	1	8	0	0
	Sub-Totals	70	1,180	27	1,200
Total Work Done			3,501*		3,606
Work Backlog:					Man-Hours to Complete
Jobs Started	P-10	2	227	4	239
	Pile Tech. (Incl. P-12)	4	1,252	5	316 (c)
	Separations Tech.	3	186	7	362
	Analytical	12	269	6	481
	Technical Services	5	335	5	265
	Others	1	0	0	0
	Sub-Totals	27	2,269	27	1,663
Jobs Not Yet Started	P-10	6	163	1	12
	Pile Tech. (Incl. P-12)	11	401	4	104
	Separations Tech.	1	80	1	8
	Analytical	10	934	7	161
	Technical Services	14	423	8	299
	Others	0	0	1	4
	Sub-Totals	42	2,001	22	588
Total Backlog			4,270		2,251 (d)

* This total is corrected from the August report which was in error.
(a) P-12 designates the Exponential Pile Project.
(b) Includes W.O. B-31003 which was closed out.
(c) P-12 Project P-3462 closed out with 1,000 man-hour backlog.
(d) Does not include 817 man-hours cross-ordered to Maintenance.

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As a result of the relocation of the Mechanical Shops from Bldg. 101 to the 1717-D Bldg., 1000 man-hours of graphite work for the Exponential Pile Project have been closed out and removed from the shop backlog. This work will be completed in Bldg. 101 by the Reactor Unit of D & C. An additional 817 man-hours were cross-ordered to various Manufacturing Dept. machine shops. The work represented by these cross-orders is urgently needed for Bldg. 222-S start-up. As a result, the mechanical shops are now operating on an approximate 17-day backlog. However, work forecasts furnished by the Technical Units indicate the necessity for a six-day work week will continue, as only occasional assistance can be rendered by the Manufacturing Dept. shops. Accordingly, the Metal Preparation Section has been requested to continue the six-day work week for their supervision and craftsmen assigned to Bldg. 1717-D.

A special leak-proof container for the in-pile atmosphere experiments has been fabricated for the Pile Application program. This container was fabricated from 2-S aluminum, heliarc welded and leak tested. A total of 68 man-hours were required to complete the first successful container. Nineteen more such containers will be required during the next six months. This fabrication requires special equipment available only in the Technical Shops.

Fabrication of the metal transfer manifold for the P-10 program mentioned as being top priority last month was completed on August 29, with 293 man-hours expended. The manifold consisted of piping, flanges, special valves and a diffusion pump. The entire assembly was of stainless steel which was degreased, passivated and leak tested before delivery.

Work has been suspended on four metal transfer systems for P-10 pending receipt of the required valves.

A horizontal rod mock-up for Pile Engineering required the machining of graphite to duplicate the section surrounding the horizontal rods. Approximately 150 pieces of graphite were prepared on a high priority basis and required 120 man-hours for completion. A new cutter was designed to cut a longitudinal radius in the center of one of the faces of the graphite blocks.

A 15-cell variable speed, counter current batch extractor has been completed and delivered to Chemical Development. Approximately 600 man-hours were expended on the development and fabrication of this piece of equipment. The final design has been approved by those concerned and a second unit, identical to the first, is being constructed for Chemical Research.

The second miniature mixer-settler for Chemical Research is approximately 75% complete. This model differs in several details from the one built for Chemical Development. The feed and mixing-settling systems have been enlarged and fewer stages are involved.

A special water jacket for a one-inch diameter pulse column has been started for Chemical Research. The jacket must be water tight and calls for sealed joints of lucite and aluminum. Approximately 90 man-hours have been expended and the job is 60% complete.

Two organic waste strippers for 222-S Laboratory Services are being constructed.

Development work on a remote control pipetter for Analytical Services is complete. However, actual fabrication of the unit is continuing. No further design changes are anticipated and a second unit will be built after the installation of the present unit is complete.

Work has been started on two falling drop specific gravity units for 222-S Analytical Services. A special fluorine reactor vessel was constructed for Analytical Research from pure nickel rod. The available size of material necessitated extremely close tolerance machine work and heliarc welding.

The shop is now investigating the possibilities of metal-ceramic brazing at the request of Pile Engineering. The process involves the use of active metal hydrides and high purity gases under high vacuum for the brazing of metals to ceramics and similar materials. A second method, using finely divided molybdenum and magnesium powders in a moist hydrogen atmosphere, is also under investigation. Preliminary results indicate the second method may be more adaptable to shop work.

All phases of the relocation of Technical Section activities in Bldg. 101 as authorized by AEC Informal Approval were scheduled with the various servicing groups involved, and the move was completed on Sept. 7. The relocation was accomplished with a minimum of lost time and it is believed well within the estimated costs. The arrangements in Bldg. 1717-D are not exactly as anticipated, because of the necessity for continuing the Project C-410 experiment now set up in space previously considered for the tool room. To alleviate this situation, two large trailers have been parked near the 1717-D Building and are being used as a tool room and for critical material storage.

Glass Shop

Work volume statistics for the Glass Shop (exclusive of P-10 services) are as follows:

	August	September
Jobs Completed		
New	71	78
Repairs	16	14
Revisions	11	10
Total	98	102
Job Backlog	10	11

These figures do not include 2 quartz jobs which were completed during the month.

In the 3706 Glass Shop, 932 man-hours were used. This represents the total time available and is somewhat lower than normal due to the Labor Day holiday and vacations.

A request to reduce by two the number of glass workers assigned to P-10 at

108-B has been received and reassignment scheduled. One of these men will be assigned to Bldg. 222-S and the other to the Bldg. 3706 shop. No cases of personnel exposure above working limits were reported during the month.

Room 41-A in the 3706 Bldg. is being equipped for boron-free quartz work. The room is nearing completion with only the installation of a saw and lathe remaining.

Equipment Design

Work volume statistics for Equipment Design, expressed in man-hours, are summarized as follows:

	August		September	
	Engineering	Drafting & Misc.	Engineering	Drafting & Misc.
Pile Technology				
Engineering	25	234	37	296
Metallurgy	29	85	10	83
Pile Applications	-	-	-	48
Separations Technology				
Development	48	-	16	-
Research	233	41	153	153
Analytical				
Service	600	695	316	318
Research	-	-	20	-
Technical Services				
Engineering	-	9	-	-
Laboratory Equipment Development (RDA #TC-5)	60	350	538	255
Totals	995	1,414	1,090	1,153

Relatively high workloads continued in connection with design of equipment for the multicurie cells and analytical laboratories of Bldg. 222-S. Due to increases in personnel, however, the six-day week was discontinued as of August 27.

Laboratory Equipment Design activities were moved from Bldg. 101 on Sept. 7. The draftsmen and a majority of the engineers were relocated in Bldg. 1707-D in the 100-D Area, while several engineers were assigned to Bldg. 222-S in the 200-W Area.

Arrangements were completed for the transfer of all non-exempt draftsmen and designers from Technical Services to the D & C Services Unit, effective October 1. These personnel will continue in the Equipment Design work, but on an assigned basis.

The following work was done for the various customer groups, as indicated:

Pile Engineering

Drawings were made of a charging machine mounting, a displacement time recorder, a titrator, a "bullet nose," a thermocouple panel, a potentiometer connector, an orifice calculator, some piping, and various charts, graphs and signs.

Metallurgy

Drawings were made of a "uniscan" machine, a metallograph, and a cutoff box filter.

Pile Applications

Drawings were made of a gas pump, a sample container, and some charts.

Chemical Development

Assistance was given in following the "mini" extractor in the shops, and in preparation of multicurie cell apparatus for Bldg. 222-S (reflected under RDA).

Chemical Research

Assistance was given in preparation of a regulator for a constant temperature water bath, a "mini" extractor, and column apparatus associated with the multicurie cells of Bldg. 222-S. Drawings were made of some flowsheets, a "sample blister" attachment for the multicurie cell, and a control desk.

Analytical Services

Preparation of gloved-box installed equipment for Bldg. 222-S continued. Development of the "analytical line" equipment continued in the shops, with close assistance from the engineers. Drafting of the remote titrator and the air-displacement primary sample pipetter was completed. Drawings were made of a bayonet base, some glass apparatus, and some shield slides.

Analytical Research

A beam intensity reducer was designed for a spectrophotometer.

Laboratory Equipment Development (RDA #TC-5)

Development of Bldg. 222-S multicurie cell equipment continued. The cell lighting fixtures were being altered to provide better cooling. In-cell air hoists were installed and are awaiting fabrication of service panels for airline connectors and controls before installation. In-cell equipment hangers and inner-wall rails were completed in the shops.

An improved wrist was being developed in the shops for the Hanford Slave Mani-

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pulator. One engineer each was assigned under this RDA to the development of remote-control radiochemical equipment for Chemical Research, Chemical Development and Analytical Services.

Issuance of the "Catalog of Hot Laboratory Equipment" is awaiting Public Relations' signature approval for its release.

New Laboratory Planning

Complete lists of all laboratory and shops equipment now included in the specifications covering the Technical Section buildings in the Works Laboratory Area were forwarded to the Units who will occupy the area. A tabulation of all standard office furniture required has been forwarded to Office Services.

Redox Analytical and Plant Assistance Laboratory, Proj. C-187-E

Difficulties in adjustment of the ventilation system continues to delay final acceptance of this part of Bldg. 222-S, the Redox Analytical & Plant Assistance Laboratory. Investigation into the causes of the yellow discoloration of the marbelized white rubber tile floor covering continued, but no conclusions have as yet been reached. Test squares using various combinations of Stafco sealer, mastic, tile and wax have been applied to the on-grade concrete in Room 1-G as part of this investigation. Complete laboratory analysis of these materials, and tests of the effect of ultraviolet light on test strips, have been requested of Analytical Services.

Mechanical Development Bldg., Proj. C-406

Phase I construction is now complete and the building shell was accepted on Sept. 24. Negotiations continued with the Dix Steel Building Co. on the design of Phase II, which covers completion of the building interior.

Radiochemistry Bldg., Proj. C-381

Field construction continued on the concrete work with good progress made on footings and basement walls.

Plot Plan & Utilities, Proj. C-394

Invitations to bid on the Plot Plan & Utilities (exclusive of Badge House), and on the required additional sewage disposal facilities (Proj. C-199), were issued on Sept. 27. Bid assemblies are to be available Oct. 3 and bids are to be opened Nov. 7. Contractors are requested to bid on both projects, but must keep costs of each segregated.

Radiometallurgy Bldg., Proj. C-385

The bid opening date on the Radiometallurgy Bldg., originally scheduled for Oct. 3, has been postponed until Oct. 10. This change in date was caused by the necessity of revising all the contract forms due to the AEC taking over all construction contracts as of Oct. 1.

Pile Technology Bldg., Proj. C-414

An extension of bid opening date was issued on Sept. 24 by the Contract Unit altering this date from Oct. 3 to Oct. 10. This change was required due to the necessity of changing the contract forms to conform with the modified prime contract. Requests for information which have been received from various contractors regarding different aspects of the building design have been answered as clearly and as expeditiously as possible.

Instruction and operation manuals for purchased equipment are being studied as received to determine completeness of material and applicability.

Library & Files Bldg., Proj. C-421

The subcontract for the construction of the Library & Files Bldg. (and also for the Badge House portion of C-394) was awarded to the L. H. Hoffman Construction Co. of Portland, Oregon, on Sept. 21.

Laboratory Services

Bldg. 3706

Normal Bldg. 3706 services continued routinely. Material control, stockroom and work order activity is summarized as follows:

	August	September
Purchase Requisitions		
Total number processed	79	65
Number requiring special expediting	26	14
Number requiring emergency	0	4
Stores Stock Requests Processed	4	3
Store Orders		
Total number processed	1,554	1,100
Number requiring emergency pick-up and delivery	15	9
Work Orders Processed	55	66

Work on the remodeling of Room 59, Bldg. 3706, for use as a gas laboratory was completed.

The Kardex file for ready reference use on purchase requisitions was completed and placed in service.

Bldg. 222-S

Difficulties in proper adjustment of the ventilation system continue to delay the full physical completion of this building, and are restricting the activity of laboratory groups in making modifications and installa-

tions required for operation. At month end, cycling of exhaust pressure made it impossible to adjust control instruments for satisfactory operation; this condition could not be evaluated until the preliminary balancing adjustments had been made. Baffle plates are now being installed in the exhaust plenum in an effort to correct this fault. The manually controlled gloved box hood units were inspected and approved on Sept. 21, to permit laboratory personnel to start work on at least a portion of the "set-ups" that will be required.

Flushing of waste lines between Bldgs. 222-S, 219-S, 202-S, and the Retention Basin and Pond have been completed. Stockroom activity continues to be primarily ordering, receiving and shelving materials required for start-up. A total of 25 work orders were issued in September for new and maintenance work. Equipment for use in the decontamination rooms is being received, and "dry run" training of associated personnel has been started.

MATHEMATICAL SERVICES

Statistics

A study of the effect of uranium produced in the old and new plants of the Mallinckrodt Chemical Works on the yield of good slugs, on scrap losses, and on Test Pile reactivity of billet ends and canned slugs was completed and reported to the Pile Technology Unit in Document HW-22155.

A study of density and Test Pile reactivity data on fifteen J slugs recently received at Hanford Works from Oak Ridge failed to produce a density versus reactivity relationship that would be useful for receiving and process accounting purposes.

At the request of the Accountability Unit, a study was made of the "Shipper-Receiver Weight Difference Control Chart" prepared by the New York Operations Office of the AEC for uranium rods shipped from Simonds Saw and Steel Company to Hanford Works. The outlined procedure was found to be of little value to Hanford Works, and it was suggested that the Accountability Unit use the procedure recommended in Document HW-20985 to control the differences.

For the Industrial Engineers, statistical information pertaining to each reject cause of the canning operation in Bldg. 313 was provided. All data, from billet casting to production pile use, for lot 140 H was supplied to the Metallurgy Laboratory. At the request of the Metal Preparation Section,

1. A study was made of silicon content of specified uranium rods, and

2. A guide was prepared outlining some of the necessary requirements for setting up an efficient quality control inspection system for 300 Area processes.

Statistical Controls were reported on Metal Preparation Section operational results from Machining, Pickling, Canning and Autoclave, Test Pile and Melt Plant.

All currently available data pertaining to the application of coal cost standards at Hanford Works were analyzed statistically for the Plant Industrial Engineers. These data were found to be unsatisfactory for obtaining actual versus standard coal utilization errors. To remedy this situation, experiments were designed to determine:

1. The errors introduced by billing weights and Hanford weights, by changes in composition of coal enroute, and by sampling;

2. The effect of various boiler ratings; and

3. The efficiency of the turbines at various turbine rates.

A further analysis of plutonium yield versus exposure indicated excellent agreement between predicted (HW-12163, 25 Depletion) and observed values in the 400-420 MWD/TON exposure range. The results of this analysis were reported to Theoretical Physics in HW-22167.

For the Pile Technology Unit, a statistical analysis was made to determine any apparent relationship between P-10 exposure and yield. Also a study of P-10 slug failures was begun. The program for the final accountability of irradiated J slugs, including burnout, was followed. Preparations are being made for computing the burnout on a tube-by-tube basis.

The precision of scales for weighing slugs in air and the effect on the weights of aluminum dummy slugs of treatment by solutions of CrO_3 and H_3PO_4 were calculated for Water Quality. For Pile Engineering further analysis was made of slug corrosion data, using newly acquired corrosion rates computed from the air weighing of slugs after exposure.

The study of slug failures in the pile was continued at the request of the Reactor Section.

Considerable calculation work was performed for Graphite Studies on the study of the energy released by irradiated graphite at increasing temperatures. Computations were performed in the preparation of a table, required by a simple statistical test, to determine whether or not outlying observations may be considered as belonging to the group with which they were observed. Statistical advice was proffered to Metallurgy in the planning of in-pile production tests for new types of slugs.

The statistical study of the effects of 234-5 process variables on the density of pressed pieces was completed, and the several significant conclusions resulting from this analysis were reported to the Separations Technology Unit.

The regular semi-monthly reports of certain Kr-85 computations were completed and forwarded to the AEC. During the month a request was received from the AEC to (1) re-evaluate present computations using an alternate method of estimation, and (2) to comment on the feasibility and reliability of the proposed method. A study is in progress in compliance with this request.

For the Analytical Unit, (1) a revised checking limit for the iron assay of AT solutions was recommended, based on 138 recent samples; (2) analysis of data from the investigation of a method for determination of boron was completed; (3) desk calculations of several points and plate geometries for G-M counters was completed; and (4) the regular report of 200 Area Analytical Laboratory performance was issued. Efforts to accomplish the theoretical calculation of Am-Cm in metal solutions continued during the month, in cooperation with Chemical Research.

For the Biology Section, (1) statistical analysis of experiments covering effects of pile cooling water on plant growth were brought up to date; and (2) an extensive experiment was designed to study the percutaneous absorption of plutonium by rats, as a prelude to investigation of the effectiveness of decontamination measures. A survey for the Radiological Sciences Department is in progress, to determine the availability of their manpower in the event of a crash alarm.

Computing

Build up and decay of the principal isotopes in the H-10 pieces during running and down periods of the pile were computed on the basis of (1) differential equations of the isotope formation rates, and (2) negative radial gradient of He^3 abundance.

Further calculations and mathematical service has been applied to boundary value problems from Theoretical Physics. A new listing of receipts of J pieces was made for the Accountability Unit. Temperature distribution in a coolant system was calculated. The standard deviation in the rate of exposure from tube-to-tube in the discharge of 105-H June 12, 1951 was determined. A revised xenon tabulation constants for the complete range from zero to 700 MW was issued. Programming was completed for a new data fitting process for Project P-12. Cosine curve fitting was made for forty-eight cases with the programming completed last month. Calculations were completed for Metal Quality, special request exposures for 105-H pile, data reduction for 100 Area Physics, Aquatic Biology, and radioanalysis from the sheep experiment. Daily Panellit pressures for H-10 were concluded.

During the month the first major addition was made to the initial complement of IBM computing equipment. Machines received, installed and placed in service were: One key punch, one reproducer, one sorter, one collator and one interpreter.

Most of the personnel in the computing laboratory continued on a 6-day work week through September 29.

Mathematical Technique Development (RDA #TC-6)

The review of statistical literature and cataloging articles pertaining to testing hypothesis, parameter estimation, design of experiments, analyses of variance, and quality control was continued. It is interesting to note that several Hanford problems during the past month benefited significantly from the techniques adapted from this file.

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Considerable time was spent on sampling problems relative to the number of observations falling outside two predetermined limits, where the prediction with a given probability is based on the size of the lot and the size of the sample. A satisfactory solution is available where the lot and sample sizes are sufficiently large. Work is continuing on the solution for smaller sized lots and samples.

Considerable work was completed in compiling a library of IBM punched card tables and calculator sub-routines for common mathematical functions. A method of calculating optimum interval tables from punched constant interval tables is in preparation. A method of solving simultaneous linear differential equations on IBM equipment has been developed. The 8-10 digit Card Programmed Calculator control panel has been redesigned to provide improved operation of the calculator.

TECHNICAL INFORMATION SERVICES

Plant Library

Library work volume and book statistics were as follows:

	August	September
Number of books on order received	182	274
Number of books fully cataloged	327	367
Number of bound periodicals processed but not fully cataloged	173	62
Pamphlets added to the pamphlet file	49	531
Miscellaneous material received, processed and routed (Including maps, photostats, patents, etc.)	97	100
Books and periodicals circulated	3,702	3,995
Unclassified reports processed	150	181
Unclassified reports circulated	275	278
Reference services rendered	1,464	1,651
Inter-Library loans	40	15
Photostats from offsite	17	26

	Main Library	W-10 Library	108-F Library	Total
Number of books	7,989	3,505	402	11,896
Number of bound periodicals	4,843	0	612	5,455
Totals	12,832	3,505	1,014	17,351

The steadily increasing work load in the Plant Library has necessitated the addition of two employees to the Library clerical staff during the past six months. These additions have involved re-organization of the job assignments, and the drafting of new job descriptions. These were reviewed by Wage Rates and the new grades assigned have satisfactorily taken care of a number of inequities in the previous job classifications.

The expanding work load is directly reflected in the increased volume of reference work. This has placed a heavy responsibility on the Technical

Librarian, who has had also to carry the cataloging load pending the hiring of a professional library cataloger. A sampling of typical reference questions, covering many fields of technical literature, is given below:

Type of steel most resistant to HNO_3.
Basic information on hydroponics.
Types of inventory control and store keeping.
Chemical composition of Tygon.
Commercially applicable control instruments for large scale combustion.
Chemical properties of carbonyl compounds.
Entropy vs. heat charts for various organic and inorganic compounds.
Data available on "pyranol."
Adsorption of HF by C.
Reactions of HF with CaI_2 and MgO.
Preservative treatment of wood poles.
Effects of radiation on silicon products and greases.
Hygroscopic properties of $CaS-CaF_2$ slag mix.
Inaccuracies of thermocouples due to radiation effects.
Thermodynamic and kinetic properties of Li-H, Li-D, Li-T.
Surface water supplies of Texas.
Transmission line hardware as a cause of line static affecting radio receivers.
Average rate of speaking before a meeting.
Firms that specialize in writing reports for other companies.
Magnetic properties of cobalt.
Holiday provisions of union contracts.
History of Geiger-Mueller counters.
Average temperature of rivers of the U. S.
Mathematics of one-sided surfaces.

An inventory of the periodical holdings in the Main Library and branches is well underway. To expedite this, a new form was developed for recording branch holdings in the catalog. Also, an improved form for use in the Kardex File of current periodicals subscriptions was developed and is being used on a trial basis.

As in previous years, the W-10 Branch of the Library was placed on an evening schedule concurrently with the opening of the fall session of the Graduate School of Nuclear Engineering.

It appears likely that the position of library cataloger, which has been vacant for almost 18 months, will finally be filled. A professional cataloger with satisfactory training at the University of Denver has accepted an offer and will report shortly.

The activities of the Library were again included in the 40-Hour Training Program, where an opportunity is given to present the assistance which the Library can render to Plant personnel in the better performance of their jobs. It is felt that this is a very worthwhile program.

Classified Files

Work volume statistics for the Classified Files were as follows:

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	August	September
Documents routed	13,528	12,657
Documents issued	6,576	5,027
Reference services rendered	4,800	4,610
Registered packages prepared for offsite	505	301
Inter-area mail sent via transmittal	39,922	29,705
Holders of Classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	1	3
(b) Because of transfer of work assignment	7	5
(c) Because of termination	2	4
Inventory reductions:		
Copies of documents destroyed	5,355	7,120
Copies of documents downgraded	284	18
Copies of documents declassified	186	12
Classified documents located which were unaccounted for in previous inventory	24	18
Standard storage cartons of material retired to the Records Center:		
Unclassified and Official Use Only	0	11
Classified	87	5

Work on the inventory of classified documents in the Operations files proceeded satisfactorily. The check of the 300 Area Classified Files was completed, and the 700 Area Classified Files is scheduled for completion during October. On completion of this physical check of the documents, the listing will be checked against the basic inventory record (File Record Card) to provide the final summary report.

Documents previously reported missing in inventory continue to be located. Of 75 Research and Development reports originally reported missing, 39 have subsequently been located. It is interesting to note that 10 of these were located by circulating Hanford's list of missing documents to other sites. This indicates either that the documents were taken or mailed offsite in violation of standard procedure, or that the Classified Files handled the transaction but failed to post the necessary information to the basic inventory record. It appears that when the inventory is completed, it will be advisable to check the record of missing documents against the destruction file and offsite receipt file to pick-up any posting errors.

The site Non-Technical Document Review Board has also been active in removing classified documents from accountability through downgrading. For instance, of the 76 classified documents originally reported missing from the Design and Construction Files, three have been subsequently located but 15 have been downgraded by the local Review Board.

Reduction of classified document inventory by destruction of surplus copies is also proceeding satisfactorily. Overtime work to process a large backlog of reports was extended, and it is planned to complete this assignment early in October. Approximately 36,000 classified documents have been destroyed since January 1951, when emphasis was placed on this program.

The work statistics of the last six months indicate a steady increase in the number of registered packages which are prepared for offsite transmittal of classified documents. These figures are now running between 300 to 500 per month. In order properly to expedite this job, since the packages must be carefully wrapped in accordance with Security regulations, an automatic gummed tape dispenser has been installed.

Considerable time was spent during the month preparing for the next meeting of the Technical Information Panel, which is to be held in Chicago on October 18 and 19. This involved Committee reports and agenda for the Library and Document Control Committee, of which the Hanford representative is chairman.

A re-write of the classified documents section of the stenographic manual, "This Way, Please," was undertaken by the Classified Files. A number of staff meetings were held in this connection and a final draft was completed by month end. Future meetings were scheduled with representatives of the Design and Construction Files, the Reproduction Files, and the Security Division to review the draft before final inclusion.

Priority work on the stenographic manual, which has a deadline to meet, has delayed further progress on the "Manual of Files Procedures." However, the write-up of the procedures presently completed indicated inequities in job classification for two jobs. These were brought to the attention of Wage Rates, the jobs were re-evaluated, and higher grades assigned.

New duct work to supply ventilation to the lower vault in the 703 Bldg. was completed. The present air-conditioning unit, however, will be inadequate to service both the upper and lower vaults. The required large unit is scheduled for installation next spring.

Office Letter #126, issued during the month, altered the procedure for transmittal of yellow file copies of UNCLASSIFIED and OFFICIAL USE ONLY material to the Nucleonics Office in Schenectady. These copies will flow from the various Plant offices direct to the Mail Room in the 707 Building, rather than to the Classified Files as was previously done. Pink File copies of UNCLASSIFIED and OFFICIAL USE ONLY material, and both the yellow and pink copies of CLASSIFIED material, will continue to be routed as in the past.

A check-list of frequently used cost codes, incorporating the new cost system developed by the Technical Section, was prepared and distributed to the staff for desk reference. In this connection, it is noteworthy that Technical Information costs will be carried, in future, as part of the Plant General and Administrative expense. This will eliminate the time-consuming use studies previously required to liquidate operating expenses directly to the customer. Only the minor charges incurred by Construction, Community and the A.E.C. will now be liquidated directly.

Central Reporting and Abstracting

Work volume statistics for these services were as follows:

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Technical Services Unit

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	August	September
Ditto masters run	621	557
Mimeograph stencils run	1,425	794
Ditto copies prepared	22,697	27,506
Mimeograph copies prepared	115,514	68,940
Multilith masters typed	530	199
Multilithed copies handled	33,304	15,780
Formal Research and Development Reports issued	24	10
Formal Reports in Process	12	10
Reports abstracted	204	178
Volume of unclassified mail handled by the 300 Area Mail Room	27,007	30,287

The work load of the technical abstracting staff has greatly increased in recent months as their literature searching services become more widely accepted. The current bibliographic load is larger than can be handled by the present staff. A fraction of their routinework day must be devoted to abstracting and indexing current reports, and the available time for searching in the classified literature is, therefore, limited. For this reason, an additional technical abstracter has been hired and is awaiting "Q" clearance.

One of the technical abstracters attended the American Chemical Society meeting in New York, and particularly the Division of Chemical Literature. On the return trip, a week was spent at the TIS at Oak Ridge. This was devoted to the development of subject headings needed for the analysis of Hanford reports, correlation of Hanford and TIS bibliographic activities, and plans for revision of the reports index in accordance with the 4th revision of CA-1927. It appears that little direct aid may be expected from Oak Ridge in the latter job, which will probably have to be handled locally.

Approval was received from the Hanford Operations Office for reactivation of Code 10-66. This code had previously been used at Hanford, but had been eliminated as an Official Security Code by the A.E.C. because the substance to which it referred was not then used in any appreciable quantity at Hanford. Notification of the reactivation of the code was transmitted to the Plant Sections concerned.

Reproduction of a Series C of the Hanford Works Technical Manual was completed. This series incorporated a number of changes in format designed to aid in issuance and control. By using preprinted paper, the document number and copy number were added to each page. One index was rearranged and a satisfactory title page added. The binder covers were commercially lettered and included information adequate to allow proper issuance of the manual. Thirty-five copies were collated and delivered to the Hanford Operations Office for retransmittal to the Technical Information Service at Oak Ridge, which had urgently requested them. An additional 15 copies have been collated, and the remaining copies will be issued as soon as additional binders are received.

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Technical Services Unit

INVENTIONS

All Technical Services Unit personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during September 1951. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Signed _____
T. W. Hauff, Unit Head

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MONTHLY NARRATIVE REPORT

DESIGN AND CONSTRUCTION MANAGEMENT SECTION

September 1951

I N D E X

I.	SUMMARY	2
	A. ORGANIZATION	2
	B. SCOPE OF ACTIVITIES	2
	C. ACCOMPLISHMENTS	2
	D. MATERIAL PROCUREMENT	2
	E. CRAFT LABOR	2
	F. SAFETY - SECURITY	3
	G. MISCELLANEOUS	3
	H. MONTHLY REPORT OF INVENTIONS AND DISCOVERIES	3
II.	STATISTICAL AND GENERAL	4
	A. SIGNIFICANT ASSIGNMENTS	4
	1. Initial Reporting	4
	2. Final Reporting	4
	3. Current Projects	4, 5, 6
	4. Current Studies	6, 7
	B. OTHER ASSIGNMENTS	7, 8, 9, 10, 11
	C. RELATED SERVICES	11
	1. Design	11
	2. Construction	12
	3. Contracts	12
III.	ORGANIZATION AND PERSONNEL	12, 13

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DESIGN AND CONSTRUCTION MANAGEMENT SECTION

I. SUMMARY

A. ORGANIZATION

No major organizational changes occurred during the month. Minor personnel changes are discussed under III below.

B. SCOPE OF ACTIVITIES

At the end of the month the Design and Construction Management Section was engaged in 61 projects, of which 54 have authorized funds in excess of $20,000. In addition, preliminary work was being performed on 38 proposed projects, of which 33 were estimated to exceed $20,000. A total of three Research and Development Projects, each estimated to exceed $20,000, were in progress during the month.

C. ACCOMPLISHMENTS

The Report on Additional Production Capacity of Hanford Works (RDA-DC-2) was completed and submitted to the Atomic Energy Commission early in the month.

Addition to Richland Village Electrical Distribution System (Project C-341) was completed and accepted by the sponsor, the Utilities and General Services Department.

D. MATERIAL PROCUREMENT

The Atomic Energy Commission forwarded a proposal for the stock-piling of stainless steel tubing and forging billets and requested comments and estimate of future requirements. The proposed stock pile would be established and maintained by the Commission for the use of all Atomic Energy Commission installations. The Commission was furnished with estimated requirements for the next six months and was informed that we favored the proposal. During September five National Production Authority directives were requested covering steel, copper wire and fabricated items. One directive covering steel was issued.

E. CRAFT LABOR

Voluntary terminations of C.P.F.F. construction subcontractors' personnel equalled 4.5 per cent of the average force for the month.

A shortage of several crafts, notably plumbers and steamfitters, continued to exist. Efforts to alleviate the shortage were partially successful, however, at month end the supply was not sufficient and certain delays in construction resulted.

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F. SAFETY - SECURITY

There were five major, ten sub-major and one thousand and thirty minor injuries among construction subcontractor personnel reported during the month; representing a slight improvement over August in severity, but an increase in the number of minor injuries. Twenty automobile accidents and fifteen fires were reported, however, no injury resulted. There was no monetary loss in connection with fire. Three hundred ninety-one Security meetings were held and attended by 11,747 employees.

G. MISCELLANEOUS

Thirty subcontracts were assigned to the Atomic Energy Commission, effective October 1, 1951, and one subcontract was assigned to the Guy F. Atkinson-J. A. Jones Construction Company, effective September 29, 1951. Thirty-two contract items were processed involving an increased commitment of $1,092,585.25. Forty subcontracts and one hundred and ten lower tier subcontracts were active during the month.

The drafting and reproduction work load was reduced somewhat during the month. The first class completed the Drafting Training Course on September 7, at which time the course was suspended.

Research and Development Projects, amounting to $400,000 were authorized for production and separations facilities.

Construction work began on the Library and Files Building (Project C-421). A National Production Authority directive was requested in connection with the water plant for the 100-C production facility (Project C-431-A) which is approximately three weeks behind schedule.

The major repair work on the equipment for machining graphite in the Hanford 101 Shops has been completed. Machining work has begun on the graphite for the Savannah River test reactor. The first "B" blocks have been received from the Bremerton Navy Yard. Fabrication of "B" blocks is somewhat behind schedule, however, it is still possible that no delay in erection or change in completion date will result. Procurement has been initiated on approximately 83 per cent of all material and equipment required for C-431-B, 100-C Production Facility, and National Production Authority assistance has been requested.

H. MONTHLY REPORT OF INVENTIONS AND DISCOVERIES

All persons in the Design and Construction Management Section engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report. Such persons further advise that notebooks and records, if any, kept in the course of their work, have been examined for possible inventions and discoveries.

Date:September 30, 1951

J. S. McMahon, Manager
Design and Construction Management Section

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II. STATISTICAL AND GENERAL

A. SIGNIFICANT ASSIGNMENTS

1. Initial Reporting

RDA-DC-3 - Engineering Development Studies to Improve Design Base for Future 100 Area Production Facilities

RDA-DC-4 - Engineering Development Studies to Improve Design Base for Future Separations Facilities

Two Research and Development Authorizations with total estimated cost of $400,000 were approved during the month. Both have starting dates of October 1, 1951 and completion dates of June 30, 1952.

2. Final Reporting

RDA-DC-2 - Report on Additional Production Capacity of Hanford Works was completed and submitted to the Atomic Energy Commission early in the month.

C-341 - Addition to Richland Village Electrical Distribution System

Completion: Design 100 per cent, construction 100 per cent. The project was accepted by the sponsor on September 28, 1951.

C-443 - Additional Switches to Improve Grade of Service - Richland Telephone Exchange

Completion: Design 100 per cent, construction 0 per cent. Project management responsibility for this work was assigned to the Utilities and General Services Department. A revised project proposal has been prepared and submitted and a contract is being negotiated for the procurement of the telephone equipment required.

C-466 - 230 KV Disconnect Servicing Devices

Completion: Design 100 per cent, construction 0 per cent. Project management responsibility was assigned to the Utilities and General Services Department.

3. Current Projects

C-361 - Metal Conversion Facilities

Completion: Design 97 per cent, construction 91.4 per cent. Design is complete excepting for outside electrical facilities which are common to Projects C-361 and C-362. Construction instrumentation is approximately 98 per cent complete.

A re-estimate of project costs indicate that authorized funds will exceed cost by approximately $200,000.

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C-362 - Waste Metal Removal and Recovery Facilities

Completion: Design 99.5 per cent, construction 48.4 per cent. Substantially all requisitioning of construction material and equipment is completed. Construction is 6.48 per cent behind schedule resulting primarily from the shortage of steamfitter-welders. The 152 UR cascade and the 115 TXR tank were completed September 29.

C-413 - Expansion of 234-5 Facility

Completion: Design 71 per cent, construction 30.5 per cent. The completion status of the RMB Line fabrication, being performed by General Engineering Laboratories in Schenectady, is design - 70 per cent, assembly - 76 per cent. Cleanup of exception on Tasks transferred to the Manufacturing Department continued throughout the month.

C-431-A - 100-C Water Works Facility

Completion: Design 79 per cent, construction 10 per cent. Although construction has been accelerated over the previous month, it is about three weeks behind schedule as a result of the pipefitter-welder shortage.

Procurement has been initiated on approximately 82 per cent of all material and equipment required and National Production Authority directives obtained on structural steel.

C-431-B - Production Facility

Completion: General Electric Company design 75 per cent, Vitro Corporation design 86 per cent and construction 9 per cent. The construction phase is on schedule; the design phase is somewhat behind but no delay in field work has resulted or is expected.

Repair work on equipment for machining graphite was completed. Machining has been started on graphite for the Savannah River test reactor. The first "B" blocks have been received from the Bremerton Navy Yard. "B" block fabrication is approximately four weeks behind schedule due to a delay in furnishing the Navy Yard with the milling machinery but no adjustment of the scheduled completion date is anticipated. Procurement has been initiated on approximately 83 per cent of all materials and equipment required. National Production Authority assistance has been requested on various items and close control is being maintained in order that further assistance may be requested if necessary.

Hanford Works Laboratory Area

C-199 - Expansion of 300 Area Sewage Disposal

Completion: Design 100 per cent, construction 0 per cent.

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C-257 - H.I. Control and Development Laboratory

Completion: Design 100 per cent, construction 45 per cent. Despite some Saturday work at the construction contractor's expense, construction continues behind schedule due to a delay in steel deliveries. Substantially all construction material and equipment is now on the job site.

C-381 - Radiochemistry Building

Completion: Design 100 per cent, construction 3 per cent. A National Production Authority directive has been issued for structural steel.

C-385 - Radiometallurgy Building

Completion: Design 100 per cent, construction 0 per cent.

C-394 - Hanford Works Laboratory Area - Plot Plan and Utilities

Completion: Design 100 per cent, construction 4 per cent. The construction contract on the Badge House was awarded to L. H. Hoffman and the Notice to Proceed was issued on September 21.

C-406 - Mechanical Development Building

Completion (Phase I): Design 100 per cent, construction 100 per cent. Negotiations for the design of Phase II, the completion of the building interior, have been referred to the Atomic Energy Commission for fee determination.

C-414 - Pile Technology Building

Completion: Design 100 per cent, construction 0 per cent.

C-421 - Library and Files Building

Completion: Design 100 per cent, construction 1 per cent. The construction contract was awarded to L. H. Hoffman and work commenced September 27.

C-433 - Steam Plant Addition

Completion: Design 22 per cent, construction 0 per cent.

4. **Current** Studies

Two additional Research and Development Authorizations are being prepared for approval. They are, (1) "Separations Process Engineering Expansion and Improvement" and (2) "Process Cooling Water System Including Retention Basin, Design Development."

A study was made of the possibility of coordinating and tying in Hanford Works surveys with U.S. survey systems.

Work was initiated on the feasibility of certain modifications to the pumping capacity in the existing 190 buildings during the installation of the Ball Third Safety System.

Feasibility Study - Commercial Operation

Representatives participated in a conference with engineers from Chemical and Public Utility Companies on the subject of utilization of atomic energy for commercial power production.

ER-6009 - Future 700-1100 Area Steam Plant Requirements

A study of various proposals for supplying present and future steam requirements in the 700-1100 Area is being conducted.

B. OTHER ASSIGNMENTS

C-187-D - Redox Production Facility

Completion: Design 100 per cent, construction 99.9 per cent. "As Built" tracings are being received from the Vitro Corporation. All equipment for the completion of the canyon installation has been received.

C-187-E - Redox Analytical Plant Assistance Laboratory (Conversion of Unassigned Space for Radio Chemistry Laboratory)

Completion: Design 85 per cent, construction 5 per cent. No construction was scheduled or accomplished during the month. Laboratory equipment purchase requisitions were prepared.

C-192 - Biology Laboratory, Part III

Completion: Design 95 per cent, construction 88 per cent. Bid assemblies are being prepared for minor additional construction.

C-204-B - Additions and Alterations to Kadlec Hospital and Medical Arts Building

Completion: Design 100 per cent, construction 94 per cent. The construction completion date was September 27, however, delays in delivery of construction materials necessitated contract modification extending completion date to November 30, 1951.

C-289 - 200-W Laundry Addition

Completion: Design 100 per cent, construction 0 per cent.

C-295 - Enlarging 251 Substation

Completion: Design 100 per cent, construction 76 per cent. Work on the rebuilding of the East section of the substation was started by Montgomery Electric Company on September 11.

C-340 - P-11 Project

Completion: Design 95 per cent, construction 96 per cent. Phase 3 installation is complete and unit is operating.

[redacted] DECLASSIFIED

C-349 - Hot Semi-Works

Completion: Design 100 per cent, construction 34 per cent. A National Production Authority directive for stainless steel fittings was requested.

C-364 - Aquatic Biology Laboratory

Completion: Design 100 per cent, construction 0 per cent. The contract for construction was awarded and the Notice to Proceed was issued to the Erwen Construction Company on September 26. Excavation began September 27.

C-380 - Electricity Metering - Village of Richland

Completion: Design 100 per cent, construction 51 per cent. All meters for residential use have been received and installation is approximately 45 per cent complete. Fabrication work on commercial facilities is in progress but actual installation work has not begun.

C-398 - Experimental Coating Hood - Building 234-5

Completion: Design 100 per cent, construction 80 per cent.

C-404 - Primary Power Lines for Hanford Works Laboratory Areas

Completion: Design 95 per cent, construction 0 per cent.

C-410 - Inpile Atmosphere Experiment

Completion: Design 90 per cent, construction 69 per cent.

C-411 - P-10-X Slug Storage and Shipping Facilities

Completion: Design 100 per cent, construction 90 per cent. Testing of the first off-site shipping cask is essentially complete.

C-412 - P-10-X - Extraction Facilities

Completion: Design 100 per cent, construction 50 per cent. The air mask washing facility, burial ground, supply and exhaust systems and slug supply casks were completed during September. Work was begun on the Metallurgical Laboratory installation.

C-416 - Minor Construction Fabrication Shops (Part II)

Completion: Design 0 per cent, construction 0 per cent. The project proposal has been completed, approved by the Appropriations and Budget Committee and forwarded to the Atomic Energy Commission.

C-418 - Additional Waste Storage Facilities - 241-TX

Completion: Design 96 per cent, construction 54 per cent.

[redacted]

C-419 - Induction Heating Unit - Building 3732

Completion: Design 100 per cent, construction 0 per cent.

C-420 - 200-W Badge House Addition

Completion: Design 100 per cent, construction 0 per cent. The development of a new type of badge rack eliminates the necessity for the addition to the building and the project is being rescoped.

C-423 - Additional Waste Evaporation Facilities - 200-E

Completion: Design 100 per cent, construction 33 per cent.

C-430 - Improved Lighting - 703 Building

Completion: Design 100 per cent, construction 0 per cent. Invitations to bid were distributed.

C-432 - Air Raid Warning System - Richland-North Richland

Completion: Design 95 per cent, construction 66 per cent.

C-434-R - New Bio-Assay Laboratory

Completion: Design 100 per cent, construction 0 per cent. All work has been suspended pending final determination of the location for the facility.

C-438 - Ball Third Safety System

Completion: Design 90 per cent, construction 0 per cent. A review was made of the control system to determine the adequacy of the multiple conductor cables proposed for use between the control panels and the mechanisms on the top of the reactor. Bids for the fabrication of hoppers and flexible vertical rods have been received and are being reviewed. A National Production Authority directive was requested during the month to insure satisfactory delivery dates for materials and equipment.

C-440 - Alterations to 712-A Hutment

Completion: Design 100 per cent, construction 55 per cent.

C-441 - Solvent Building

Completion: Design 80 per cent, construction 0 per cent.

C-445 - B-Y Telephone Exchange Additions and Changes

Completion: Design 100 per cent, construction 0 per cent. The bid assembly has been distributed. Promised delivery dates for engineered equipment on order were satisfactory.

[redacted]

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C-446 - Additional Effluent Disposal Facilities - Building 234-5

Completion: Design 100 per cent, construction 93 per cent. The facilities are in use.

C-447 - Portable Meteorological Mast

Completion: Design 35 per cent, construction 0 per cent.

C-451 - Extension of 300 Area Underground Electrical Power Distribution System

Completion: Design 100 per cent, construction 0 per cent.

C-452 - Meteorology Tower Elevator

Completion: Design 100 per cent, construction 0 per cent.

C-454 - Spectrometer Shielding

Completion: Design 80 per cent, construction 20 per cent.

C-456 - Additional 13 Quad Telephone Cable B-Y to Point I

Completion: Design 100 per cent, construction 19 per cent.

C-457 - Pile Technology Office Building - 100-D Area

Completion: Design 100 per cent, construction 0 per cent. Bids for construction were received; the low bid was submitted by S. S. Mullen Company and was within authorized funds.

C-468 - Horizontal Rod Mock-Up

Completion: Design 100 per cent, construction 10 per cent. Graphite machining has been completed. Procurement difficulties necessitate the removal of an electric drive unit from 105-B Building for completion of the 189-D mock-up.

C-469 - Front Tube Corrosion Mock-Up

Completion: Design 100 per cent, construction 0 per cent. The project proposal has been approved and material is being obtained.

C-471 - Renovation of Pasco Type Barracks for Office Buildings

Completion: Design 100 per cent, construction 90 per cent. Alterations to Buildings #168 and #178 have been deleted from the scope of the work.

C-476 - Oxidation and Fluorination Equipment, Hood #8, Building 234-5

Completion: Design 100 per cent, construction 0 per cent.

[redacted]

1217221

C-477 - Building 284-W Fifth Boiler Addition

Completion: Design 5 per cent, construction 0 per cent. A project proposal has been submitted covering engineering and procurement of critical materials.

M-607 - Relocation of Exponential Facilities

Completion: Design 100 per cent, construction 55 per cent. Removal of refrigeration units and construction of four pile foundations are completed.

A-693 - Install Gutters on 700 Area Buildings

Informal Request is being submitted.

ER-A-459 - Electrical Service - New 703 Building Wing

Bid assemblies are being prepared.

ER-A-691 - Positive Ion Accelerator

Completion: Design 20 per cent, construction 0 per cent. A Type A-Model H, two million volt Van de Graaf positive ion accelerator is to be installed and will be located in the 300 Area.

ER-E-469 - Water, Sewer and Steam Connections and Modifications to Fire Alarm System - 703 Building Wing

Completion: Design 95 per cent, construction 0 per cent.

ER-2710 - Start Up Studies - RMA Line, Building 234-5

Completion: Design 20 per cent, no construction involved.

Project proposals are being prepared on the following subjects:

300 Area Administration Building
Reinforce and Increase Capacity of Cask Cars
Remodeling 722-C Building for Office Equipment Repair
Soil Science Laboratory
100-B Automatic Dial Telephone Exchange
Experimental One Tube Ink Facility
Earthquake Detectors
Duct Level Safety Showers, Building 234-5
313 Mechanization
Equipment for 8" Slug Manufacture

C. RELATED SERVICES

1. Design

The drafting and reproduction work load decreased somewhat during the month.

[redacted] DECLASSIFIED 1217222

2. Construction

At the end of the month the population of North Richland was 6,073, not including U. S. Army personnel. The increase of 403 over the preceding month resulted from hiring additional construction workers. This increase did not require the re-activation of any barracks but two additional are being prepared for future use. Ninety-eight trailer spaces and three trailer bathhouses were opened.

Specifications for painting the buildings in the 3000 Administration Area have been approved and invitations to bid are being prepared.

3. Contracts

Thirty-two contract items involving an increased commitment of $1,092,585.25 were completed during the month. The major items ($100,000.00 or more) were the awarding of Subcontract G-376 to the Erwen Construction Company for the construction of the Aquatic Biology Laboratory (Project C-364) and Subcontract G-407 to L. H. Hoffman for construction of the Library and Files Building (Project C-421) and Badge House (Project C-394). One major modification to Subcontract G-352 with L. H. Hoffman was completed to provide payments for wage escalation and additions and deletions of work in connection with the Hot Semi-Works (Project C-349). Six additional minor contracts were awarded and nine minor contracts were completed during the month.

Thirty contracts were assigned to the Atomic Energy Commission, effective October 1, 1951 and one subcontract was assigned to the Guy F. Atkinson-J. A. Jones Construction Company effective September 29, 1951.

Forty subcontracts and one hundred and ten lower tier subcontracts were active during September.

III. ORGANIZATION AND PERSONNEL

During the month of September the transfer of all draftsmen and designers from the Design and Development Unit to the Design and Construction Services Unit was completed, resulting in one centralized Drafting Room containing all the draftsmen and designers assigned to the Design and Construction Management Section.

Mr. C. A. Rohrmann was transferred from the Technical Section to the Design and Development Unit, to the position of Principal Chemical Engineer.

Mr. H. E. Grantz, Designing Engineer, Reactor Unit, was transferred to the Apparatus Division, Schenectady, New York.

The Drafting Training School completed its first course on September 7 and was suspended.

[redacted]

Other personnel information follows:

	Beginning of Month	End of Month	Net Change
Employees on Payroll	854	851	-3
Technical Graduates Rotational Trainees	38	22	-16
Business Graduates Rotational Trainees	3	1	-2
Employees on loan from:			
Purchasing and Stores Section	1	1	0
Manufacturing Department	12	12	0
Technical Section	0	0	0
Schenectady	4	4	0
	912	891	-21

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1217224

MEDICAL DEPARTMENT

SEPTEMBER 1951

General

Personnel Changes

The roll decreased from 282 to 265. The change was largely due to the organizational transfer of employees from Medical to Financial.

Visits

Mr. Bakko attended the annual meeting of the American Hospital Association in St. Louis. Dr. Norwood attended the annual Washington State Medical Association meeting in Seattle. Five representatives of the hospital attended the Washington State Hospital Association annual meeting in Tacoma. Dr. Sachs attended the annual meeting of the Washington State Public Health Association in Everett, Washington.

Dr. O. Hoffman, Dental Consultant, State of Washington Department of Health, consulted with staff dentists and the public health section regarding a survey of pre-school and school children in anticipation of the start of fluoridating water supplies to decrease dental caries.

Industrial

Employee physical examinations decreased from 3293 to 2641. Dispensary treatments changed little from 10,928 to 10,762.

Four major and eleven sub-major injuries were treated. Two of the sub-major and none of the major injuries were sustained by General Electric employees. The health topic discussed simple measures for care of the sick in the home. Sickness absenteeism data is not available due to changes in the method of reporting.

Kadlec Hospital

The average daily census increased from 88.9 to 99.2 (85.2 adults, 14 infants). The census was 84.8 a year ago.

The hospital construction project is about 85% complete. A modification of this project to allow use of unspent funds for addition of 10 to 12 beds is being prepared. With crowding already present before the winter peaks have arrived, the need for additional beds becomes increasingly obvious.

The occupancy rate for mixed services (all services except obstetrics) was 85.4%.

Nursing hours per patient day were 3.27 for the mixed services and 3.54 for obstetrics. These low figures were due to the high patient load.

The ratio of inpatient hospital employees to patients (excluding newborn) for August was 1.95.

Public Health

The total home nursing visits increased about 30% due to the opening of schools and resultant increase in morbidity. With the opening of school an increased number of children with behavior problems came to the attention of the social service counselors.

Mosquitoes were more prevalent in Richland due to more indiscriminate use of irrigation water in the general area and perhaps to the development of mosquitoes more resistant to D.D.T. The problem will require more concerted action next year.

1217225

General (Continued)

Costs (August)

Medical Department costs, before assessments to other departments were as follows:

	July	August	August Budget
Industrial Medicine (Oper.)	$ 35,195	$ 36,664	$ 39,576
Public Health (Oper.)	9,941	10,076	11,939
Kadlec Hospital (Net)	20,146	27,569	34,395
Hospital expense credits	4,954	2,862	2,625
Subtotal-Medical Dept.-Operations	70,236	77,171	88,535
Construction Medical (Industrial and Public Health)	14,402	13,663	12,878
Total Operations and Contruction	84,638	90,834	101,413

The net cost of operating the Medical Department before assessments to other departments was $90,834, an increase of $6,196 and $10,579 below the budget.

Kadlec Hospital gross costs increased $7,191, due to a $1,900 salary increase and $5,300 increase in supplies and other costs.

Other changes were small and indicate the usual month to month variations.

1217225

MEDICAL DEPARTMENT

SEPTEMBER 1951

Industrial Medical Section

General

The total number of examinations decreased from 3293 to 2641. General Electric employees sustained 2 sub-major injuries but no major injuries. Sub-contractor employees sustained 4 major injuries and 9 sub-major injuries. First Aid treatments decreased from 10,928 to 10,762. Treatments for General Electric employees decreased by approximately 200 while treatments for construction employees increased by approximately 200. Due to a shortage of industrial nurses First Aid service was temporarily discontinued in the 300 Area on the 4-12 shift. Service was begun in 101 Area on a 4-hour basis.

Drs. W. E. Russell and M. L. Weitz joined the industrial medical staff on September 4th. Dr. Russell has been assigned to the 100 Areas and Dr. Weitz at North Richland. Dr. D. H. Eckles was transferred to the Schenectady plant.

Seven new ambulances for area service were obtained to replace existing equipment. One ambulance will be located in each operating area in the future in place of two. The diathermy equipment was also replaced during the month. A total of 12 units were obtained and they will meet the new FCC regulations effective during 1952, which necessitated this replacement.

The industrial physicians' scientific meetings were again started after the summer vacation. Dr. L. K. Bustad discussed the work now in progress on the I_{131} experiment for the September meeting.

The Chemical Hazards Committee met on September 21st and studies on the heat and temperature environment in 300 Area and on an oxide of nitrogen hazard in the White Bluffs area were initiated.

The Health Activities Committee met on September 19th. The health topic dealt with "How to Care for the Sick in the Home" and material on this subject was prepared for distribution and discussion throughout the plant.

Sickness absenteeism data is not available due to changes in the method of reporting.

Gross costs for the previous month (August) were increased $1,924 over July. This increase was due to the following reasons:

(1) Medical Records salaries reflected an increase of approximately $1,000 because of vacation payments in August being much greater than in July, and several employees were given a week's time off in July without pay. In addition, vacations were started by several employees in June that carried over into July with vacation payments

1217227

Industrial Medical Section
General (Continued)

made in June. The net result of these factors was lower salary costs in July than normal. Actual June and August salary costs were approximately the same.

(2) Passenger car rental increased $300 due to increased usage.

(3) Maintenance costs increased $600 due to increased work orders and routine maintenance work.

Revenue increased $455 due to increased activity in the First Aid section at Kadlec Hospital. Expense Credits decreased due to less work done for Community Real Estate and Services Department, and the Engineering Department.

	Increase or (Decrease) over Previous Month	August	July	August Budget
Administration	$ (462)	$ 6881	$ 7343	$ 8810
Household & Property	1044	5259	4215	4826
Professional Services	1342	25800	24458	26440
Total Direct Expense	1924	37940	36016	40076
Less: Revenue	455	1276	821	500
Expense Credits	(1074)	3753	4827	11113
Net Cost of Operation	2543	32911	30368	28463

1217228

Industrial Medical Section (Continued)

Physical Examinations	August	September	Year to Date
Operations			
Pre-employment	278	193	2655
Rehire	37	23	447
Annual	16	7	1884
Interval	365	249	2567
Visitor	1	1	8
A. E. C.	4	1	145
Re-examination and rechecks	102	77	1216
Termination	186	218	1553
Sub-total	989	769	10475
Sub-contractors			
Pre-employment	581	654	3550
Rehire	671	520	3507
Recheck	119	116	858
Termination & Transfer	933	582	5851
Sub-total	2304	1872	13766
Total Physical Examinations	3293	2641	24241
Laboratory Examinations			
Clinical Laboratory			
Government	20	6	632
Pre-employment, termination, transfer.	8688	8695	63570
Annual	89	44	9880
Recheck (Area)	1850	1269	13248
First Aid	24	24	168
Clinic	612	484	14554
Hospital	3986	4094	39145
Public Health	29	24	221
Total	15298	14640	141418
X-Ray			
Government	3	1	90
Pre-employment, termination, transfer.	1407	1370	10116
Annual	20	10	1879
First Aid	258	238	1844
Clinic	402	386	2781
Hospital	348	259	2672
Public Health	0	9	55
Total	2438	2273	19437
Electrocardiographs			
Industrial	7	11	156
Clinic	11	4	50
Hospital	33	32	291
Total	51	47	497
Allergy			
Skin Tests	0	0	17

1217229

MEDICAL DEPARTMENT

SEPTEMBER 1951

Industrial Medical Section (Continued)

First Aid Treatments	August	September	Year to Date
Operations			
New Occupational Cases	406	711	3442
Occupational Case Retreatments	1102	1043	9665
Non-occupational Treatments	2955	2803	25271
Sub-total	4463	4557	38378
Construction			
New Occupational Cases	1240	1185	8769
Occupational Case Retreatments	4096	3820	30484
Non-occupational Treatments	1075	1160	9417
Sub-total	6411	6165	48670
Facility Operators	54	40	338
Total First Aid Treatments	10928	10762	87386
Major Injuries			
General Electric	1	0	4
Sub-contractors	3	4	31
Total	4	4	35
Sub-major Injuries			
General Electric	0	2	14
Sub-contractors	16	9	99
Total	16	11	113
Absenteeism Investigation			
Total No. calls requested	13	16	112
Total No. calls made	13	16	112
No. absent due to illness in family	0	0	0
No. not at home when call was made	4	4	24

1217230

MEDICAL DEPARTMENT

SEPTEMBER 1951

Hospital Section

General

The Medical Department's roll decreased during the month from 282 to 265.

The average daily adult census increased from 75.9 to 85.2 as compared to 73.2 a year ago. This represents an occupancy percentage of 82.7% broken down as follows: Mixed service (Medical, Surgical, Pediatrics) 85.4%; Obstetrical Service 74.5%. The minimum and maximum daily census during the month ranged as follows:

	Minimum	Maximum
Mixed Service	47	82
Obstetrical Service	5	21
Total Adult	55	100

The average daily newborn census increased from 13 to 14 as compared to 11.6 a year ago.

Nursing hours per patient per day:

Medical, Surgical, Pediatrics	3.27
Obstetrical	3.54

The ratio of in-patient hospital employees to patients (excluding newborn) for the month of August was 1.95. When newborn infants are included, the ratio is 1.66.

Kadlec Hospital net costs for August increased $7,423 as compared to July. Gross costs increased $7,191. Revenues increased $1,860 and Expense Credits decreased $2,092.

Increased gross costs were due to increased supplies of $5,300 and increased salaries of $1,900.

Revenue increased $1,860 in August with an increase in the census. Expense Credits decreased $2,092 due primarily to fewer hospitalized industrial patients.

Dr. Norwood, Mr. Bakko, Mrs. Turner, Mr. Woodhead, and Mr. Quigley attended the Washington Hospital Association meeting in Tacoma on September 11 and 12. Mr. Bakko also attended the American Hospital Association Convention in St. Louis.

Work appears to be progressing satisfactorily in the hospital construction program. Work has begun on the east side of the OB wing. X-ray and Clinical laboratories are also proceeding rapidly. Pharmacy has been completed except for very minor changes.

121731

MEDICAL DEPARTMENT

SEPTEMBER 1951

Hospital Section (Continued)	August	September	Year to Date
Kadlec Hospital			
Average Daily Adult Census	75.9	85.2	83.5
Medical	29.3	29.1	26.5
Surgical	22.7	27.3	30.0
Pediatrics	10.9	13.9	14.4
Obstetrical	13.0	14.9	12.6
Average Daily Newborn Census	13.0	14.0	12.3
Maximum Daily Census:			
Mixed Services	77	82	
Obstetrical Service	18	21	
Total Adult Census	92	100	
Minimum Daily Census:			
Mixed Services	46	47	
Obstetrical Service	7	5	
Total Adult Census	58	55	
Admissions: Adults	461	516	4648
Discharges: Adults	464	512	4635
Newborn	79	94	672
Patient Days: Adult	2354	2555	22802
Newborn	403	420	3346
Total	2757	2975	26148
Average Length of Stay: Adults	5.1	5.0	4.9
Newborn	5.1	4.5	5.0
Occupancy Percentage: Adults	73.7	82.7	81.1
Newborn	92.9	100	87.9
(Occupancy Percentage based on 103 adult beds and 14 bassinets.)			
Avg. Nursing Hours per Patient Day:			
Medical, Surgical, Pediatrics	3.80	3.27	
Obstetrics	4.14	3.54	
Avg. No. Employees per Patient (excluding newborn)	1.95		
Operations: Major	57	77	695
Minor	57	71	757
E.E.N.T.	53	46	608
Dental	3	2	30
Births: Live	82	90	664
Still	0	1	3
Deaths	6	4	43
Hospital Net Death Rate	.76	.50	.38
Net Autopsy Rate	16.7	100	34.9
Discharged against advice	1	2	11
One-day Cases	94	117	957
Admission Sources:			
Richland	71.6	72.1	74.8
North Richland	14.7	13.4	11.8
Other	13.7	14.5	13.4

1217232

MEDICAL DEPARTMENT

SEPTEMBER 1951

Kodlec Hospital (Continued)	August	September	Year to Date
Admissions by Employment:			
General Electric	68.1	70.7	71.9
Government	3.2	1.4	2.5
Facility	4.1	4.7	4.5
Sub-contractors	20.0	17.0	15.9
Schools	.9	.8	1.4
Military	1.7	2.5	1.9
Others	2.0	2.9	1.9
Hospital Outpatients Treated	509	559	4180
Physical Therapy Treatments			
Clinic	58	168	1164
Hospital	78	123	742
Industrial: Plant	125	92	1166
Personal	25	7	179
Total	286	390	3251
Pharmacy			
No. of Prescriptions Filled	3032	2991	27970
No. of Store Orders Filled	673	663	6263
Patient Meals			
Regulars	4218	4658	37309
Specials	1332	1171	11316
Lights	7	1	111
Softs	739	879	11354
Tonsils & Adenoids	92	74	1266
Liquids	201	395	1995
Surgical Liquids	78	99	717
Total	6667	7277	64068
Cafeteria Meals			
Noon	1783	1651	13471
Night	267	237	2112
Total	2050	1888	15583

1217233

MEDICAL DEPARTMENT

SEPTEMBER 1951

Public Health Section

General

The communicable disease level remained about the same with no significant change in the distribution of infectious disease. A white adult female was hospitalized at Kadlec Hospital for poliomyelitis but this case was charged to Benton-Franklin County jurisdiction, since she lives outside the Richland area.

The total home nursing visits increased approximately 30%, due to the vacation period ending, the opening of schools, and the increase in morbidity.

Dr. C. Don Platner, Orthopedist, consulted with hospital staff members regarding our current poliomyelitis cases. After examination, he advised physical therapy for correction of difficulties.

Dr. O. Hoffman, Dental Consultant, State of Washington Department of Health, consulted with staff dentists and this section regarding a survey of preschool and school children in anticipation of the start-up of fluoridating water supplies as a means of decreasing dental caries. The opinion of the local group as a result of surveys is acceptable. Our local dentists are interested in a dental hygiene educational program which we will attempt to work out with the State Consultant in the form of work shops, demonstrations, and the use of printed material.

With the opening of school, an increased number of children with behavior problems came to the attention of the social service counselors. Some of these children were entering school for the first time and were finding it difficult to adjust to group activity. Others were not making normal adjustments because of method, physical or emotional handicaps.

The counselors had during September six requests from agencies outside the community to assist in working out plans for broken families where some members of the family were living in Richland. This represents a considerable increase over former requests for this type of service and indicates recognition by other established agencies.

One social service counselor resigned in order to attend the University of Washington to further her education.

Mosquito control operations were terminated this month. The prevalence of adult mosquitoes reached a peak during the month of August as measured by complaints received. This was largely due to indiscriminate use of water by tenants. Progress was made during the season towards elimination of breeding areas by controlling the irrigation water on land leased for horse pastures.

1217234

Public Health Section (Continued)

General (Continued)

Water and sewage samples taken during the month were all satisfactory.

Route inspections of food handling establishments have been made and results have been satisfactory. Two establishments have not as yet become eligible for Grade A ratings. Several restaurant operators have purchased lendane vaporizers for fly control and results thus far have been excellent.

Bacteriological samples made on Grade A pasteurized milk indicated an acceptable quality. Results of milk samples from 116 producers taken this month were satisfactory.

A sanitary survey was made of ladies' lounges and rest rooms by a representative of the fire department and a member of the sanitation staff. Paper service for drinking utensils was recommended where inadequate washing facilities existed.

It was recommended that grease traps be eliminated in our restaurants, if proper precautions are used. The need for such installation has decreased due to the use of detergents to the point where their abandonment is practical.

1217235

MEDICAL DEPARTMENT

SEPTEMBER 1951

Public Health Section (Continued)	August	September	Year to Date
Education			
Pamphlets distributed	10000	10000	90666
News Releases	0	0	0
Staff Meetings	0	1	11
Classes	0	2	23
Attendance	0	70	326
Lectures & Talks	3	5	43
Attendance	155	90	1135
Films Shown	1	0	26
Attendance	12	0	1146
Community Conferences	26	78	315
Radio Broadcasts	0	0	0
Immunizations			
Diphtheria	24	10	137
Diphtheria Booster	16	39	327
Tetanus	26	10	628
Tetanus Booster	17	39	472
Pertussis	22	10	51
Pertussis Booster	15	39	299
Rocky Mountain Spotted Fever	0	0	8
Rocky Mountain Spotted Fever Booster	0	0	2
Typhoid	0	0	17
Typhoid Booster	0	0	0
Smallpox	6	37	91
Smallpox Revaccination	13	26	277
Tuberculin Test	4	0	31
Social Service			
Cases carried over	83	75	749
Cases admitted	9	22	147
Cases Closed	17	42	172
Remaining case load	75	55	724
Activities:			
Home Visits	28	25	217
Office Interviews	158	193	1898
Conferences	57	52	604
Meetings	8	12	121
Sanitation			
Inspections made	193	96	1235
Conferences held	20	10	109
Bacteriological Laboratory			
Treated water samples	280	214	1858
Milk samples (inc. cream & ice cream)	11	10	111
Other bacteriological tests	236	215	2194
Total	527	439	4163

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MEDICAL DEPARTMENT

SEPTEMBER 1951

Public Health Section (Continued)	August	September	Year to Date
Communicable Diseases			
Amoebic Dysentery	0	0	1
Chickenpox	1	2	377
Erysipelas	0	0	7
German Measles	9	5	92
Gonorrhea	0	0	1
Histoplasmosis	0	0	1
Impetigo	0	1	4
Influenza (Upper Respiratory Infection)	0	0	3092
Measles	0	0	1115
Meningitis	0	0	2
Mumps	4	6	23
Salmonellosis	0	0	2
Pinkeye	0	0	13
Poliomyelitis	1	1	2
Rheumatic Fever	0	1	3
Ringworm	4	6	26
Roseola	0	0	14
Scabies	0	0	4
Scarlet Fever	0	1	51
Syphilis	0	0	21
Tuberculosis	0	0	8
Vincents Infection	2	0	2
Whooping Cough	1	0	8
Total	22	23	4869
Total No. Nursing Field Visits	544	707	7204
Total No. Nursing Office Visits	72	159	1110

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MEDICAL DEPARTMENT'S PERSONNEL SUMMARY

September 30, 1951

		Physicians	Nurses	Anesthetists	Nurse Aides	Orderly & Amb. Dr.	Technicians - Clin. Laboratory	Tech. - X-Ray	Tech. - Bac.Lab.	Tech. - Phy.Ther.	Secretary	Clerical - Other	Steno - Typist	Office Mach.Opr.	Telephone Oper.	General Clerk	Pharmacist	Dietitian	Cook	Kitchen Worker	Soc. Serv. Couns.	Sanitarian	Health Educator	Janitors	Records Supv.	Adm. & Assistant	Others	TOTAL
1100 Area	Department Admin.	2	2								2		1		3	4									1	2	1	18.0
NR Area	Industrial	3	4		1								2	1		7.375								4.4				22.8
	Hospital	2	60	2	24	5	7.4	4	1	1			4			10.5	3	2	5	10				8			7	155.9
	Public Health	1	7		1								2			1.125					3	2	1	.6				18.7
Outlying Areas	Industrial	2.7	1				2	1								7								.7				14.4
	Public Health		2																					.3				2.3
	M. J. - 4		1																									1.0
	100-B	.1	1													.25												1.4
	100-D	.1	4				.2									.25												4.6
	100-F	.1	4													.25												4.3
	100-H	.1	1													.25												1.4
	241-S		1																									1.0
	200-E	.2	4													.333												4.5
	200-W	.3	5				1.4									.333												7.0
	300	.2	1													.333												1.5
	100-C	.2	3													1												4.2
	White Bluffs		2																									2.0
	T O T A L	12	103	2	26	5	11	5	1	1	2		9	1	3	33	3	2	5	10	3	2	1	14	1	2	8	265

* 4 part-time and temporary nurses included

Number of employees on roll:
Beginning of month 282
End of month 265
Net decrease 17

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HW-22304 Del

RADIOLOGICAL SCIENCES DEPARTMENT

SEPTEMBER 1951

Summary

There were two Class I special hazards incident investigations. Previously reported Informal Incident #59 was reclassified as Class II Incident #19.

Improved control of I^{131} emission from the separations plants reported last month continued during this period. An increase noted in off-area vegetation activity could be attributed to either seasonal change in meteorological conditions, or to an observed increase in I^{131} passing through the sand filters.

There was no notable deviation from established patterns in other phases of control activities. Research and development programs progressed satisfactorily, without incident or exceptional finding.

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RADIOLOGICAL SCIENCES DEPARTMENT

SEPTEMBER 1951

Organization

The composition and distribution of the force as of 9/30/51 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	0	0	6	0	1	6	11	5	0	29
Engineers *	1	0	28	0	3	21	17	5	0	75
Clerical	0	0	4	0	1	2	3	4	0	14
Others	15	4	44	3	29	61	56	14	7	233
Total	16	4	82	3	34	90	87	28	7	351

* includes chemists, biologists, etc.

Number of employees on Payroll	September 1951
Beginning of month	464
End of month	351
Net decrease	113

Substantially all of this decrease was attributable to the transfer to the Manufacturing Department of a force appropriate for the performance of the radiation monitoring function in manufacturing facilities. This involved transfer of 38 exempt and 75 non-exempt employees.

Other changes were the addition of a chemist, 3 inspectors, a technical graduate, 2 badge workers, 3 laboratory assistants, 3 personnel meters clerks, and a general clerk.

Removed from the roll were a superintendent, an area supervisor, an inspector, a technical graduate, 3 laboratory assistants, 3 personnel meters clerks, a field clerk, a general clerk, a biological attendant, and a steno-typist.

General

The work of the three sections of the department will be reported in subdivisions established by the new unit structure, and in general in somewhat more condensed form than in the past. Research activities will be mentioned only sufficiently to indicate trends of work or to point up significant new findings. The series of quarterly research and development reports and completed topic reports should provide adequate reporting in these phases.

[redacted]

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1217240

Radiological Sciences Department

Investigations previously collected in this part of the report will henceforth appear logically under the work of the Standards Unit.

The emission of I^{131} increased to limits higher than those permanently desirable. However, no critical situation was detected in off-site monitoring.

The following trips were reported:

N.L. Dockum, Biol. Photo. Assoc., Boston, Mass.
J.E. Katz and L.C. Schwendiman, Int.Congress Pure & Applied Chem.,New York
H.M. Parker, Am. Roentgen Ray Society, Wash.D.C.
D. Weinberger, A.C.S., New York.

During the period covered by this report, all persons in the Radiological Sciences Department engaged in work which might reasonable be expected to result in inventions, or discoveries, advised that to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work except as listed below. Such persons further advised that for the period therein covered by this report, notebook records if any kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	Title
none	none

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4

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RADIOLOGICAL RECORDS AND STANDARDS SECTION

1. Radiation Monitoring Services

General Statistics

	August	September	1951 To Date
Special Work Permits	477	572	4,599
Routine & Spec.Surveys	937	1096	7,335
Air Monitoring Samples	309	767	3,045
Skin Contamination Cases	36	57	277

In the P-10 operation, five people had activity density in the urine in excess of 20 μc T per liter, but none exceeded 37 μc per liter.

In Control Laboratories, 272 non-regulated items were found contaminated, and there were 39 contaminated floor locations.

The Construction program encountered hazards of spot contamination at the 241-CR tank farm, apparently carried over from an incident in July, and of spots reading up to 60 mrep/hr near the 241-BR farm caused by the work of the Separations Section on the 153-BX diversion box.

The Plant Laundry was contaminated by the receipt of improper items, including a syringe, a sampler, and a waste carton from the 234-5 Building. This was not the first such incident, and coupled with the celebrated case of the contaminated patrolman, it indicates a need for modification and tightening of waste disposal procedures.

In the 300 Area Technical Laboratories, a chemist received a dose of 1 rep to the hands while processing dissolver solution. There was general contamination in one room due to inferior clean-up procedures.

A loading dock at a Richland warehouse was contaminated on receipt of a cask from the Argonne National Laboratory. The Consolidated Freightways truck involved was not contaminated.

2. Standards

Progress was made in the writing of standards to regulate protection under the new system. It is proposed to prepare the basic set of standards rather than to issue them piecemeal.

Two Class I incidents were investigated. These concerned the Plant Laundry contamination and the warehouse contamination described above.

5

Informal Incident #59, relating to contaminated coveralls was reclassified as Class II incident #19, because of the virtual certainty that the coverall contamination involved led to localized overexposure of the wearer.

3. Exposure Records

Personnel Meters, and Records and Photometry

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W Const.* 200-W 10,393*	300	Total	1951 To Date
Pencils read	15,536	14,072	12,547	8,178	28,700	35,959	21,473	146,858	1,459,732
Single readings (100 to 280 mr)	14	15	6	5	34	13* 49	11	147	1,806
Paired readings (100 to 280 mr)	2	1	1	0	0	0	0	4	40
Single readings (Over 280 mr)	41	24	39	13	59	34* 107	44	361	2,746
Paired readings (Over 280 mr)	1	1	0	0	1	1	0	4	49
Lost readings	1	1	1	1	2	1	0	7	55

Of the 8 significant pencil readings reported, two were confirmed by the badge results. Neither of these constituted an overexposure.

Investigation of the 7 lost readings show 3 with no possibility of an overexposure, and 4 to be covered by an investigation.

Badges	100-B	101P-P11 100-D	100-F	100-H	200-E	R.R.T. 200-N	200-W	300	Total	1951 To Date
Badges Processed	3,333	2,760	2,539	2,125	1,370	206	4,890	5,274	22,497	231,761
Number readings (100 to 300 mrep)	34	50	64	33	42	0	75	101	399	3,837
Number readings (300 to 500 mrep)	1	7	1	0	5	0	1*	2	17	248
Number readings (500 to 1000 mrep)	0	0	0	0	0	0	0	0	0	79
Number readings (Over 1000 mrep)	0	0	0	0	0	0	0	0	0	18
Lost Readings	2	1	2	3	2	0	6	2	18	103

*Over 300 mr gamma

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Lost readings were accounted for as follows:

Badge lost in area	5
Film not packaged	5
Stuck film	5
Contaminated badge	2
Shot with X-ray	1
Total	18

Investigation of the above lost readings indicated no possibility of an over-exposure.

Badge Resume, Construction Areas

	100-C Const.	200-W Const.	200-E Const.	Total	1951 To Date
Badges Processed	875	5,100	3,830	9,805	71,732
Number readings (100 to 300 mrep)	0	22	4	26	218
Number readings (300 to 500 mrep)	0	0	0	0	24
Number readings (500 to 1000 mrep)	0	0	0	0	11
Number readings (Over 1000 mrep)	0	0	0	0	1
Lost Readings	2	0	2	4	24

Total badges processed 1951, Operation 231,761
Construction 71,732
Total 303,493

In addition to the badge program, a total of 1,081 items of a non-routine nature were processed during the month.

Slow Neutron Pencil Summary

	100-B	100-D	100-DR	100-F	100-H	Total	1951 To Date
Number of pairs issued	5	9	65	0	272	351	3,686
Number of significant readings	0	0	0	0	8	8	226
Number of significant readings (above 50 mrem)	0	0	0	0	2	2	5

Investigation of the two significant readings indicated that the pencils used were either unsatisfactory, or mishandled.

Neutron Film

Badges Processed	100-B	100-D	100-F	100-H	200-W	300	Total	1951 To Date
Personnel	10	69	17	76	40	0	212	2,897
Special	0	0	0	0	11	0	11	217

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Radiological Sciences Department

Bioassay

Plutonium analysis:

Number of samples	- 477
Spikes and blanks	- 118
High readings	- 0.47, 0.43, 1.62 d/m
Resamples from last month	- all low

Fission product analysis:

Number of samples	- 477
Spikes and blanks	- 87
High readings	- none $\geq$ 10 c/m

Uranium analysis:

Job Description	END 4TH DAY OF EXPOSURE µg/liter Maximum	Average	Number Samples	END ONE DAY, NO EXPOSURE µg/liter Maximum	Average	Number Samples
Canning	7	3	15	4	2	17
Machining	42	13	14	9	5	9
Melt Plant	61	28	4	41	19	4
Material Handling			0			0
Inspection	6	3	11	6	3	7
305 Building	3	2	4	2	1	3
Coverage	10	4	7	11	6	4
Clerical	7	4	3	1	1	2
Special Services	4	3	3	7	5	3
Car Unloading	267	31	16	153	16	14

Urine samples of employees relatively free from possible uranium contamination were analyzed for comparative purposes. The results of these random samples were as follows:

	Maximum µg/liter	Average µg/liter	Number Samples
Random	1	1	12

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8

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Tritium analysis:

	Activity Density μc/cc x 10^3						
No. Samples	<2	2-5	5-10	10-20	20-35	35-65	>65
No.Samples-Operating Personnel	591	133	31	38	19	1	0
No.Personnel involved	102	29	11	6	6	1	0
No.Samples-Construction Personnel	280	4	4	7	0	0	0
No.Personnel involved	65	3	3	3	0	0	0

Thyroid Checks

All thyroid checks were below the warning level.

Hand Score Summary

There were 45,177 alpha and 59,927 beta hand scores reported. About 0.11% of the alpha and about 0.05% of the beta scores were high. Four high beta scores, two at 105-F and two at 105-H, were reported with no attempt to reduce. Where decontamination was attempted, it was successful.

4. Calibrations

	Number of Routine Calibrations		
Radium Calibrations	August	September	1951 to Date
Fixed Instruments			
Gamma	242	217	2,296
Portable Instruments			
Alpha	297	245	2,615
Beta	636	502	5,408
Gamma (radium)	1,276	990	10,529
X-ray	12	7	55
Neutron	1	3	20
Total	2,222	1,747	18,627
Personnel Meters			
Beta	946	698	7,224
Gamma (radium)	4,086	6,597	56,316
X-ray	3,876	6,150	36,859
Neutron	42	28	286
Total	8,950	13,473	100,685
Grand Total	11,414	15,437	121,608

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9

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Radiological Sciences Department

BIOPHYSICS SECTION

CONTROL UNIT

Regional Survey

Radioactive contamination from alpha emitters in drinking water supplies in the Richland, Benton City, and North Richland regions remained at levels comparable to those noted in the past. Maximum activity was found in the Benton City Water Company well where the average activity density was 24 dis/min/liter. The comparable activity density in Richland wells averaged from 8 to 15 dis/min/liter. Average uranium measurements indicated values on the order of 5 µg U/liter in Richland wells and 15 µg U/liter at Benton City. Samples of drinking water from Sacajawea Park and Patterson showed the activity density from alpha emitters to average 17 and 10 dis/min/liter, respectively.

Small increases were noted in the activity density from beta emitters in drinking water supplies from the Columbia River. Samples from Pasco and Kennewick showed the average activity density to be 3.5×10^{-7} and 1.3×10^{-7} µc/cc, respectively.

Comparable increases were noted in samples of various filtering media collected at the Pasco Filter Plant. Trace activity was noted in nearly all area drinking water supplies due to the low flow rate of the Columbia River.

An over-all decrease was observed in the mean activity from alpha emitters in the 300 Area wells; maximum contamination was noted in 300 Area Well #4 where the average activity density from alpha emitters was 350 dis/min/liter, which included an average of 150 µg U/liter.

A decrease in the average flow rate of the Columbia River from 1,270,000 gallons/second during August to 705,000 gallons/second during September caused an over-all increase in the activity density from gross beta emitters at all monitoring locations along the Columbia River. A sample collected near the 300 Area showed the activity density from total alpha emitters to be 18 dis/min/liter and a fluorophotometer analysis of 8 µg U/liter. The activity density from alpha emitters was less than 6 dis/min/liter at all other river monitoring locations.

Radioactive contamination from alpha and beta emitters in mud collected along the shore of the Columbia River remained at the low levels noted in the past.

The average daily emission of I^{131} at the 200 West Area increased from 3 curies per day during August to 7.8 curies per day during September. On a percentage basis, 0.6% of the dissolved iodine was admitted to the atmosphere; during August only 0.2% was emitted. Similar monitoring facilities were established at the 200 East Area during the month. Preliminary measurements indicated that

10

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an average of 45 curies were emitted daily from this facility. An average of 3.8 curies per day passed through the sand filter in the 200 East Area. Eighteen percent of the I^{131} involved in the 200 East dissolvers was admitted to the atmosphere.

Average radiation levels as measured by detachable chambers showed considerable fluctuation near the 200 Areas and remained on the order of background at the 100 Areas and at outlying stations. Small increases were noted at 9 out of 15 stations near the separation areas; maximum dosage rates were observed at the military camp PSN 330 where the current average was 3.5 mrep/24 hours as compared with a previous average of 2.1 mrep/24 hours.

Small increases were noted for the activity density from filterable beta emitters in the atmosphere at most monitoring stations during September. These increases tended to predominate at locations near the 200 East Area; maximum contamination was observed at building 2707-EA where the average activity density was 2.1×10^{-12} μc/cc. Monitoring at other locations in the 200 East Area showed average values ranging from 8.0×10^{-13} to 1.3×10^{-12} μc/cc. The activity density from alpha emitters in the atmosphere, as determined by direct counting of the filter, averaged on the order of 10^{-14} μc/cc near the operating areas.

The activity density from I^{131} in the atmosphere increased at almost all monitoring locations. The magnitude of this increase ranged from a factor of 2 to 5 when compared to August averages. Maximum concentrations were again observed at Tower #16 where the average during the month was 1.0×10^{-10} μc/cc. Results obtained from the analyses of 31 portable scrubber samples showed only one significant value; the activity density was 1.1×10^{-9} μc/cc in a sample collected about 150 feet east of the 200 East Area stack on September 12.

The number of radioactive particles in the atmosphere at locations on the Hanford Works project was not significantly different from August values. In general, average concentrations were on the order of 2×10^{-2} to 0.1 particles/meter^3 at locations near the operation areas, and on the order of 1.0 to 6.0×10^{-3} particles/meter^3 at perimeter locations. Particle concentrations decreased about three-fold in the residential areas near the plant with current averages on the order of 1 to 2×10^{-3} particles/meter^3. Decreases were also noted at remote locations where current averages were on the order of 1.3×10^{-3} particles/meter^3.

The activity density from I^{131} on vegetation decreased at locations in the immediate vicinity of the 200 West Area and increased at the 200 East Area and at most locations in the environs. The maximum deposition was observed in the southeast corner of the 200 East Area where the average activity density was 2.3×10^{-4} μc/g. Samples collected in the Tri-City Area, Prosser, McNary, and Ringold indicated trace I^{131} deposition on the order of 5 to 8×10^{-6} μc/g; negligible activity was detected in this region during August. Off-area

surveys conducted between Richland and Boise, Idaho, and Richland and Ellensburg indicated the activity density from I^{131} to average less than 3×10^{-6} μc/g at all sample locations.

Increases were noted in the activity density from gross beta emitters at the outlet side of each of the 107 effluent basins during the month of September. The average activity density ranged from 1.3 to 2.0 x 10-3 μc/cc at all basins. Uranium analyses of nearly 100 retention basin samples indicated an average of less than 2 μg U/liter with a maximum measurement of 14 μg U/liter at 107-D.

Uranium was detected in several samples taken from the laundry waste ditch in the 200 Areas. Eight samples of water averaged 6 μg U/liter with maximum readings of 16 μg U/liter; samples of mud averaged 7 μg U/g with a maximum of 14 μg U/g. One mud sample collected 600 feet from the inlet indicated the activity density from alpha emitters to be 78 dis/min/g. Eighteen samples collected from the 300 Area waste line showed the activity density from plutonium to average 63 dis/min/liter; one exceptionally high result indicated a value of 760 dis/min/liter.

Three hundred and fifty-three air samples were taken for tritium oxide determinations. No positive result was obtained from atmospheric samples. Results from samples of stack gas from 105-F and 105-D remained slightly positive; monthly averages at 100-F were 2.1×10^{-5} μc/cc, and 4.1×10^{-5} μc/cc at 100-D.

Analytical Control Laboratory

Routine analyses were carried out as follows:

Laboratory

Type Sample	September 1951	1951 to Date
Vegetation	1826	15054
Water	1693	17410
Solids	233	2761
Fluorophotometer	370	5096
Special Survey Analyses	30	274
Air Sample Analyses	751	3179
Total	4903	43774

Counting Room

Beta measurements (recounts included)	5611	47114
Alpha measurements (recounts included)	3642	32720
Control points (beta and alpha)	3128	21843
Decay curve points	4341	24946
Absorption curve points	122	2338
Total	16944	128961

Tests carried out on silica gel scrubbers used for collection of moisture from air for determination of tritium oxide content have showed these scrubbers to

12

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be durable and to have about 60% efficiency. Distillation equipment has been set up so that the analysis of such scrubbers in the laboratory now requires about 30 to 40 minutes.

Synoptic Meteorology

Forecasts	September 1951 Number Made	Percent Reliability
Production	89	86.3
24-hour	60	89.1
Special	15	67.7

Temperatures averaged 66.8°F or 2.4 degrees above normal. The highest was 97° on the 18th. The lowest was 39° on the 26th.

Precipitation totaled 0.10 inch, all but 0.01 inch of which occurred during the final two days. Normal precipitation for September is 0.34 inch.

Smoke from forest fires, mostly in the Olympic Mountains, restricted visibility from the 14th to the 23rd.

Data Analysis

Activities included the analysis of air data obtained from the Arco background study, data from the river dilution study, particle data, and results from the geology program.

ENVIRONMENTAL HAZARDS AND GENERAL STUDIES UNIT

1. Experimental Meteorology

Trajectories of hypothetical emission clouds leaving the Hanford Works area and summaries of these trajectories in terms of areas covered by these clouds within 400 miles of the meteorology tower were continued.

The network of meteorological field stations operated satisfactorily. An analysis of the difficulties encountered in the construction of streamlines of the air flow during conditions of light winds was begun. It has become clear already that much of the variability in the wind vector from station to station is real and can be attributed to the development of slope winds during conditions of weak pressure gradients. Since the orographic influences are important the construction of a three-dimensional model of the area has been planned.

One field test (#12) in the study of diffusion on a 20 mile scale was conducted in September, during stable conditions.

Preliminary study of the wind profile during the strong winds of September 7, 1951, revealed a variation of the meteorological parameters with the length of time used in the averaging process. The study of this variation is being continued.

2. Geology-Hydrology

Ground water contamination beneath the 200 Areas remained at the values observed recently. Well 361-T-19, located 12 feet north of the reverse well 241-T-361A, was completed to the water table at a depth of 315 feet and was found to be contaminated.

The pattern of contamination in the ground water beneath the 300 Area returned to the normal pre-flood stage. The maximum uranium contamination is now in the vicinity of well 303-10.

Well 224-T-9 is being drilled at a location on the extreme south side of the second cycle tile field to prepare a sampling point for checking on contamination from the second cycle and 224-T cribs. The well is not finished but sediment samples have been found to be contaminated from a depth of 60 feet on down to 88 feet, the present depth of the well. This indicates a spread of contamination at least to the area beneath the road south of the crib.

3. Soil Science

Soil samples obtained at five-foot intervals from Well 303-10 provided a profile extending from the surface to a depth of 100 feet. The carbonate content of these samples (expressed as percent calcium carbonate) was less than 1% throughout the entire profile except for the 90-95 foot levels which contained 1.8%.

Twenty-six water samples obtained in the vicinity of the contaminated ground water areas were analyzed for nitrate. The nitrate concentration was confirmed to be significantly higher in all of the contaminated wells.

The adsorption of plutonium as a function of time in a typical soil from 219-S-2 Well was studied. A sample taken after only five minutes indicated 85% removal, after 1 hour 90% was removed, and after 48 hours 99.7% was removed.

The soil columns which have been leached for several weeks with plutonium solutions at critical pH values have now received approximately 1500 µg of Pu. Effluent from the column at pH 4 still has an activity of less than 1 c/m/ml, but the column at pH 10 has reached breakthrough.

Salts known to be present in process effluent wastes were used to determine the effect of large salt concentrations on the adsorption of cesium in soils.

14

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The adsorption of cesium was reduced from 98.8% (no salt present) to about 95% where sodium sulfate, sodium nitrate, and sodium phosphate were present in amounts of 27 g Na per liter. This 4% reduction in adsorption of cesium was presumably due to the presence of high concentrations of sodium ion. No significant reduction due to the presence of sodium carbonate was noted.

4. Industrial Hygiene

Preliminary test runs have been started on the investigation of filtering efficiencies of various media when used in atmospheres of uranium fume and dust. The immediate need for this information is in the interpretation of filter sampling carried out in the 314 Building study.

A study is being made of possibly excessive radiant heat exposures in the canning and dipping section of the 313 Building.

5. Methods

The electrodeposition procedure for plutonium was successfully tested with a square plating area 6 mm x 6 mm, which would improve the efficiency of nuclear track counting on film. The series of samples analyzed with amounts of La^{+3} ranging from 29 mg to 290 mg was read on NTA film. Very uniform results on each group of samples indicated carrying of 0.05-0.06 d/m with 29 mg La^{+3} and 0.12-0.16 d/m with 72 mg or greater. This defines the purification requirements for lanthanum in TTA analysis.

The I^{131} monitor involving the "Thyrode" GM Counter has been operated on the 200 West Area stack during the month. Agreement between the integrated record from this unit and analyses of scrubber solution from the same period was generally within 10-20%. Scrubber improvements were effected by modifying the lead-in pipe, using an all glass cell, and reducing the anti-foaming agent, octyl alcohol, which caused I^{131} to hold up in the cell. Efficiency was about 90% with a background between 90 and 130 counts per minute.

Sampling equipment on the river boat was improved mechanically. Preliminary studies on channelling and rate of flow in the river were begun by utilizing the time-scale built into the water by the progressive change in decay curve with time.

Precision sampling of oil fog for the meteorology program was developed. The improved system used small columns packed with fiberglass. All outside contamination could be removed before the internal collection was recovered, thus avoiding contamination errors inherent in earlier sampling techniques.

Yields of 80-85% were obtained on electroplating of ruthenium metal with a procedure involving a 1N H_2SO_4 electrolyte with hydroxylamine hydrochloride added, the anode and cathode separated by an alundum cup, and plating for 16-20 hours. An electroplating procedure reported in KAPL-348 was tested with erratic yields.

15

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6. Radiochemical Standards

A new vacuum system for mixing the gases for the internal counter before introduction into the tube was assembled. With this system a value of 97% of the calibration from the mica window counter was obtained with $C^{14}O_2$ before end corrections. Initial experiments with tritium oxide solutions generating hydrogen by the action of calcium gave yields of 50-60%. Runs made by generating hydrogen by the action of water on hot zinc gave values of 77-84% of the theoretical. One run using magnesium in place of the zinc and attempting to get complete reaction of the water sample gave a value of 94% of the theoretical. Two factors appeared to be involved in previous low results: (1) the value of the spike calibration has been corrected to a 12.4 year half-live, and (2) the reaction chosen for production of the hydrogen appeared to affect the hydrogen-tritium ratio in the gas. Present work is aimed at complete reaction of a sample of water so that all of the hydrogen or tritium is in the gas phase, and variations in reaction rate will be inconsequential.

An adapter for the PC-2B hemispherical proportional chamber was designed and ordered to permit backscatter measurements. The coincidence counter was set up to permit absolute source calibration for isotopes with simple decay schemes.

RADIATION MEASUREMENTS

1. Physics

Preparation of plutonium metal causes potential exposure to fairly high energy gamma radiation and to 17 Kev X-rays. With ordinary film badges it is impossible to distinguish between the effects of the X-rays and of beta radiation from other sources. Badges have been prepared with an extra window covered with 1 mil gold foil which will absorb essentially all of the 17 Kev X-radiation and still allow beta radiation to enter.

An experiment was performed using neutron sensitive films in a near downcomer room to determine neutron fluxes there. High background gamma radiation limited exposures, but sufficient data were obtained to indicate no fast flux as great as 80 neutrons/cm^2/sec. nor (by Cd difference) any slow neutron flux as great as 1800 nv. The high readings of Victoreen r meters in such locations would require a flux of 2000 neutrons/cm^2/sec., if due only to fast neutrons.

The study of neutron scattering was extended to cover various configurations between the source, detector and scatterer.

Source PB-182 was rechecked with the indium foils and a result consistent with previous values obtained. The low value quoted last month must have been in error.

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2. Instrument Development

The uniformity of photocathode sensitivity was investigated in seven photomultipliers using scintillations produced by alpha particles impinging on a zinc sulfide screen and collimating the emitted light. All tubes had one distinct maximum and one distinct minimum of sensitivity. Minimum sensitivity ranged from 0 to 10% of maximum and the maxima for different tubes varied by as much as a factor of 3. There seems to be a correlation between visibly dark spots on the photocathode and low sensitivity.

A working model of an instrument for measuring the distributions in time of counting pulses was completed during the month and trial runs made on several types of tubes. The instrument gave good results so far and should be useful for routine checking of counting room sets for deviations missed by conventional statistical tests.

Some further detail work is being done on counters for tritium as surface and airborne contamination. The characteristics of a limiter for use with NICC Model 162 scalers were investigated. The three-diode system yielded results comparable with those obtained from a Tracerlab pulse amplifier and scaler. Statistical and source-additivity tests indicated that the "Pete" system operated reliably with such a limiter.

Further hydrogen counter investigations showed that there is no sensible difference between the counting efficiency of a hydrogen filled counter-quench circuit-scaler system and a conventional G.M. counter-scaler. This was shown by emptying one commercial counter and refilling it with hydrogen at atmospheric pressure and filling one hydrogen counter shell with Neon amyl acetate. Both gave nearly identical results regardless of filling. The quench circuit itself has been reduced to the simplest workable form and now requires no adjustment by operators.

Radiological Sciences Department

BIOLOGY SECTION

AQUATIC BIOLOGY UNIT

Biological Chains

1. Algae-Trout Relationships

The rearing of adult trout in 5% pile effluent water, fed active algae continued with no indication of harmful effect from either effluent or algae.

2. Retention Basin Algae Control

The west side of the 107-F Retention Basin was prepared for application of anti-fouling paint.

Ecology

1. Survey of the Columbia River

The exceptionally low level of the river resulted in ideal hydrographic conditions for shore collections, and in increased concentration of pile effluent in the river. This coupled with peak water temperatures for the year resulted in comparatively high activity densities in all organisms. The following average values were observed at the Hanford station where highest activity densities normally occur: plankton, 1.6×10^{-2} μc/g; algae, 2.9×10^{-3} μc/g; caddis fly larvae, 9.6×10^{-3} μc/g, a new peak value nearly twice that observed last month or in September, 1950; small fish, 3.4 μc/g, also a record high. For large fish, a maximum of 9.5×10^{-3} μc/g was found in the scales of a chiselmouth, and was associated with 1.4×10^{-3} μc/g in the muscle, an increase of approximately 3-fold over last month's maximum.

Effluent Monitoring

1. Effect of Pile Effluent Water on Rainbow Trout

Monitoring of the pile area effluent water with juvenile rainbow trout continued without unusual effect. Bacterial disease, favored by the high temperature of the river water, necessitated repeated prophylaxes. Fish in 5% and 10% area effluent experienced retarded growth rate and increased mortality, due probably to an aggravation of disease by the elevated temperature, since it was not significant in 10% cooled area or pile effluent.

The group in 2% cooled pile effluent suffered such a high mortality from disease and associated treatments, that it was withdrawn from the test.

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Radiological Sciences Department DECLASSIFIED

BIOLOGICAL SERVICES UNIT

Biological Monitoring

1. Waterfowl

Monitoring of tissue activity densities in waterfowl at Hanford has been discontinued, as a result of loss of the pekin duck colony by truancy.

2. Upland Wildlife

An abrupt increase in thyroid activity densities of rabbits taken at the location east of 200-East area was noted. The maximum value detected was 9.0×10^{-2} $\mu c/g$. Thyroid activity densities of specimens from various localities are tabulated below:

Locality	Specimen	Maximum ($\mu c/g$)	Average ($\mu c/g$)
Prosser Barricade	Jack rabbit (3)	0.010	0.009
200-West	Jack rabbit (6)	0.012	0.008
200-East	Jack rabbit (5)	0.089	0.062
On-site	R-N Pheasant (1)	0.148	---

Two bats taken at 100-F Area had activity densities in bone exceeding the chronic MPC of radiophosphorus in man, with a maximum value of 1.6×10^{-3} $\mu c/g$.

Clinical Laboratory

Seven hundred and fifty-one routine determinations.

Microscopy

Routine histological preparations.

Radiochemistry Laboratory

1. Radioactivity in Carcasses

All samples received from the University of Oregon Medical School were analyzed in duplicate by the chemical method. The physical method of analysis was applied to seven cadaver aliquots and yielded reliable results.

2. Analytical Services

Analytical services to other groups included the preparation of 32 radioisotope solutions for animal and plant feeding, and the analysis of approximately 2,000 routine samples.

19

1217256

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Radiological Sciences Department

3. Analytical Techniques

Backscatter correction factor checks were made for I^{131} on mica-window sets for Al, stainless steel, and "cover-glass" glass. Values 15-20% lower than those now existing were observed. This would raise all previous calibrations of iodine a like amount. It was also found that on all shelves (except #1) the factor tended to remain ~ 1.0. This is being verified by Radiochemical Standards of the Biophysics Section.

A comparison of Oak Ridge's method for I^{131} calibration and the local method indicated a 2-5% difference. Backscatter correction factors previously employed were used for calculations.

METABOLISM UNIT

Animal Metabolism

1. Low Level Chronic Plutonium Absorption in the Rat

Routine daily feedings of plutonium continued.

2. Percutaneous Absorption of Plutonium

Preliminary experiments involving the application of acidic plutonium (IV) nitrate solutions to the skin of rats and mice were performed. Blood samples taken at intervals following the application of plutonium to the skin contained highest concentrations after 2-3 hours. It was found that plutonium applied immediately after shaving the skin was more extensively absorbed than when a 24-hour period elapsed between shaving and plutonium application.

3. Therapy for Internally Deposited Plutonium

No report.

4. Distribution and Retention of Tritium in the Rat. I. Serial Sacrifice

No result.

5. Distribution and Retention of Tritium in the Rat. II. Compound Separation

No result.

20

DECLASSIFIED [redacted]

1217257

6. Distribution and Retention of Tritium in the Rat. III. Effect of Growth

By using young and old rats on restricted and ad lib diets, the effects of tissue growth on tritium binding from tritiated water were studied. In the main, factors that decreased the water turnover rate (age and restricted diet) increased the tissue binding. The reverse was the case in fat, skin, muscle, and bone tissues that characteristically bind tritium slowly, but retain it tonaciously. In fat, immature rats (ad lib diet) bound twice as much tritium as did immature rats (restricted diet), and three times as much as did mature rats (ad lib diet), - when results were quoted as activity density in tissue per unit activity density in body water, after the i.p. injection of tritiated water.

7. Percutaneous Absorption of Tritium Oxide

No result.

8. Percutaneous Absorption of Tritium Gas

No result.

Microbiology

1. Determination of RBE's by Microbiological Methods

An earlier observation indicated a possible difference in the biological effectiveness of S^{35} compared to H^3 and P^{32}. At that time it was thought that this apparent difference might be due to growth inhibition caused by the sulfate carrier present with the S^{35}. Tests run with graded additions of Na_2SO_4 to minimal medium show that sulfate inhibition is not a significant factor.

2. Destruction of Metabolites by Radiation

No result.

3. Absorption and Metabolism of Tritium Oxide by Bacteria

No result.

Plant Nutrition

1. Absorption and Translocation of Fission Product and Pile Effluent Radioactivities

Red kidney bean plants grown in a standard four salt nutrient solution were

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shown to concentrate iodine to a maximum extent of about 30 times the concentration present in the nutrient solution. This concentration was observed at an iodine level of 1.0 ppm in the nutrient solution. The uptake of iodine at pH 6.0 was generally proportional to the concentration of iodine in the nutrient solution from 0.001 to 50 ppm. These results were obtained with a 3-day observation period. Concentrations of iodine in excess of 1.0 ppm are toxic, and in longer experiments would result in death or severe impairment of the functions of the plant. The uptake of iodine was about 4 times as high at pH 4.0 as at 7.0. Accumulation of iodine by fruit was studied in the red kidney bean, tomato, and Russian thistle. The bean was found to have 20% as much iodine in the fruit as in the leaves; tomato, and Russian thistle only 10%.

2. I^{131} Vapor Absorption and Translocation

A single leaf of a tomato plant was exposed to I^{131} vapor for 17 hours, and the amount present in various plant parts at the end of this period determined. Of the total I^{131} bound in the plant, 85.6% was in the exposed leaf; 14.1% was translocated to the roots; 0.15% to the stems; 0.08% to the leaves below the exposed leaf; and 0.07% to the leaves and stems above the exposed leaf.

3. Absorption and Metabolism of Tritium Oxide by Vascular Plants

Bean plants grown in a nutrient solution containing 110 μc tritium oxide/ml were found to contain, after 72 hours of exposure, the following concentrations of tissue-bound tritium/g of dry tissue: heart leaves, 1.2 μc; stems, 7.0 μc/; trifoliate leaves, 8.2 μc.

Plant Metabolism

1. Radiation Damage to Plants. I. Algae

Chlorella pyrenoidosa was cultured in the presence of various levels of P^{32}, and with various ratios of active to inactive phosphorus under standardized environmental conditions. The minimum concentration of P^{32} required to cause a significant reduction in the number of cells present was found to vary with the ratio of active to inactive phosphorus.

2. Metabolism of Tritium Oxide by Algae

No result.

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Radiological Sciences Department [redacted] DECLASSIFIED

TOXICOLOGY UNIT

Experimental Animal Farm (Toxicology of I^{131})

1. Low Level Chronic Effects

The new groups initiated on August 30, 1951 demonstrated slightly lower rates of thyroidal uptake than some groups previously fed. The ratio of in situ thyroidal I^{131} to the daily feeding increment varied from 2 to 5, with an average of 3. The rate of uptake indicated that the supplement of 0.5 mg of I^{127} being administered every 2 weeks is not causing a significant sparing effect.

Ewe lamb weights of various groups were compared at 5 months of age. There was no significant difference between the group receiving 0.15 μc/day and the control group.

The remaining ewe that received 1800 μc I^{131} daily for 420 days was prostrate for eight days during the month.

2. Thyroid Regeneration

The ewes that were on a regimen of 240 μc/day for 450 days are now essentially subjects for study of thyroid regeneration and general recovery. Three of the seven were bred at the Off-Project Control Station.

3. Prophylaxes by Inert Iodine and Dessicated Thyroid

The 9 animals of this group of 18 animals that were fed 480 μc I^{131} daily have now reached background levels of radiation. None of the animals involved have received radioiodine since August 8, 1951. At 25 days, following the initiation of daily feeding of I^{131}, external monitoring revealed considerable variation in thyroidal uptake. The ratio of measurable radioactivity was 20:9:1 in those receiving no augmentation, those to which one grain/day of dessicated thyroid was administered, and those receiving 5 mg of I^{127}/day; respectively. The PBI^{131} ratios for the same groups were 20:17:1 at the same stage. The ratio of inorganic radioiodine to PBI^{131} during the 25th to 35th days of feeding is 6 in the 3 sheep receiving I^{127} augmentation; 0.5 in the 3 receiving dessicated thyroid; and 1 in the 3 having no diet augmentation.

4. Effect on Gonadal Function

Semen samples were collected from control rams, and aliquots examined for initial motility, one-hour motility, concentration, and the semen reducing ability on methylene blue and resazurin. A "dead-alive" stain and technique were applied in order to determine the percent of live sperm per service.

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23

1217260

Radiological Sciences Department

Physiology

1. Toxicology of Active Particles

No progress other than breeding experimental animals.

2. Plutonium Toxicology

No result.

3. Pulmonary Absorption of Tritium

No result.

DECLASSIFIED [redacted]

24

FINANCIAL DEPARTMENT
MONTHLY REPORT

SEPTEMBER, 1951

W. W. Smith relieved F. E. Baker as Manager - Finance at the beginning of September. During the month of August, F. E. Baker performed the functions of Manager - Finance in addition to his functions as Manager, Utilities and General Services.

The prime contract with the Atomic Energy Commission (W-31-109 Eng.-52) was amended as of October 1, 1951 to reflect a reduction of $45,000,000 in the amount obligated by the Commission under the contract. The reduction resulted from previous amendments to the contract which provided that effective October 1, 1951 General Electric Company shall not construct, alter, or repair public buildings or public works but shall perform only Architect-Engineer-Management services in respect of such construction, alteration or repair.

Meetings were held during September with representatives of the Atomic Energy Commission and Atkinson-Jones to establish changes in accounting procedures to be made effective October 1, 1951 as a result of the assignment of construction subcontracts to the Atomic Energy Commission. The accounting and audit functions to be performed by General Electric Company on construction work, as Architect-Engineer-Management functions, will be substantially the same after October 1, 1951 as before, except that actual disbursements to construction contractors of amounts approved by General Electric Company will be made by the Atomic Energy Commission.

A refund of $5,600,576 of amounts formerly paid by the Government for administrative and general expenses ($200,000 per month) was made by the General Office at Schenectady. The refund check was payable to General Electric Company, Nucleonics Division, and was deposited in the contract bank account in lieu of cash advances in that amount which otherwise would have been made by the Commission. The amount of the refund was computed as follows:

Excess of payments by the Government covering the period May 15, 1946 to December 31, 1949 over the sum of the audited costs for the period as determined by Peat, Marwick, Mitchell & Company, less $3,000,000	$3 500 576
Partial refund covering the period January 1, 1950 to December 31, 1950	1 400 000
Difference between the $200,000 per month paid by the Government and the $100,000 per month as provided by Supplemental Agreement No. 18 to the prime contract, for the period January 1, 1951 to July 31, 1951	700 000
	$5 600 576

A summary of total cash disbursements and cash receipts (excluding advances from AEC and the receipt of $5,600,576 described in the preceding paragraph) for the months of September and August, 1951 is shown below:

Disbursements	September	August
Payments to Subcontractors	$ 5 035 278	$ 5 739 046
Material and Freight - GE	2 862 910	2 481 781
Payrolls - GE (Net)	2 440 299	2 885 305
Payroll Tax	488 311	665 431
General and Administrative Expenses	-0-	200 000
U. S. Savings Bonds	144 563	190 525
Other	452 826	329 877
Total	11 424 187	12 491 965
Receipts		
Rents	134 018	145 644
Hospital	37 996	57 041
Miscellaneous Accounts Receivable	9 191	10 831
Telephone	19 570	16 158
Bus Fares	9 123	10 196
Refunds from Vendors	3 174	4 447
Scrap Sales	3 182	3 934
Sales to AEC Cost-Type Contractors	13 535	380 249
Other	9 530	6 972
Income from Special Funds	101 461	-0-
Total	340 780	635 472
Net Disbursements	$11 083 407	$11 856 493

Advances from AEC were increased from $5,500,000 as of August 31, 1951 to $6,500,000 as of September 30, 1951 and may be summarized as follows:

	September	August
Cash in Bank - Contract Accounts	$ 5 567 169	$ 4 682 946
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	482 831	367 054
Advances to Subcontractors	300 000	300 000
Travel Advance Funds	100 000	100 000
Total	$ 6 500 000	$ 5 500 000

A summary of personnel changes in the Financial Department during the month of September is shown below:

Personnel at August 31, 1951	457
Acquisitions	15
Terminations and transfers out	(21)
Personnel at September 30, 1951	451

The monthly reports of the four sections of the Financial Department, as listed below, are shown on the following pages.

General Accounting Section
Manufacturing Accounting Section
Engineering Accounting Section
Community Accounting Section

GENERAL ACCOUNTING SECTION
MONTHLY REPORT

September, 1951

The Agreement between the Hanford Guards Union - Local 21 of the International Guards Union of America - and General Electric Company was executed on August 3, 1951. In accordance with this agreement, which provides for check-off of Union dues, the Union submitted payroll deduction authorizations covering check-off of Union dues for 128 employee members. The initial deduction of dues will be made from salary checks covering the week ended September 30, 1951.

To consolidate three reports (two prepared monthly and one weekly) on absenteeism now being issued by Payroll, a new absentee report form has been designed and will be issued on a monthly basis effective with the report covering absenteeism for the month of September, 1951.

During September, approximately 115 Designers and Draftsmen received a salary rate adjustment retroactive to April 2, 1951. The increased rates were paid on a current basis with checks covering the week ended September 23, 1951. The retroactive portion will be included in checks covering the week ended September 30, 1951.

In connection with the current U. S. Savings Bond Drive, addressographed authorization forms for payroll deductions and booklets explaining the G. E. Savings and Stock Bonus Plan were delivered to departments for distribution to employees who are not now participating in the plan.

Draft of Organization and Policy Guide covering "Absences" was reviewed by Payroll in September. Drafts of Organization and Policy Guides covering "Continuity-of-Service," "Pension Plan," "Company Benefits to Employees Entering the Armed Forces," "Employee Sales Plan," and the "G. E. Employees Savings and Stock Bonus Plan," are currently being reviewed at September 30, 1951.

Plans for the recentralization of Accounts Payable activities for Manufacturing and Community Real Estate and General Services Departments in General Accounting Accounts Payable Unit were completed, and the transfer was scheduled for October 1, 1951.

Plans were also completed to transfer as of October 1, 1951, the Cost Accounting for Electrical and Transportation Sections from Manufacturing Accounting to General Accounting. This is in line with recent organizational changes establishing the Utilities and General Services Department.

Plant Accounting procedures were reviewed, and as a result some reductions in clerical work will result. A study is currently in progress concerning the advisability of adopting IBM for PlantAccounting.

1217255

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	8 885	2 031	6 854
Additions and transfers in	205	20	185
Removals and transfers out	(213)	(22)	(191)
Transfers from weekly to monthly payroll	-0-	28	(28)
Transfers from monthly to weekly payroll	-0-	-0-	-0-
Employees on payroll at end of month	8 877	2 057	6 820

Number of Employees	September	August
Bargaining group - HAMTC	3 329	3 347
- Building Services	72	67
- Two Platoon Firemen	56	55
- Hanford Guards	612	603
Weekly - Non-Bargaining	2 807	2 837
Executive, Administrative and Operating	1 436	1 409
Professional	535	538
Other monthly	30	29
Total	8 877	8 885

Number of Employees		
Engineering	1 925	1 944
Manufacturing	2 884	2 744
Utilities and General Services	2 201	2 190
Community	245	256
Real Estate and Services	361	365
Financial	451	457
Employee and Public Relations	115	114
Radiological Sciences	353	464
Medical Services	265	267
General	18	16
Law	14	13
Accountability	19	18
Technical Personnel	26	37
Total	8 877	8 885

Overtime Payments		
Weekly paid employees	$ 239 936	$ 190 480
Monthly paid employees	59 898(1)	60 731(2)
Total	$ 299 834	$ 251 211

Number of Changes in Salary Rates and Job Classifications	1 579	1 689

Gross Amount of Payroll		
Engineering	$ 867 185	$ 772 777
Manufacturing	1 442 772	1 156 014
Utilities and General Services	908 598	747 256
Community Real Estate and Services	248 255	222 996
Other	522 907	495 044
Total	$3 989 717(3)	$3 394 087(4)

(1) Payments cover period September 1 through September 30, 1951, except in the case of Patrolmen in the Plant Security and Services Section of the Utilities and General Services Department.

(2) Payments cover period August 1 through August 31, 1951, except in the case of Patrolmen in the Plant Security and Services Section of the Utilities and General Services Department.

(3) Includes payments for five-week period ended September 23, 1951 in the case of weekly paid employees.

(4) Includes payments for the four-week period ended August 19, 1951 in the case of weekly paid employees.

1217256

General Accounting Section

Annual Going Rate of Payroll	September	August
Base	$38 829 899	$38 612 935
Overtime	3 329 509	3 391 973
Isolation Pay	1 264 002	1 224 579
Shift Differential	492 442	490 705
Other	53 533	49 286
Total	$43 969 385	$43 769 478

Average Hourly Base Rates		
Bargaining group - HAMTC	$2.017	$2.002
- Building Services	1.577	1.579
- Two Platoon Firemen	1.871	1.877
- Hanford Guards	1.739	1.744
Weekly - Non-Bargaining	1.692	1.674
Executive, Administrative and Operating	2.938	2.934
Professional	2.939	2.955
Other Monthly	2.358	2.394
Total	$2.096	$2.083

	September			August		
Average Earnings Rate Per Hour(1)	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	$1.802	$2.959	$2.235	$1.772	$2.975	$2.209
Manufacturing	2.220	3.000	2.354	2.213	3.019	2.347
Utilities & General Services	1.916	2.712	2.016	1.912	2.701	2.010
Community Real Estate & Services	1.973	2.437	2.116	1.934	2.449	2.088
Other	1.716	3.073	1.989	1.727	3.016	1.994
Total	$1.980	$2.901	$2.179	$1.963	$2.903	$2.164

(1) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, suggestion awards, etc.

% Absenteeism	September	August
Weekly - Men	2.16	2.26
Weekly - Women	3.47	3.82
Total Weekly	2.51	2.68
Monthly	1.24	1.17
Grand Total	2.27	2.35

Employee Benefit Plans		
Pension Plan	September	August
Number participating at beginning of month	6 381	6 401
New participants and transfers in	76	56
Removals and transfers out	(57)	(76)
Number participating at end of month	6 400	6 381
% of eligible employees participating	94.5%	94.6%

1217267

Employee Benefit Plans (continued)

Pension Plan (continued)

	September	Total to Date
Employees Retired		
Number	2	175-a)
Aggregate Annual Pensions Including Supplemental Payments	$304	$40 158-b)
Amount contributed by employees retired	$760	$30 643

(a-Includes 6 employees who died after reaching optional retirement age but before actual retirement. Lump sum settlements of death benefits were paid to beneficiaries in these cases.

(b-Amount before commutation of pensions in those cases of employees who received lump sum settlement.

Insurance Plan (1)

Personal Coverage	September	August
Number participating at beginning of month	8 839	8 729
New participants and transfers in	168	252
Cancellations	(4)	(6)
Removals and transfers out	(159)	(136)
Number participating at end of month	8 844	8 839
% of eligible employees participating	98.0%	97.9%
Dependent Coverage		
Number participating at beginning of month	5 277	5 287
Additions and transfers in	114	55
Cancellations	(2)	(7)
Removals and transfers out	(57)	(58)
Number participating at end of month	5 332	5 277

Claims - Disability Benefits (2)

Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	100	139
Daily Hospital Expense Benefits	110	180
Special Hospital Services	135	202
Surgical Operations Benefits	88	157
Dependent Benefits		
Daily Hospital Expense Benefits	145	225
Special Hospital Services	194	286
Surgical Operations Benefits	167	218
Amount of claims paid by insurance company:		
Employee Benefits	$21 996	$39 959
Dependent Benefits	23 421	27 022
Total	$45 417	$66 981

Claims - Death Benefits (3)	September	Total to Date
Number	1	67
Amount	$7 000	$356 812

(1) The new Insurance Plan was made effective on December 1, 1950.
(2) Statistics cover only claims paid and not all claims incurred during the month.
(3) Total to date includes all claims under the old and new Insurance Plans and two deaths resulting from accidents.

1217263

Employee Benefit Plans (continued)

Group Life Insurance

The Group Life Insurance Plan was discontinued November 30, 1950. As of September 30, 1951, 7 employees who are absent with continuous service are still participating in the Group Life Insurance Plan. They were not actively at work on December 1, 1950, and therefore were not eligible to participate in the new Insurance Plan. However, they will become eligible upon their return to work.

Group Disability Insurance

The Group Disability Insurance Plan was discontinued November 30, 1949 for all employees actively at work. However, one employee who has been absent from work since September 15, 1949, is still insured under the Group Disability Insurance Plan.

Group Health Insurance

The Group Health Insurance Plan was made effective December 1, 1949 and was discontinued on November 30, 1950. As of September 30, 1951, one employee who is absent with continuous service is still participating in the Group Health Insurance Plan. He was not actively at work on December 1, 1950, and therefore was not eligible to participate in the new Insurance Plan. However, he will become eligible upon his return to work. During September, 6 checks in payment of benefits of $400 on 4 Group Health Insurance claims were received from Metropolitan Life Insurance Company.

Vacation Plan

Number of employees granted permission to defer one week of their 1951 vacation to 1952

	September			Total to Date			
	Weekly	Monthly	Total	Weekly	Monthly	Total	
Engineering	5	8	13	28	52	80	
Manufacturing	5	3	8	118	60	178	-a)
Utilities and General Services	4	3	7	82	30	112	
Community Real Estate and Services	2	2	4	30	17	47	
Financial	7	1	8	13	3	16	
Employee and Public Relations	1	2	3	2	3	5	
Radiological Sciences	-0-	1	1	1	1	2	
Medical	1	-0-	1	7	-0-	7	
General	-0-	-0-	-0-	-0-	3	3	
Total	25	20	45	281	169	450	

(a- Total to date reduced by one cancellation.

1217269

Employee Benefit Plans (continued)

U. S. Savings Bonds	Engineering	Mfg.	Utilities and General Services	Community Real Estate and Services	Other	Total
Number participating at beginning of month	736	1 203	828	240	619	3 626
New authorizations	27	32	24	3	25	111
Voluntary cancellations	(7)	(17)	(14)	(1)	(8)	(47)
Removals and transfers out	(11)	(8)	(10)	(1)	(31)	(61)
Transfers in	-0-	20	7	-0-	2	29
Number participating at end of month	745	1 230	835	241	607	3 658
Percentage of Participation						
G. E. Employees Savings and Stock Bonus Plan	34.6%	37.3%	31.9%	35.3%	42.6%	36.0%
G. E. Savings Plan	7.3%	11.4%	10.1%	9.4%	10.5%	9.9%
Both Plans	38.7%	42.6%	37.9%	39.8%	48.1%	41.2%
Bonds issued						
Maturity value	$ 41 700	$ 76 225	$ 48 050	$ 12 725	$ 25 800	$ 204 500
Number	737	1 359	889	236	475	3 696
Refunds issued	14	19	18	5	18	74
Revisions in authorizations	12	10	6	-0-	8	36
Annual going rate of deductions						
G. E. Employees Savings and Stock Bonus Plan	$296 761	$523 112	$319 336	$ 86 045	$188 449	$1 413 703
G. E. Savings Plan	70 218	185 315	109 256	31 121	46 086	441 996
Total	$366 979	$708 427	$428 592	$117 166	$234 535	$1 855 699

Annuity Certificates (For duPont Service)	September	Total to Date
Number issued	3	83

Suggestion Awards		
Number of awards	56	1 138
Total amount of awards	$720	$18 560

Employee Sales Plan	September		
	Major Appliances	Traffic Appliances	Total
Certificates issued	50	382	432
Certificates voided	5	12	17

Salary Checks Deposited	September		August	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle-First National Bank	717	833	688	822
North Richland Area Office - Seattle-First National Bank	8	8	8	8
Richland Branch - National Bank of Commerce	317	238	314	228
Out of state banks (Schenectady staff)	-	2	-	3
Total	1 042*	1 081	1 010**	1 061

*Week ended 9-16-51
**Week ended 8-19-51

Special Absence Allowance Requests	September	August
Number submitted to Pension Board	2	6

Absenteeism (Weekly Paid Employees)	1951	1950
January 1 to September 23	2.83%	2.26%

PERSONNEL AND ORGANIZATION

Number of Employees	September	August
On Payroll at beginning of month	245	231
Removals and transfers out	(12)	(10)
Additions and transfers in	9	24
Number at end of month	242	245
Net increase (or decrease) during month	(3)	14
% of terminations and transfers out	4.9%	4.3%
% of absenteeism	3.18%	3.42%

Changes by unit in number of Accounting Section employees during September, 1951 were as follows:

	Name
General: No Change	
One transfer from Plant Accounting	Frances R. Gay
One transfer to Financial - General	Sue C. Curtis
Accounts Payable: No Change	
Cost: Decrease of one employee	
One termination	Dorothy J. Toppin
General Accounts: No Change	
Plant Accounting: Decrease of one employee	
One transfer to Accounting - General	Frances R. Gay
Weekly Payroll: Increase of one employee	
Two new hires	Betty S. Erhard
	Barbara N. Heiser
Two returns from illness absence	V. B. Larson
	Faye D. Russ
One return from leave of absence	Lois B. Stroup
One illness removal	Mary M. Reel
One transfer to Engineering Accounting	Florence M. Beers
Two terminations	Vivian R. Keller
	Hazel W. Pollard
Monthly Payroll: No Change	
One new hire	Joyce H. Miller
One illness removal	Susan C. Loveless
Special Assignment: Decrease of one employee	
One termination	Dea Ann N. Strand
Budgets: No change	
One transfer from Financial - General	D. H. Burkhardt
One termination	Dorothy J. Glendinning
Internal Audit: Increase of one employee	
One new hire	A. F. Tait
Rotational Training Program: Decrease of two employees	
One transfer to Financial - General	George Hessney
One termination	Stephen C. Watson

121271

PERSONNEL AND ORGANIZATION (continued)

Medical Accounting: No Change
One new hire — Marilyn E. Kolbeson
One termination — Salvator Hunter

Injuries	September	August
Major	-0-	-0-
Sub-Major	-0-	-0-
Minor	2	-0-

Number of Accounting Section employees as of September 30, 1951 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	3	6	9
Accounts Payable	19	1	20
Cost	11	1	12
General Accounting	16	1	17
Plant Accounting	25	2	27
Weekly Payroll	69	6	75
Monthly Payroll	18	2	20
Special Assignment	20	2	22
Budgets	2	1	3
Internal Audit	3	8	11
Rotational Training Program	15	-0-	15
Medical Accounting	8	3	11
Total	209	33	242

Non-exempt employees may be summarized as follows:

	Number as of	
Classification	9-30-51	8-31-51
Accounting A	2	2
Accounting B	3	3
Accounting C	8	8
Accounting D	8	7
Business Graduate	23	25
Clerical Working Leader	9	7
Cost Clerk A	2	2
Cost Clerk B	1	1
Cost Clerk C	2	2
Cost Clerk D	2	3
Field Clerk B	3	3
Field Clerk C	5	3
General Clerk A	23	24
General Clerk B	39	42
General Clerk C	41	39
General Clerk D	5	7
General Clerk E	2	2
Office Machine Operator A	12	11
Office Machine Operator B	6	6
Secretary B	1	1
Steno-Typist A	1	2
Steno-Typist B	6	7
Steno-Typist C	4	5
Steno-Typist D	1	1
Total	209	213

121272

PERSONNEL AND ORGANIZATION (continued)

Open employment requests as of September 30, 1951 were as follows:

Business Graduate	1
General Clerk B	4
General Clerk C	1
Steno-Typist A	1
Steno-Typist B	1
Total	8

1217213

General Accounting Section

	September	August
Accounts Payable *		
Balance at Beginning of Month	$ 103 004	$ 111 469
Vouchers Entered	1 133 305	1 441 875
Cash Disbursements	1 145 850 DR	1 451 939 DR
Cash Receipts	446	1 599
Balance at End of Month	$ 90 905	$ 103 004
Number of Vouchers Entered	1 518	1 835
Number of Checks Issued	983	1 139
Number of Freight Bills Paid	191	254
Amount of Freight Bills Paid	$ 3 324	$ 4 950
Number of Purchase Orders Received	653	784
Value of Purchase Orders Received	$ 157 066	$ 299 642
Cash Disbursements		
Community, Real Estate, and Services	$ 310 810	$ 291 922
Engineering	6 622 290	7 008 171
General	3 730 712	4 527 769
Manufacturing	760 375	664 103
Total	$11 424 187	$12 491 965
Material and Freight	$ 2 862 910	$ 2 481 781
Lump Sum and Unit Price Subcontracts	916 636	779 786
CPFF Subcontracts		
Labor	3 421 272	4 121 827
Others	697 370	837 433
Payrolls (Net)	2 440 299	2 885 305
Payroll Taxes	488 311	665 431
U. S. Savings Bonds	144 563	190 525
General and Administrative Expenses	-0-	200 000
All Other	452 826	329 877
Total	$11 424 187	$12 491 965
Cash Receipts		
Community, Real Estate, and Services	$ 118 530	$ 116 812
Engineering	45 117	58 613
General	12 125 737	12 761 981
Manufacturing	19 026	38 312
	$12 308 410	$12 975 718

* General Accounting Only

121274

General Accounting Section

	September	August
Detail of Cash Receipts		
Advances from AEC	$ 6 367 054	$12 340 246
Rents	134 018	145 644
Hospital	37 996	57 041
Telephone	19 570	16 158
Scrap Sales	3 182	3 934
Bus Fares	9 123	10 196
Miscellaneous Accounts Receivable	9 191	10 831
Sales to AEC Cost-type Contractors	13 535	380 249
Refunds from Vendors	3 174	4 447
Employee Sales	646	739
Educational Program	2 526	12
Refund of Allowance	5 600 576	-0-
Income from Special Funds	101 461	-0-
All Other	6 358	6 221
Total	$12 308 410	$12 975 718
Number of Checks Written		
Community, Real Estate, and Services	257	223
Engineering	1 112	1 122
General	983	1 139
Manufacturing	531	586
Total	2 883	3 070
Bank Balances At End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$ 2 678 584	$ 1 809 408
Seattle First National Bank - Richland		
Contract Account	2 317 765	2 231 533
U. S. Savings Bond Account	190 631	188 071
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	34 192	47 739
Seattle First National Bank - Seattle		
Escrow Account	31 685	31 685
National Bank of Commerce - Richland		
Contract Account - Manufacturing	377 017	387 393
Contract Account - Community, Real Estate, and Services	193 802	254 611
Total	$ 5 873 676	$ 5 000 440
Travel Advances and Expense Accounts		
Cash Advance balance at end of month *	$ 27 687	$ 23 261
Cash Advance balance outstanding over one month *	4 988	5 297
Traveling and Living Expenses:		
Paid Employees	24 548	36 810
Billed to Government	22 184	31 481
Balance in Variation Account at end of month	11 026	8 661

* General Accounting Only

1217275

General Accounting Section

Hospital Accounting

	September	August
Accounts Receivable		
Balance at Beginning of Month	$ 119 608	$ 124 722
Invoices Issued	58 934	57 563
Refunds	915	443
Cash Receipts	37 996 CR	57 041 CR
Payroll Deductions	4 651 CR	3 947 CR
Bad Debts Written Off	-0-	2 229 CR
Adjustments	92	97
Balance at End of Month	$ 136 902	$ 119 608

Scrap Sales

	September	Total to Date
Number of Sales	410	10
Revenue (excluding Sales Tax):		
Scrap Sales	$ 371 631	$ 3 058
Tract House Sales		
Revenue to AEC	33 449	-0-
Revenue to GE	14 498	-0-
Total	$ 419 578	$ 3 058

1217276

ACCOUNTS PAYABLE

Major activity during September was preparing for the October 1 centralization of Manufacturing and Community, Real Estate, and Services Accounts Payable units with that of General Accounting. The centralization involved the transfer of ten additional people from the other Accounts Payable units to General Accounting, and required provisions for combining the operations and functions of the three former units. Necessary office space was provided, and the combined operation was ready to function on October 1.

Through continued efforts the number of paid accounts payable vouchers not forwarded to the Atomic Energy Commission for final approval due to lack of required supporting data was further reduced by 20 per cent, leaving only 10 uncleared vouchers open in excess of 90 days at the end of September.

All monthly summaries reflect a general decrease in the volume of work during September. Most noticeable was the decrease by 47 per cent in the value of new purchase orders issued as indicated below:

	September		August	
	No.	Value	No.	Value
New Orders	653	$157 066	784	$299 642
Alterations	66		69	

The number and value of vouchers booked decreased considerably. In September 1 518 vouchers amounting to $1 133 305 were entered, as compared with 1 835 amounting to $1 441 874 in August.

The number of checks issued was reduced 14 per cent, detailed as follows:

	September	August
Chemical Bank and Trust Company	291	368
Seattle First National Bank	692	771
Total	983	1 139

The number and value of freight bills paid also declined sharply to 191 amounting to $3 324 in September, as compared with 254 amounting to $4 950 in August

A continued decrease in the number of vouchers on hand as of September 30 was also effected, as indicated below:

	September	August
Number on Hand - Paid	150	209
Number on Hand - Unpaid	783	904
Total	933	1 113

217277

BUDGETS

In addition to routine budget responsibilities during the month, Budget Accounting prepared a review of operating costs to determine certain comparative amounts to be used on unit cost reports for the months of September, October, November, and December. This review was prepared on an informal basis utilizing current plant force forecasts and known changes in salaries and other costs.

In anticipation of a mid-year review of the Fiscal Year 1952 Budget, preliminary work was started in revising budgetary procedures and routines in order to conform to the changes in cost accounting methods and reorganization of the Nucleonics Division.

COST

Cost reports for Utilities and General Services Department and Staff Departments (excluding Medical Services) for month of August were issued on September 17, 1951, and detailed reports of Research and Development costs for Radiological Sciences programs were issued on September 21, 1951.

Summaries of operating costs for Nucleonics Division, including Summary of Product Cost, Protection of Plant and Personnel Expense, and General and Administrative Expense, were issued to Plant Management on September 18, 1951.

Letters were issued about September 24 to managers analyzing costs incurred by their departments or sections in August, and affording comparison with similar costs incurred in July where there were appreciable changes

In addition, letters were issued to the Director, Radiological Sciences, and to the Manager, Utilities and General Services Department, outlining the portion of their total costs which were allocated to Protection of Plant and Personnel and to General and Administrative Expenses, comparing August costs with similar amounts allocated in July and explaining major variations in these costs.

Considerable time was spent in arranging for the transfer to General Accounting of cost accounting for the Electrical and Transportation Sections, now part of the Utilities and General Services Department. Changes were made gradually throughout the month so as not to interrupt the flow of cost information. As of the end of September, the transfer was well along, and personnel handling these cost accounts were physically transferred on October 1, 1951.

GENERAL ACCOUNTS

Advances from the Atomic Energy Commission increased from $5 500 000 as of August 31, 1951, to $6 500 000 as of September 30, 1951. This increase is reflected in the increase in the cash balance. These advances may be summarized as follows:

	September	August
Cash in Bank	$5 567 169	$4 682 946
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	482 831	367 054
Advances to Subcontractors	300 000	300 000
Travel Advance Funds	100 000	100 000
Total	$6 500 000	$5 500 000

1217270

GENERAL ACCOUNTS (CONTINUED)

Travel activity of the General Departments for September, 1951, may be compared with August, 1951, as follows:

	September	August
Number of Travel Reports Processed	133	182
Amount Reimbursed Employees	$ 17 529	$ 24 706
Amount Reimbursed by Atomic Energy Commission	16 473	22 237
Difference charged to Variation Account	$ 1 056	$ 2 469

Fiscal Year to Date, total Nucleonics Division charges to the Travel and Living Expense Variation Account have been $11 026. Current month charges in the amount of $2 364 represent entertainment expenses of $401 and the difference between the amount reimbursed to traveling employees and the amount billed to the Atomic Energy Commission of $1 963.

Charges in the amount of $327 329 were received from the General Engineering Laboratory in connection with the Assistance to Hanford Program No charges were transferred from K. A. P. L. or the Research Laboratory.

Trial balances issued by all accounting sections were received on September 15, 1951, and the Consolidated Trial Balance was issued on September 18, 1951. The General and Consolidated Financial Statements were issued on September 19 and on September 25, 1951, respectively.

Considerable time was spent in revising the Government Cost Transfers and Excess Materials report this month. The revisions will appear on the September reports. The Construction Work In Progress Report was also revised in order to provide additional information concerning construction projects and work orders.

INTERNAL AUDITS

During September, work was completed on different phases of several internal audits that are nearing completion. The analyses of time keeping and related work records and other investigations, in connection with the personnel check of General Electric employees at Hanford Works, were completed and are in the process of being put in report form. Observations were continued in the field of the manner in which personnel of Purchasing and Stores Section take physical inventories. Data gathered during these observations will assist in the preparation of a physical inventory procedure for Hanford Works.

In line with the need for proper planning of internal audits, several internal audit programs are in the process of being prepared. In preparing these programs, which describe the procedures to be followed by internal auditors, consideration is given to experience and work standards developed during past internal audits.

Physical inventory verification work required the attention of several internal auditors during the month. The working papers prepared during the course of

INTERNAL AUDITS (CONTINUED)

several physical inventories completed by Purchasing and Stores Section were reviewed. These reviews were supplemented by observations and spot checks in the field at the time the physical inventories were in process.

Stores control ledger clerks were assisted in reconciling memorandum Stores Unit records with the General Ledger as of August 31, 1951 This was done to follow up the reconciliation procedure installed in Janunry. 1951.

MEDICAL ACCOUNTING

The balance in Accounts Receivable increased $17 294 during the month - from $119 608 in August to $136 902 in September. This increase is due primarily to a decrease of $19 045 in cash receipts during the month.

Assigned Metropolitan insurance claims were not processed on schedule due to vacations, terminations, etc.. resulting in a large backlog of insurance claims for which payment was authorized directly to Kadlec Hospital. This backlog of claims had the effect of reducing cash receipts by more than the amount of our ledger increase. Insurance claim payments of approximately $6 000 were received the last day of the month but could not be deposited until October.

Sales increased $1 371 over the previous month.

Out patient invoices numbered 1 980 and amounted to $9 271, as compared with 2 178 invoices amounting to $10 394 in August, a decrease of 198 invoices amounting to $1 123.

In patient revenue increased $2 494 in September, due primarily to an increase in the adult patient day census from 75.9 in August to 85.2 in September.

A total of 34 claims in the amount of $1 670 were submitted this month to Fort Lewis for services rendered military personnel. Reimbursement on 23 claims in the amount of $979 on prior months' billings was received during the month

Blue Cross claims paid during the month numbered 30 and amounted to $1 729.

Listed below is a summary of activity to date on accounts submitted to credit agencies for collection:

	Number	Amount
Accounts Submitted	196	$33 527
Accounts Returned as Uncollectible	49	10 230
Collections	59 *	3 583
Accounts Returned (10% basis)	8	773
Balance at Agencies	104	18 941

* Includes 35 accounts paid in full and 24 accounts partially collected.

1217200

MEDICAL ACCOUNTING (CONTINUED)

The cost code system is being revised to conform with a system recommended by the American Hospital Association. Certain additions needed to meet our requirements are being incorporated. The new system will be effective November 1, 1951.

PLANT ACCOUNTING

A special study was conducted during the month to analyze internal Plant Accounting procedures, the prime purpose being to effect a reduction in personnel, if possible. As a result, certain changes were put into use, making two clerks available for transfer. In connection with this survey and previous studies, it was determined that the IBM system of asset accounting, if adopted, would result in a more efficient operation and make further reductions in personnel possible.

A review of composite depreciation rates for selected categories of Plant Accounts is under way, with special emphasis on the accounts, Roads, Walks, and Paved Areas and Experimental Equipment. It is believed that composite rates for these two accounts are excessively high.

A special analysis was furnished the Atomic Energy Commission, Office of Finance, listing asset balances for all Plant Accounts. An additional listing associating assets with selected processes within the 200 Areas was furnished as supporting detail.

At the request of Plant Accounting, recast of the Fiscal Year 1952 budget of "Equipment Not Budgeted For In Construction Projects" was prepared, based on organization changes placed in effect after July 31, 1951. This was required by Plant Accounting in connection with the issuance of "Expenditures For Equipment Not Budgeted For In Construction Projects" reports.

With the help of Manufacturing Accounting personnel, considerable progress was made on the allocation of depreciation to end processes. Completion of this allocation for Fiscal Year 1952 is expected by the middle of next month.

The transfer of Office Furniture and Equipment used by Engineering and Construction from the account, Major Construction Program Equipment, to completed Plant Accounts was accomplished during the month. This is in keeping with the planned centralization of records in Plant Accounting, covering all equipment used by General Electric. Other categories will be transferred in the future, as soon as arrangements can be completed.

Inventories of selected categories of Plant and Equipment continues. A reconciliation of the account, Instruments - Measurement And/Or Control, is under way.

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PAYROLLS

During the month of September, there were 213 removals from payroll, which includes 7 leaves of absence and 5 transfers to other divisions of the Company. There were 205 additions to the payroll, including 28 employees re-engaged with continuous service. Total accessions and separations resulted in a net decrease of 8 employees.

Total Military Allowance payments in September to three weekly paid employees entering the Armed Forces amounted to $984. There were no payments made during the month to monthly paid employees. Total payments to date of $22,141 has been paid to 62 weekly paid and 7 monthly paid employees.

Number of rent, telephone, and hospital charges to be deducted from salaries in September were submitted to Payroll as follows:

House Rents	4 867
Dormitory Rents	871
Trailer Space Rents	122
Barrack Rents	257
Telephone Accounts	3 651
Hospital Accounts	452
Total	10 220

Housing Wage Deduction Authorizations which were transmitted to the respective Department Managers or their representatives on July 31, 1951, have been returned to Payroll except in the case of eight employees. Of these, five employees have been on leave of absence due to illness, and three have failed to return the authorization.

Due to the Labor Day Holiday, September 3, 1951, 25 man hours of overtime were required in order to complete the payroll on schedule for the week ended September 2, 1951. Checks for employees in the outer areas were delivered to patrolmen at the area gate houses on Thursday evening, and salary checks for employees located in Richland, North Richland and Pasco were available at the usual time, 8:00 a.m. Friday, September 7, 1951, for pick-up by department representatives.

At September 30, 1951, 185 Nucleonics Division employees (10 monthly paid and 175 weekly paid) had entered military service, as indicated below:

	Called To Duty	Volunteered For Duty	Total
Reserve Officers	14	3	17
Enlisted Reserve	50	6	56
National Guard	6	-0-	6
Selective Service	37	-0-	37
Voluntary Enlistments	-0-	69	69
Total	107	78	185

Transfer or reclassification of weekly paid employees during September, 1951, resulted in elimination or loss of preferential rate in 59 cases. As of September 30, 1951, there are approximately 900 employees on preferential rates.

1217202

PAYROLLS (Continued)

Continuity of service for two weekly paid employees was restored by the Pension Board during September.

To consolidate three reports (two prepared monthly and one weekly) on absenteeism now being issued by Payroll, a new absentee report form has been designed and will be issued on a monthly basis effective with the report covering absenteeism for the month of September, 1951.

Safety shoe deduction authorizations were received from 153 employees in September. At September 30, 1951, there were 97 outstanding accounts.

New authorization cards for check-off of Union dues were received for 48 employee members of seven Unions affiliated with the Hanford Atomic Metal Trades Council. As of September 30, 1951, check-off of Union dues was in effect for 936 employee members of twelve Unions affiliated with the Hanford Atomic Metal Trades Council and 27 employee members of the Building Service Employees International Union, Local 201.

The Agreement between the Hanford Guards Union - Local 21 of the International Guards Union of America and General Electric Company was executed on August 3, 1951. In accordance with this agreement, which provides for check-off of Union dues, the Union submitted payroll deduction authorizations covering check-off of Union dues for 128 employee members. The initial deduction of dues will be made from salary checks covering the week ending September 30, 1951.

Agreement between General Electric Company and the Hanford Atomic Metal Trades Council was entered into as of the 14th day of September, 1951, covering the Richland and North Richland Village Firemen. Included in the agreement is provision for check-off of Union dues for employees who sign individual authorizations, and this procedure will be followed upon receipt of authorizations from the Union.

Summary of gross earnings of Nucleonics Division employees who performed work outside the State of Washington during the period from September, 1947 to date was prepared for use of Internal Audit Unit in connection with Business and Occupation Taxes.

A total of 35 weekly time cards were received late in Payroll during the four weeks ended September 23, 1951.

A total of 481 employees were scheduled to begin their 1951 vacation in September. Approvals were received in September to defer one week of 1951 vacation to 1952 for 25 weekly paid and 20 monthly paid employees. The number of deferments to date is as follows:

	September			Total to Date		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Engineering	5	8	13	28	52	80
Manufacturing	5	3	8	118	60	178-a)
Utilities and General Services	4	3	7	82	30	112
Community Real Estate and Services	2	2	4	30	17	47
Financial	7	1	8	13	3	16
Employee and Public Relations	1	2	3	2	3	5
Radiological Sciences	-0-	1	1	1	1	2
Medical Services	1	-0-	1	7	-0-	7
General	-0-	-0-	-0-	-0-	3	3
Total	25	20	45	281	169	450

(a- Total to date reduced by one cancellation.

1217283

PAYROLLS (Continued)

At the request of Department Managers or their authorized representatives, approximately 350 salary checks were held in the Payroll office and distributed directly to weekly paid employees working in the areas and who are scheduled off on Thursday and Friday.

Approximately 75 weekly salary checks were picked up by an employee of the Employee and Public Relations Department for delivery to employees absent due to illness. Salary checks and Withholding Statements mailed to employees who have been removed from the Payroll totaled 69 and 304 respectively.

At August 31, 1951, there were 5 lost salary checks not reissued, and one salary check was reported lost during September. Two checks were replaced during the month, leaving four lost salary checks not reissued at September 30, 1951.

Five garnishments were received and dismissed in September without payment to the court. There were no garnishments pending at September 30, 1951. One notice of levy was received in September from the Collector of Internal Revenue, and was pending at September 30, 1951.

Due to reorganization of the Manufacturing Department and the Purchasing and Stores Section of the Utilities and General Services Department, approximately 3,000 suffix letters to payroll numbers were changed on addressograph plates and payroll records during the month of September.

Addressograph plates were prepared for the 128 employee members of the Hanford Guards Union, Local 21, who signed Union dues check-off authorizations.

In addition to routine payroll work, approximately 130 man hours were expended in September to addressograph approximately 128,500 items for other departments.

During the month of September, 86 employees withdrew from the General Electric Employees Savings and Stock Bonus Plan 890 U. S. Savings Bonds having a maturity value of $45,950. Checks were delivered to 28 participants in the Plan who withdrew during the year 1951, U. S. Savings Bonds purchased in 1948 and 1949. These checks cover income for the years 1949 and 1950 on General Electric Company common stock which has been credited to their accounts.

In connection with the current U. S. Savings Bond Drive, addressographed authorization forms for payroll deductions and booklets explaining the G. E. Savings and Stock Bonus Plan were delivered to departments for distribution to employees who are not now participating in the plan.

Draft of Organization and Policy Guide covering "Absences" was reviewed by Payroll in September. Drafts of Organization and Policy Guides covering "Continuity-of-Service", "Pension Plan", "Company Benefits to Employees Entering the Armed Forces", "Employee Sales Plan", and the "G. E. Employees Savings and Stock Bonus Plan" are currently being reviewed at September 30, 1951.

During the month of September, 69 employees became eligible for participation in the General Electric Pension Plan. Of these, 53 employees applied for participation and 16 elected not to participate.

1217284

PAYROLLS (Continued)

During September, approximately 115 Designers and Draftsmen received a salary rate adjustment retroactive to April 2, 1951. The increased rates were paid on a current basis with checks covering the week ended September 23, 1951. The retroactive portion will be included in checks covering the week ended September 30, 1951.

A total of 795 checks in payment of benefits of $45,817 on 642 claims were received from the Metropolitan Insurance Company in September and forwarded to employees, or to hospitals and surgeons, as directed by employees.

During September, 544 insurance claims were processed and forwarded to the Metropolitan Life Insurance Company. These claims may be segregated as follows:

Hospital Benefits		
Kadlec Hospital	356	
Other Hospitals	70	426
Weekly Sickness and Accident Benefits		118
Total Number of Claims		544

Bank reconciliati ns completed:

Weekly Salary through #262, week ended September 7, 1951.
Weekly Salary Vacation through #262, week ended September 7, 1951.
U. S. Savings Bond Account for the month of August, 1951.
Monthly Salary through #60, month of August, 1951.

1217205

MANUFACTURING ACCOUNTING SECTION
September, 1951

REORGANIZATION AND GENERAL

With the transfer of the major portions of Transportation and Electrical functions to the Plant Utilities and General Services Department, all elements of the Manufacturing Accounting Section gave considerable effort and priority to the work of transferring September costs involved to the General Accounting Section and acquainting the General Cost Section with the requirements of the transferred work.

The Accounts Payable Section completed arrangements for transferring personnel, equipment and functions to the General Accounting Section as of October 1, 1951. Work was started to effect transfer of general ledger accounts as of October 1, 1951.

Four Cost Section and nine Accounts Payable employees have been transferred. It is expected that three addtional General Accounts employees will be transferred.

BUDGETS

Budget personnel were under considerable pressure during the month recasting various schedules of FY 1952 budgeted Operating, Equipment and Construction costs by the new organization. Operating budgets were revised in accordance with September organization changes for operating reports.

INTERNAL REORGANIZATION

To promote efficiency through specialization and assignment of responsibility on the working level, cost reporting personnel have been broken down into three units corresponding to Manufacturing Department Sections.

SPECIAL REQUESTS

A meeting was arranged with Pile Applications Unit and representatives of the Engineering and Accounting Sections to discuss a study of Technical charges to Special Requests and Accommodations. Agreement was reached on a method for more specific allocation of Pile Applications Unit administrative costs to individual orders. Agreement was also reached on the principle of setting standards for all routine work by operation. An analyst from Manufacturing Accounting is presently in the areas gathering data for this work. It is planned initially to use the standards for estimating and audit, and later, when verified for accuracy, actual billing to AEC Cost Type Contractors.

OVERTIME

Since July 1, 1951 cost code changes resulting from reorganization has made it necessary to hold up tabulating IBM charges until all codes have been altered. The time then remaining until due-dates on reports is so shortened that considerable overtime in the Statistics and Reports groups has been employed to meet schedules. Overtime has been incurred in the Work Order Control group to complete changes as quickly as possible. Budget overtime has also been higher than anticipated due to necessary rework.

STATISTICS

Instruction classes in procedures for Vehicle and Manufacturing Department cost reports were held for two hours daily for four tabulating machine operators. Some scheduled instruction in control panel wiring was also given. The number of reports currently requested has caused a control panel shortage. We are presently considering borrowing panels from the Atkinson and Jones IBM installation pending receipt of ordered panels. A separate series of work order cost reports will be made for the newly formed Utilities and General Services Department.

RECASTING

Revision of recent operating cost reports to conform with current organization and accounting was continued. July figures were recast for August reports issued in the current month.

WORKLOAD

Although current requirements are abnormally high due to the reorganization, a return to normal work levels may be anticipated in the near future.

ORGANIZATION AND PERSONNEL

Beginning of Month	76
Acquisitions	3
Transfers Out	4
End of Month	75
Transfers Out Fiscal Year to Date	12

The above figures do not include employees applicable to functions transferred to the General Accounting Section. Effective transfer date of these employees will be October 1, 1951 and subsequent.

Three of the four transfers out were terminations, one to attend college, another to accompany husband attending college and the third to accept higher paying work in a craft. In addition one exempt employee was transferred to the Manufacturing Department Staff. Acquisitions were clerical personnel, in two cases replacing one current month and one August termination in the Budgets group.

1217207

ENGINEERING ACCOUNTING SECTION

MONTHLY REPORT FOR SEPTEMBER, 1951

I Summary

Meetings were held during September with representatives of Atomic Energy Commission and Atkinson-Jones to establish changes in operating procedures effective October 1, 1951 resulting from the modification to the Prime Contract which discontinued construction by General Electric. Assignments to the Atomic Energy Commission were received for 19 active lump sum or unit price subcontracts and Subcontract G-133 with Atkinson-Jones. Responsibility for reimbursement audit of these subcontracts remains with General Electric as an Architect-Engineer Management function, however, actual disbursement to the subcontractors of amounts approved for reimbursement by General Electric will be made by the Atomic Energy Commission. This change will result in disbursements by Engineering Accounting Section being reduced approximately two-thirds, however, there is no elimination of functions with the exception of actually issuing checks.

New sub-accounts were opened during the month in connection with Project C-431 to record Graphite Processing Equipment and Inspection Tools. Sub-accounts for depreciation reserves were also established. The graphite inventory in the amount of $3,139,034 was transferred to Engineering Accounting Section during September.

Certain property turned over to the U.S. Army at the request of Atomic Energy Commission was transferred to the Atomic Energy Commission through excessing procedures. A summary of this transfer is as follows:

		ASSET
Project C-178	North Richland Camp	$6 775 561.00
Project C-230	Contractors Yard	5 494.00

		RESERVE
Project C-178	North Richland Camp	$ 816 928.20
Project C-230	Contractors Yard	663.60

During the month auditors for the Union Pacific and Northern Pacific Railroad performed an audit of Project C-185, Railroad Connection South of Richland. This audit was made by the railroads to justify billings made by the Atomic Energy Commission to the railroads.

Thirteen Project Financial Closing Statements were issued during the month.

1217206

II Statistical and General

Checks issued during the month numbered 1,112 aggregating disbursements of $6,622,290.

Invoices at month's end which required additional supporting documentation to permit release to the Atomic Energy Commission totaled $3,625,043 of which $1, 575,275 represented payroll items and $2,049,768 represented material and freight.

Accounts Payable Distribution Summary follows:

	September
General Electric Purchases	$2 037 780
Reimbursement - Atkinson-Jones CPFF Subcontract - Construction	3 428 497
Reimbursement - Atkinson-Jones CPFF Subcontract - Service	388 955
Reimbursement - Other CPFF Subcontracts (Architect-Engineers)	232 454
Partial Payments to Lump Sum Subcontracts	636 645
Travel	4 557
Miscellaneous	45 011
Total Credited to Accounts Payable	$6 773 399

Subcontractors Payroll Statistics:

Payrolls

		August
Average number of employees reported by CPFF Subcontractors (Including Service Subcontract)	6 573	5 754
CPFF Construction Subcontractors Payrolls	$3 500 449 (a)	$2 458 048 (b)
CPFF Service Subcontract Payrolls	471 113 (a)	366 299 (b)
CPFF Architect Engineer Payrolls	123 088	192 703
Total CPFF Payrolls	$4 094 650	$3 017 050
Average per week (excluding Architect-Engineer Payrolls)	$ 794 312	$ 706 087
Average Weekly Earnings (Construction Employees)	$ 120.85	$ 122.71

(a) Five week period

(b) Four week period

Forces

The number of workers employed on projects in September as compared with a similar date in August is shown below:

	September 20	August 30
Atkinson - Jones (Subcontract G-133)		
C-187-D Redox Production Facilities	93	276
C-187-E Redox Laboratory	2	
C-361 Metal Conversion Facilities	210	110
C-362 TBP	1 655	1 667
C-413 Expansion of 234-5 Capacity	119	105
C-431 New Production Facilities	2 871	1 972
Atkinson - Jones (Service Subcontract G-133 Mod. #21.)	707	684
Total Direct	5 657	4 814
Atkinson - Jones Indirect	562	753
Service Subcontract Indirect	19	20
	6 238	5 587
General Electric Design and Construction	891	894
Total number of workers	7 129	6 481

Lump Sum and Unit Price Subcontractor forces are not included in this report.

III Organization and Personnel

During the month, five employees were transferred from other Departments, four were removed from the payroll and two transferred to other Departments.

September	August
97	98

1217290

COMMUNITY REAL ESTATE AND SERVICES
ACCOUNTING SECTION
MONTHLY REPORT FOR SEPTEMBER, 1951

ORGANIZATION

Employees-Beginning of month	31	Exempt	5	Male	8
Transfers In		Non-exempt	24	Female	21
Transfers Out			29		29
New Hires					
Terminations	2				
Total - End of Month	29				

RENTS

House Leases Processed	September	August
Total active leases beginning of month	5712	5693
New leases	164	182
Cancellations	133	163
Total active leases end of month	5743	5712
Modifications	15	12

Dormitory

Total occupancy beginning of month	1080	1076
New assignments	139	126
Removals	144	122
Total occupancy end of month	1075	1080

Rental Revenue was as follows:

Equipment	$ 12.45	$ 12.45
House:		
Basic rent	200,641.82	200,992.20
Electricity	48,635.49	48,793.56
Water	8,059.51	8,077.58
Facility:		
Basic rent	47,694.54	41,929.12
Electricity	3,433.92	3,433.92
Water	490.00	490.00
Dormitory	15,091.73	14,972.28
Utilities-Electrical	1,179.50	428.55
	$325,238.96	$319,129.66

TELEPHONE

Number of work order processed	348	305
Number of working telephones	5229	5164
Revenue including services	$ 19,413.31	$ 19,125.52

1.

121291

Community Real Estate
& Services Accounting

MISCELLANEOUS	September	August	
Invoices prepared during month	320	373	
Revenue derived from invoices	$ 2,916.87	$ 2,272.27	
Collection Agency Accounts			
Yakima Adjustment Service:			
Total submitted (64 accounts)	$ 905.50		
Collected by Yakima Adjust. Serv.	207.88		
Collected By General Electric Co.	113.63		
Returned - Written Off	8767		
Recalled - No Charge	4.00		$492.32
Credit Bureau of Benton & Franklin Co's			
Total submitted to 9-30-51(16 accounts)	$248.87	$ 99.23	
Collected by Credit Bureau	-0-	-0-	
Collected by General Electric Co.	-0-	-0-	
Returned - Written Off	-0-	-0-	
Recalled - No Charge	-0-	-0-	248.87
Balance-Agency Accounts 9-30-51			$741.19

ACCOUNTS PAYABLE

Statistics

Accounts Payable Vouchers	336	287
Freight Bills Processed	9	11
Purchase Orders Received	45	69
Net Amount of Purchase Orders	$ 14,544.38	$ 18,904.16
Receiving Reports Received	80	84
Net Amount Disbursed	$310,809.65	$291,922.28
Number of checks Issued	247	217

A summary of Active Subcontracts is shown below:

Subcontracter	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Newland Cafeteria	- -	$ 232.26	$ 12.28	$ 232.26	$ -0-
Richland Maint. Co.	- -	220,455.88	7,224.85	220,455.88	-0-
Ass'n Engineers, Inc.	G-305	172,391.42	8,677.64	172,391.42	-0-
Packard Pipe & Pump Co.	G-326	14,518.25	725.91	14,518.25	-0-
C & E Construction Co.	G-328	184,779.25	9,238.95	184,779.25	-0-
Edmund P. Erwen	G-334	16,000.00	13,251.32	14,400.00	800.00
Baldwin-Dunham Co.	G-343	1,380,139.60	98,811.13	1,350,333.44	16,245.50
Roof Service, Inc.	G-350	61,319.00	23,819.00	58,253.05	3,065.95
Motorola, Inc.	G-364	8,242.00	8,242.00	8,242.00	-0-
Weston Plumbing Co.	G-372	49,874.90	2,495.38	49,874.90	-0-

2.

121292

Subcontracts (Cont'd)

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
R. A. Heuman, & Son	G-373	$ 76,453.16	$ -0-	$ 53,909.88	$ 3,822.66
C. T. Malcom & Co.	G-377	12,087.80	-0-	11,483.41	604.39
American Steel & Wire Co.	G-378	12,114.66	12,114.66	12,114.66	-0-
Ass'n Engineers, Inc.	G-381	27,018.75	17,887.76	17,887.76	1,343.94
Erwen Construction Co.	G-387	11,214.50	375.00	9,352.27	492.23
D A Paving Co.	G-390	220,197.33	53,167.98	58,167.98	6,463.00
Algot Carl Grant	G-394	2,340.00	2,340.00	2,340.00	-0-
Baldwin-Dunham Co.	G-397	3,464.00	-0-	-0-	-0-
Royal Company, Inc.	G-399	3,362.00	3,362.00	3,362.00	-0-
Weston Plumbing Co.	G-405	9,226.00	-0-	-0-	-0-
Erwen Construction Co.	G-409	1,975.00	1,975.00	1,975.00	-0-
		$2,492,406.26	$268,720.86	$2,244,073.41	$32,837.67

COST

Reports

The August Operating Report was issued September 19, 1951. The Comptrollers Appropriations Report and Supplemental Report was issued September 15, 1951.

SERVICE ORDER

Service Order Charges

Code	QUANTITY (A) August	QUANTITY (A) September	LABOR COST August	LABOR COST September	MATERIAL COST August	MATERIAL COST September	TOTAL COST August	TOTAL COST September
1	1,221	1,244	$2,331.60	$2,024.61	$1,839.59	$1,300.74	$4,171.19	$3,325.35
2	1,759	1,752	2,572.75	2,182.45	2,174.79	2,535.91	4,747.54	4,718.36
3	124	193	313.60	545.20	153.27	371.82	466.87	917.02
4	124	146	256.55	343.30	158.84	189.37	415.39	532.67
5	279	276	576.45	562.73	372.48	608.47	948.93	1,171.20
6	400	426	1,048.95	1,056.93	251.08	256.51	1,300.03	1,313.44
	3,907	4,037	$7,099.90	$6,715.22	$4,950.05	$5,262.82	$12,049.95	$11,978.04
(B)		⁄ 130		- 384.68		⁄ 312.77		- 71.91
(C)			1.82	1.66	1.27	1.30	3.09	2.96

(A) Quantity covers the number of Service Charges made since some Service Orders include several charges.
(B) Over (⁄) or Under (-) Previous Month.
(C) Average Costs per job, labor, material and total.

1	Plumbing	3	Heating & Ventilating	5	Lock & Key
2	Electrical	4	Glazing	6	Carpentry

3.

1217293

Community Real Estate
& Services Accounting

WORK ORDERS

	July	August	September	
Active Routine	261	263	263	-0-
Active Normal	2,706	1,926	1,733	-193
	2,967	2,189	1,996	-193
W. O. Received	967	1,567	1,038	
W. O. Completed	972	2,345	1,231	
	∠ 5	∠ 778	∠ 193	

GENERAL LEDGER	No.	Debit	Credit
Second Class Invoices Received	79	$362,360.79	$169,267.70
Second Class Invoices Issued	100	358,104.39	3,431.30

1217294

PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - SEPTEMBER 1951

SUMMARY

There were no major injuries during the month. Total major injuries for the year to date remains at five with a frequency rate of 0.38.

There were four minor fires during the month with a loss of $10.00.

Forms Control and Procedures Analysis activities resulted in savings estimated at $10,438 with $9,989 on an annually recurring basis.

Effective September 24, Security Patrol began operating under a new shift schedule. The new schedule results from an agreement reached during negotiation of a contract with the International Guards' Union which provides a paid lunch period for all patrolmen.

1217295

PLANT SECURITY AND SERVICES SECTION

MONTHLY REPORT - SEPTEMBER 1951

ORGANIZATION AND PERSONNEL:

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	6	6		
Patrol and Security	644	648	4 (a)	
Safety and Fire Protection	151	148		3 (b)
Office Services (Building and Laundry Service, Clerical Services, Records Control and Procedures Analysis)	296	298	2 (c)	
TOTALS	1,097	1,100	6	3

NET INCREASE: 3

(a) - Patrol and Security

18 - New Hires
3 - Transferred to other Departments
5 - Deactivated, personal illness
6 - Terminations

(b) - Safety & Fire Protection

1 - Transferred to another Department
2 - Terminations

(c) - Building and Laundry Service

2 - New Hires
1 - Transferred from another Section
1 - Deactivated, personal illness
2 - Terminations

Clerical Services

14 - New Hires
1 - Transferred from another Department
5 - Transferred to other Departments
1 - Deactivated, personal illness
1 - Leave of Absence
6 - Terminations

Records Control

1 - New Hire
1 - Transferred to another Department

1217296

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	53
Accumulated Exposure Hours since last Major Injury	2,607,960
Major Injury Frequency Rate (1/1/44 through 9/30/51)	0.78

	August	September	Year to Date	Comparative Period, 1950
Major Injuries	1	0	5	3
Sub-Major Injuries	0	2	13	21
Minor Injuries	360	298	2,808	2,854
Exposure Hours	1,561,303	1,449,574	12,988,811	11,189,305
Major Injury F/R	0.64	0.00	0.38	0.27
Major Injury S/R	0.012	0.00	0.04	0.004
Penalty Days	0	0	450	0
Actual Days Lost	19	0	56	55
Minor Injury F/R	2.31	2.06	2.16	2.58
Estimated Medical Treatment Time Required	1,592 hours	1,208 hours	11,797 hours	

Safety Activities

Load limits of elevators in the 105 Buildings in the 100 Areas were established and information submitted to the Engineering Design Section for consideration in the design of the 105 Building, 100-[illegible] Area.

A new procedure controlling the packing of backseating valves under pressure was established. It will eliminate the packing of many types of valves and will involve substantial savings.

On September 28, the 200-East Area passed 1,003 days without a lost time injury. A Safetygram covering this achievement was sent to all members of supervision in this Area.

The safety survey of Kadlec Hospital is nearing completion and will be submitted shortly.

There was a 17% reduction in minor injuries during September. The trend had been on the increase for three months previous to September.

During the month, requisitions for 83 pairs of prescription safety glasses were handled, 51 pairs were delivered, 18 pairs of safety glasses were repaired, 56 pairs adjusted, and 150 pairs reconditioned and put back in Stores' stock.

A study is being conducted of the feasibility of using the new type Army assault gas mask to replace the present type mask.

A committee is being formed to study the handling of liquid nitrogen, air, or oxygen. Standards will be established on a plant wide basis.

Fire Protection Activities

Building surveys were completed for Buildings 1722-D, 2722-W, and 272-W.

Twenty-nine new patrolmen were given training on the operation of the fire alarm system and first aid fire extinguishers at the Patrol Training School.

Six fire alarm boxes were loaned to Construction for use in the 100-C construction area. They were also given assistance in locating the boxes.

The fire alarm panel in 100-D Area was moved from the 1717-D Combined Shops to Patrol Headquarters.

Fire alarm box 353 was connected into the 200-W system. It is a master box and is connected to the fire fog system in the 276-S Building.

The fog system in the 276-S Building was tested and made ready to place in service by a factory representative.

The fire detector system in 222-S Building was tested and placed in service.

The annual inspection and overhaul of all the sprinkler alarm valves in the 300 Area has been completed.

Forty new employees were given orientation in fire protection.

The Safety Topic of the Month for October, "Fire Prevention", was prepared and distributed.

Drills conducted by the training section during the month - 199.

Industrial Fires

Department	Area	No. of Fires	Cause	Loss
	Open	1	Improperly attended fire caused grass fire.	None
Patrol	200-E	1	Brake band on ambulance failed to release and the friction on the brake drum generated sufficient heat to cause vapors to rise from the accumulation of oil on transmission. Vapors ignited.	None
Transportation	300	1	Trash from garbage can became ignited in Transportation truck. Caused by discarded smoking material.	None
Separations	200-E	1	Electrical circuit not de-energized.	$10.00
TOTAL FIRES		4	TOTAL LOSS	$10.00

OFFICE SERVICES

Building and Laundry Service

Plant Laundry (200-W)

	August	September
Pounds Delivered	170,630	180,172
Pounds Rewash	26,967	17,758
Total Dry Weight	197,597	197,930

700 Laundry

Flatwork - Pounds	68,991	68,732
Rough Dry - Pounds	20,650	22,757
Finished - Pounds	3,003	2,918
Estimated Pieces	121,364	123,673
Total Dry Weight - Pounds	92,644	94,407

Monitoring Section (200-W Laundry)

Poppy Check - Pieces	126,950	136,399
Scaler Check - Pieces	155,978	155,736
Total Pieces	282,928	292,135

Clerical Services

Central Mail

A teletype machine was installed September 20 on a national hookup for the exclusive use of the General Electric Company. The service by this machine will start October 1, 1951.

Types and Pieces of Mail Handled	August	September
Internal	850,556	822,950
Postal	83,173	78,451
Registered	1,677	1,450
Insured	388	357
Special Delivery	261	223
Total Mail Handled	916,055	903,431
Total Postage Used	$2,226.05	$2,004.19
Total Teletypes handled	7,336	6,357
Store Orders handled	345	418

Office Equipment

Machine Repair	August	September
Office Machines Repaired in Shop	249	214
Office Machine Service Calls	567	538
Total Machines Serviced	816	752

Furniture Moves		
Office Moves	126	56
Pickups for Records Center, etc.	50	42
Desks Refinished	5	6
Chairs Refinished	45	23
Store Orders Filled	493	377
Pieces of Furniture Delivered	891	775
Property Transfers Completed	68	42

Central Printing

All work has been completed on the remodeling of offices in the 717 Printing Building.

The backlog of printing continued to be held down during the month. All of the type setting has been completed and work is up to date on the work for Schenectady.

Multilith Orders	August	September
Received	437	435
Completed - Day Shift	319	207
Completed - Night Shift	138	217
On Hand	72	82
Cancelled orders	0	1

Stenographic Services

Due to many stenographers returning to schools and colleges and requests for additional work, as well as loans of personnel, a backlog of work is forming in this service group.

Breakdown of Hours	August	September
Dictation and Transcription	:00	:00
Machine Transcription	:00	43:00
Letters	20:45	14:45
Rough Drafts	20:00	16:00
Stencils, Dittos, and Duplimats	343:05	453:35
Miscellaneous	767:25	602:35
Meeting Time	:00	5:00
Training	17:15	223:35
Absentee Time	:00	:00
Holiday and Vacation	8:00	:00
Unassigned Time	64:00	85:00
Total	1240:30	1443:30

1217300

Stenographic Services (Contin.)

	August	September
Employees Loaned to other Departments	1547:00	1230:30
Total Hours Available	2787:30	2674:00

Duplicating Services

This service continues to operate on two shifts. The backlog of work is caught up and we are now on a day to day basis. Saturday work is also being continued as a convenience to other departments.

Stencil and Fluid Duplicating	August	September
Orders Received	875	932
Orders Completed	891	941
Orders on Hand	10	11
Number of Stencils	3,137	2,463
Number of Copies	387,503	51,496
Number of Dittos	1,414	1,732
Number of Copies	61,933	75,093
Collated Orders	27	27
Collated Copies	137,739	62,450

Records Control

Quantity of Records received, processed and stored:

Community Real Estate & Services Department	3	Standard	Storage	Cartons
Employee & Public Relations Department	2	"	"	"
Engineering Department	138	"	"	"
Financial Department	65	"	"	"
General Administrative Department	2	"	"	"
Manufacturing Department	58	"	"	"
Medical Department	20	"	"	"
Radiological Sciences Department	155	"	"	"
Sub-Contractor - Hanley & Company	64	"	"	"
Utilities & General Services	66	"	"	"
TOTAL	573	Standard	Storage	Cartons

Persons provided records services:	703
Records Cartons Issued:	389
Filing service provided:	816 records filed with records already in storage.
Percentage of the Records Service Center Vault occupied by records, excluding Civilian Defense portion:	76%

The uniform filing system was installed in thirteen offices during September.

Procedures Analysis

	August	September
Printing Orders received	511	424
Printing Orders cancelled	32	14
New Numbers assigned	86	119
Forms Designed	62	58

The survey of the prefix and suffix designation of the payroll number, which is the Phase I part of the Payroll Classification Records Survey, has been revaluated. Additional savings from this survey have resulted in the GE Photo House. Due to the results of this survey, it was found possible to reduce their staff by one Reproduction Photo Assistant.

Total Annual Savings	$3273.92
Savings Accounted for in August Report	428.00
Annual Net Additional Savings	$2845.92

The new filing procedure section which is to be included in the steno manual "This Way, Please" will be on the plant site October 4, 1951.

The forms stocking control survey was completed this month. The purpose of this study was to bring together pertinent information concerning forms and different possibilities of stocking and dispursing forms. This material will be used as reference in future studies.

The survey regarding the new procedure for submitting the monthly statistical and graphic report in the Mathematical and Statistical group of Technical Services has been completed. Under the new procedure, it was found possible to reduce their staff by two General Clerks. Savings, as a direct result of this survey, amount to $6989 annually.

Savings realized this month:

	One Time	Annual Recurring
Forms Control	$ 449	$ 154
Procedures Analysis	-	9,835
	$ 449	$9,989

TOTAL SAVINGS FOR SEPTEMBER: $10,438

PATROL AND SECURITY

General Electric employees given orientation talks: 172
Number of General Electric employees given termination interviews: 178

Number of security meetings held: 209 Attendance: 3,165

Patrol and Security (Contin.)

The following security education items were issued during the month:

Four security articles appeared in the Works NEWS.

A representative of the Security Unit showed the following security films:

"Sabotage" at two meetings, 50 people attending.
"On Guard" at one meeting, 25 people attending.
"The Case of the Smokeless Chimney" at 32 meetings, 800 attending.

Ten thousand copies of the "A-B-C" security pamphlet entitled "Do Your Relatives Drop In" were distributed to residences.

Number of employees receiving "Q" orientation talks: 147

The following emergency plans were placed into effect during the month throughout the plant areas:

Number of practice evacuations held:	2
Number of practice blackouts:	7
Number of practice mobilizations:	6

On September 5, representatives of the Security and Employment Units met with sixty employees of the Richland School District for the purpose of screening their Personnel Security Questionnaire forms, taking their fingerprint impressions, etc., in connection with obtaining security clearance on these people.

On September 5, the security films made at Hanford entitled "On Guard", "Sabotage" and "The Case of the Smokeless Chimney" were shipped to the General Electric New York Office, the Vitro Corporation, Charles T. Main Company, E. I. du Pont de Nemours and Company (Savannah River Ordnance Works) and the Bendix Corporation. These films were forwarded for use in their security education programs.

A memorandum was issued September 6 to the effect that the White Bluffs Security Patrol car would check the Arsenal at Hanford twice during each shift.

Letters were mailed on September 10 to approximately sixty civic groups in Richland wherein an offer was made to furnish a security speaker and security films at any one of their fall or winter meetings.

An instructor from the Patrol Training School has started taking the pictures for the new security film entitled "The Man on the Left".

Instruction Letter No. I-32, Revision No. 5, on security violations, was issued on September 14. This order provides for reporting security violations which are discovered by Security Patrolmen during their inspections. Patrol will report these violations by use of a revised printed form "Security Violation Report". This report will also be used for reporting classified material improperly stored and will eliminate the use of the Unusual Incident Report for security violations of this nature.

Patrol and Security (Contin.)

Beginning September 15, the Reactor Unit of the Design and Construction Section assumed complete responsibility for the operation of the 101 Area at Hanford.

On September 17, at 8:00 A.M., a new post was established in the 100-B Area and will be designated as the 100-C Construction Badge House. In conjunction with the opening of this badge house, 730 security health badges were transferred from the Main 100-B Area Badge House to the 100-C Construction Badge House.

Operations Order I-28, Revision No. 6, pertaining to the Hanford Works Operations Identification Pass was issued on Spetember 17. This order explains the new procedure which eliminates prefix and suffix designations on employees' photo identification passes.

Effective with the No. 1 Shift on September 24, Security Patrol personnel began operating under a new work schedule. This schedule provides for a staggered shift, each company divided into groups with a normal work schedule of eight hours, to include overtime which might be necessary. Due to the differences in hours between the groups, Patrolmen in all areas will be rotated from one group to another every eight weeks. This procedure will provide an equal distribution of overtime for all personnel. Patrol supervision will rotate from one group to another once every four weeks.

The Maintenance Section installed signs at the new Security Patrol Arsenal at Hanford on September 2h. These signs establish this location as a "Restricted" area which is not to be entered except when authorized by Security Patrol.

On September 25, at 5:33 P.M., the Emergency Officer issued a directive to ignore all lights and ground activities across the Columbia River from the Wahluke Slope to Gate No. 3 due to the fact that 800 to 1,000 members of Army personnel are being stationed in that vicinity.

Construction of the Aquatic Biology Laboratory Building started in the northeast corner of the 100-F Area. Gate No. 7 was opened to allow entry and exit of construction personnel. Temporary construction fences were locked to keep construction employees from entering 100-F Area proper.

Security Field Inspection Activities:

Contacts made regarding unaccounted for documents:	31
Physical searches conducted for unaccounted for documents:	11
Documents and/or prints located:	18
Notices issued to change file combinations:	27
Security talks given:	2
Investigations of registered mail violations:	5
Persons assisted in searching for documents prior to terminating their employment:	9
Investigations conducted regarding unattended classified material:	17

Patrol Training School Activities:

The following schedule of instruction was followed at the Training School during the month:

Patrol and Security (Contin.)

Health Class	1/4 hour
Field Security Class "They Look But They Do Not See". Material for this class was provided by the Field Security Group.	1 hour
Pass Procedure Class	1/2 hour
Police Tactics Class	1/2 hour
Marksmanship Class - with .38 cal. handgun Classroom work: Preparatory markmanship training (safety). Range Practice: Firing the Army L for score.	1 1/2 hours
Marksmanship Class - 12 gauge riot gun Classroom work: Preparatory marksmanship training (general). Range Practice: Loading, unloading, and firing of this weapon.	1 1/2 hours
Marksmanship Class - .30 caliber carbine Classroom work: Preparatory marksmanship training. Range Practice: Firing on the Army L Range at 75 yards on Army L targets (slow fire).	1 hour
M-8 Class	1 3/4 hours

A total of 591 pat searches were made during the month. Escorts handled totalled 424.

Patrol made 27 ambulance runs during the month.

There were 3,170 badge transactions completed during September including "A", "B", "C" and temporary type badges.

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING SEPTEMBER 30, 1951

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
ACCOUNTABILITY SECTION							
I. Visits to other Installations							
V. D. Donihee to: U. S. Atomic Energy Comm. Oak Ridge, Tennessee	Discussion of proposed revision of GM 95, New Processes, Current Items	W. C. Youngs, Jr.	9-17-51	9-19-51	X		
V. D. Donihee to: U. S. Atomic Energy Comm. New York, New York	Discussion of transfer problems and procedures	S. R. Gustavson	9-20-51	9-20-51	X		
E. N. Wooley to: U. S. Atomic Energy Comm Oak Ridge, Tennessee	Discussion of proposed revision of GM 95, New Processes, Current Items	W. C. Youngs, Jr.	9-17-51	9-19-51	X		
DESIGN AND CONSTRUCTION SECTION							
I. Visitors to this Works							
A. A. Batza General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51	1-1-52	X		200-W 234, 235 234-5 Const.
W. C. Bellows General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-7-51	10-20-51	X		200-W 234, 235 234-5 Const.
F. J. Champlin, Jr. General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-5-51	11-4-51	X		200-W 234, 235 234-5 Const.

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
D. E. Garr General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-25-51	9-29-51	X		200-W 234, 235 234-5 Const.
F. K. Glasbrenner General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-14-51	9-8-51	X		200-W 234, 235, 234-5 Const.
W. A. Hartman General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51	1-1-52	X		200-W 234, 235 234-5 Const.
M. W. Hively General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-5-51	9-15-51	X		200-W 234, 235 234-5 Const.
E. Long General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	6-26-51	10-20-51	X		200-W 234, 235 234-5 Const.
D. H. Marquis General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-21-51 9-28-51	9-1-51 10-13-51	X		200-W 234, 235 234-5 Const.
P. P. Polker General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	7-8-51	9-2-51	X		200-W 234, 235 234-5 Const.
R. W. Stanhouse General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-7-51	9-29-51	X		200-W 234, 235 234-5 Const.
R. J. Walsh General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	8-8-51	9-1-51	X		200-W 234, 235 234-5 Const

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Name - Organization	Purpose of Visit	Persons Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Restricted Data Areas
B. H. Womple General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-13-51	10-20-51	X		200-W 234, 235 234-5 Const.
N. H. Wood General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	4-2-51 10-15-51	1-23-52 12-15-51	X		200-W 234, 235 234-5 Const
T. O'Regan General Engineering Laboratory Schenectady, New York	Consultation and installation of equipment on 432 Project	W. P. Ingalls	9-17-51	10-6-51	X		200-W 234, 235 234-5 Const
E. S. Baker General Electric Company Schenectady, New York	Inspect installation of GEL RM Line Consultation on Project C-431-B	W. P. Ingalls J. S. Parker V. D. Nixon	9-11-51	9-14-51	X		200-W 234-5 Const. 234, 235
B. R. Tarrant Ingersoll Rand Company Seattle, Washington	Inspection of equipment supplied by his firm, particularly blower	C. F. Quackenbush	9-12-51	9-14-51		X	100-D 115 DR (inside 105)
H. Clay Minneapolis Honeywell Company Seattle, Washington	Check on instrumentation	C. O. Clementson	9-7-51	9-7-51		X	Redox
L. C. Ford Apparatus Department General Electric Company Spokane, Washington	Inspection of equipment supplied by General Electric Supply	C. F. Quackenbush	9-12-51	9-14-51		X	100-D 115 DR (inside 105
J. H. Wills General Machinery Company Spokane, Washington	Inspection of pumps supplied by his firm	L. O. Hasselblad	9-11-51 9-29-51	9-14-51 10-4-51		X X	277-U 277-U
C. L. Edwards Naglo Pumps, Incorporated Chicago, Illinois	Inspection of run-in pumps	W. B. Webster	9-29-51	10-3-51		X	277-S

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. R. McKenna E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consult on special materials fabrication	V. D. Nixon H. L. Sterling L. Pihlfeldt	9-18-51	9-29-51		X	101 105-C
H. S. Cline E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consult on special materials fabrication	V. D. Nixon H. L. Sterling L. Pihlfeldt	9-18-51	9-29-51		X	101 105-C
W. E. Brown X-ray Products Company Los Angeles, California	Consultation re: X-ray of welds in 234-5 process equipment	W. P. Ingalls	9-6-51	9-8-51		X	234-5 Const
J. G. Schneeman X-ray Products Company Los Angeles, California	Consultation re: X-ray of welds in 234-5 process equipment	W. P. Ingalls	9-6-51	9-8-51		X	234-5 Const
R. S. Stanton E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consult on special materials fabrication	V. D. Nixon H. L. Sterling	9-18-51	9-29-51	X		101
R. Garbutt E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consult on special materials fabrication	V. D. Nixon	9-18-51	9-29-51	X		101
II. Visits to other Installations							
G. S. Cochrane to: General Engineering Lab. Schenectady, New York	Liaison work on 432 Project	C. W. George	9-25-51	six months	X		
W. R. Felts to: General Engineering Lab. Schenectady, New York	Discuss P-10-X equipment	H. W. Bousman R. A. Kochler	9-4-51	9-6-51	X		
J. S. Parker to: Vitro Corporation New York, New York	Design consultation on C-431-B Project	G. White, Jr.	9-6-51	9-8-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. S. Parker to: Knolls Atomic Power Lab. Schenectady, New York	Overall general design consultation	W. W. Kuyper	9-4-51	9-6-51	X		
J. S. Parker to: General Engineering Lab. Schenectady, New York	Overall general design consultation	F. E. Crever	9-4-51	9-6-51	X		
C. W. Harrison to; Puget Sound Navy Shipyard Bremerton, Washington	Consult on "B" blocks, order HS-47	S. L. Allison	9-19-51	9-22-51	X		
J. B. Medlin to: American Machine & Foundry Buffalo, New York	Discuss horizontal & vertical control rods	F. J. Wilson C. M. Graves H. A. Nowak	9-11-51	9-12-51		X	
J. B. Medlin to: E. W. Bliss Company Canton, Ohio	Consult on gun barrels	R. V. Moss	9-13-51	9-13-51		X	
J. B. Medlin to: Whiting Corporation Harvey, Illinois	Discuss winch drawings	E. C. Rice M. E. Morton	9-14-51	9-14-51		X	
B. R. Elder to: Pacific Car & Foundry Seattle, Washington	Review structual steel progress	O. F. Beinz	9-21-51	9-24-51		X	
L. R. Lucas to: Pacific Car & Foundry Seattle, Washington	Review structual steel progress	O. I. Beinz	9-23-51	9-24-51		X	
R. C. Hollingshead to: Johnston Pump Company Los Angeles, California	Observe equipment test-ing	P. Brown	9-4-51	9-7-51		X	
R. C. Hollinghead to: Stearns-Roger Mfg., Denver	Observe test of pulse generator	M. S. Rosengren	9-12-51	9-23-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
T. Williams to: Nagle Pump Company Chicago, Illinois	Engineering consultation on on run-in pumps	C. L. Edwards	9-19-51	9-28-51		X	
R. C. Hollinghead to: Stearns-Rogers Mfg. Co. Denver, Colorado	Observe test of pulse generator	M. S. Rosengren	9-30-51	still gone		X	
H. P. Shaw to: Food Machinery Co. Seattle, Washington	Consultation re: Project C-438	D. V. Kudlich	9-17 -51	9-18-51		X	
J. M. Fox, Jr. to: Standard Steel Company Portland, Oregon	Consultation re: Project C-362 - evaporators on order	K. Barnhart	9-19-51	9-21-51		X	
H. J. Bollarts to: Reed Standard Corp. Erie, Pennsylvania	Discuss design details of Ball 3X Project	J. P. Costigan J. D. Berringer	9-10-51	9-11-51		X	
S. F. Schure to: Canadian G.E. Company Toronto, Canada	G. E. Drafting Committee conference	-	9-2-51	9-9-51		X	
J. R. Carroll to: Gaunlet Machine Works Seattle, Washington	Contact possible vendor, shield plug facility	Mr. Gaunlet	9-19-51	9-22-51		X	
R. F. Klein to: Precision Metal Products Los Angeles, California	Find vendor for horizontal rod	Mr. Tauton	9-24-51	9-29-51		X	

ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION

I. Visitors to this Works

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
L. C. Ford Apparatus Department General Electric Company Spokane, Washington	Repair switch gear	F. J. Mollerus	9-13-51	9-13-51		X	300 XXX
RADIOLOGICAL SCIENCES DEPARTMENT							
I. Visits to other Installations							
H. M. Parker to: U. S. Atomic Energy Comm. Washington, D. C.	Discuss radiological sciences and nuclear instrumentation	S. Warren W. D. Claus	9-25-51	9-28-51	X		
R. C. Thorburn to: U. S. Atomic Energy Comm. Washington, D. C.	Regional survey problems	W. D. Claus	9-10-51	9-12-51	X		
L. V. Zuerner to: Portland, Oregon	SPecial AEC account	- -	9-11-51	9-12-51		X	
II. Visitors to this Works							
L. R. Donaldson University of Washington Seattle, Washington	Consultation on radiation	H. A. Kornberg	9-19-51	9-21-51		X	
MANUFACTURING INSTRUMENT SECTION							
I. Visitors to this Works							
A. Damman Foxboro Company Foxboro, Massachusetts	Inspection on Project C-362	R. C. Mann B. E. Woodward	8-30-51 9-24-51	9-5-51 9-25-51		X	100-H 105 224-U 221-U
PLANT ENGINEERING - REACTOR SECTION							
I. Visitors to this Works							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
A. R. Whittlesey Travelers Insurance Company Seattle, Washington	Boiler inspection	E. E. Weyerts	9-6-51	9-6-51		X	100-D XXX
MANUFACTURING DEPARTMENT							
I. Visitors to this Works							
E. S. Baker General Electric Company Schenectady, New York	Inspection of facilities	K. F. Priest	9-12-51	9-13-51	X		100-H 105 300 303, 305 200-W 231, 221-U,224-U 277-S,Redox
J. B. McClure General Electric Company Schenectady, New York	Inspection of facilities preparing for technical reports	P. E. Lowe W. K. MacCready	9-17-51	9-19-51	X		300 303 100-H 105 200-W 202-S
A. G. Mellor General Electric Company Schenectady, New York	Inspection of facilities preparing for technical reports	P. E. Lowe W. K. MacCready	9-17-51	9-19-51	X		300 303 100-H 105 200-W 202-S
II. Visits to other Installations							
H. G. DeVoss to: U. S. Atomic Energy Comm. Idaho Falls, Idaho	Discuss problems associated with shipment of "J" slugs	W. A. Erickson D. G. Reid A. A. Ohlgren	9-24-51	9-24-51	X		
MANUFACTURING TRANSPORTATION							
I. Visitors to this Works							
J. W. Guimond Modern Machinery Company Spokane, Washington	Service new rock crusher	A. P. Mitchell	9-10-51	9-12-51		X	White Bluffs

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
F. D. Robinson Modern Machinery Company Spokane, Washington	Service new rock crusher	A. P. Mitchell	9-10-51	9-12-51		X	White Bluffs
MANUFACTURING MANAGEMENT							
I. Visits to other Installations							
W. M. Mathis to: Westinghouse Electric Corp Pittsburgh, Pennsylvania	Examine slugs on special irradiation	W. E. Johnson	9-12-51	9-14-51	X		
MANAGEMENT							
I. Visitors to this Works							
R. J. Cordiner General Electric Company Schenectady, New York	Consultation on overall Hanford program	G. R. Prout	9-8 -51	9-12-51	X		All Areas- All Bldgs.
C. H. Lang General Electric Company Schenectady, New York	Consultation on overall Hanford program	G. R. Prout	9-8-51	9-12-51	X		All Areas All Bldgs.
D. L. Millham General Electric Company Schenectady, New York	Consultation on overall Hanford program	G. R. Prout	9-8-51	9-12-51	X		All Areas All Bldgs.
H. A. Wimmo General Electric Company Schenectaly, New York	Consultation on overall Hanford program	G. R. Prout	9-8-51	9-12-51	X		All Areas All Bldgs.
B. S. Havens Knolls Atomic Power Lab. Schenectady, New York	Advertising and publicity	G. R. Prout	9-11-51	9-12-51	X		700
PURCHASING AND STORES SECTION							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
I. Visitors to this Works							
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver material on order HW 85381	W. H.Sutton	9-4-51	9-4-51		X	100-D 105
B. V. Brown Inland Motor Freight Kennewick, Washington	Deliver material on order HW 84417	W. H. Sutton	9-5-51	9-5-51		X	202-S
	Deliver material on order G-395	W. H. Sutton	9-12-51	9-12-51		X	100-D XXX
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order HW 84417	W. H. Sutton	9-5-51	9-5-51		X	202-S
	Deliver material on order HW 84417		9-12-51	9-12-51		X	100-F 105
	Deliver material on order HW 83029-M		9-12-51	9-12-51		X	100-B 105 100-D 105
	Deliver material on order HW 83029-M		9-18-51	9-18-51		X	100-D 105
	Deliver material on order HW 83029-M		9-19-51	9-19-51		X	100-F 105
	Deliver material on order HW 83029-M		9-26-51	9-26-51		X	100-B 105
W. Weigand Lee & Estes Kennewick, Washington	Deliver material on order HW 84412	W. H. Sutton	9-5-51	9-5-51		X	100-D 189
	Deliver material on order HW 84412		9-6-51	9-6-51		X	100-H 189 100-D 189
	Deliver material on order HW 84412		9-7-51	9-7-51		X	202-S
C. Freauff Lee & Estes Kennewick, Washington	Deliver material on order HW 12441	W. H. Sutton	9-10-51	9-10-51		X	100-D 189
R. Bagby West Coast Fast Freight Yakima, Washington	Deliver material on order HW 84418	W. H. Sutton	9-10-51	9-10-51		X	200-E 271-B
	Deliver material on HW 84418		9-12-51	9-12-51		X	200-E 271-B

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
L. Wilson Lee & Estes Kennewick, Washington	Deliver material on order HW 75251	W. H. Sutton	9-12-51	9-12-51		X	300 303-J
F. F. Smith Inland Motor Freight Kennewick, Washington	Deliver material on order HWC 10583	W. H. Sutton	9-18-51	9-18-51		X	White Bluffs
G. Fuson Consolidated Eng. Corp. Pasadena, California	Service check of mass spectrometer	G. J. Hayward	9-24-51	10-1-51		X	100-B 108
R. L.Tower Eastern Industries, Inc. Mercer Island, Washington	Supervise agitator run-in test	G. J. Hayward	9-4-51	9-18-51		X	200-W 277-U, 241-UR, 244-UR
L. Pemberthy Pemberthy Instrument Company Seattle, Washington	Discuss drawings	C. Franz	9-4-51	9-4-51		X	300 XXX
H. F. Eidson Rockwood Sprinkler Co. Los Angeles, California	Supervise placing system in operating condition	G. J. Hayward	9-5-51	9-9-51		X	200-W 276-S
J. D. Weaver Whiting Corporation Harvey, Illinois	Inspect Whiting Crane	G. J. Hayward	9-10-51	9-14-51		X	200-W 202-S
R. H. Sommers Hovi-Duty Electric Milwaukee, Wisconsin	Supervise installation of furnaces	G. J. Hayward	9-1-51	9-14-51		X	MJ5 Whse. 224-U
H. A. Wilcox Eastern Industries Inc. Mercer Island, Washington	Supervise agitator run-in tests	G. J. Hayward	9-1-51	10-1-51		X	241-UR 244-UR

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
II. Visits to other Installations							
J. C. Hamilton to: Puget Sound Navy Shipyard Bremerton, Washington	Expediting and inspection	S. L. Allison W. L. Horner	9-10-51	9-10-51	X		
C. P. Fleming to: Puget Sound Navy Shipyard Bremerton, Washington	Expediting and inspection	S. L. Allison W. L. Horner	9-10-51	9-10-51	X		
J. C. Hamilton to: Western Gear Works Seattle, Washington	Inspect material on order	Mr. Forsythe	9-11-51	9-11-51		X	
C. P. Fleming to: Western Gear Works Seattle, Washington	Inspect material on order	Mr. Forsythe	9-11-51	9-11-51		X	
C. P. Lawson to: Stearns Rogers Mfg. Denver, Colorado	Expediting	Mr. Rosengren	9-24-51	9-24-51		X	
C. P. Lawson to: Johnston Pump Company Pasadena, California	Expediting	P. Brown	9-25-51	9-26-51		X	
C. P. Lawson to: Byron-Jackson Pump Co. Los Angeles, California	Expediting	Mr. Shanklund	9-26-51	9-26-51		X	
C. P. Lawson to: Oscar Kronz Company Los Angeles, California	Expediting	Mr. Aldridge	9-26-51	9-26-51		X	
R. R. Wall to: Read Standard Erie, Pennsylvania	Proposed work	J. D. Berringer	9-10-51	9-11-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
R. R. Wall to: American Machine & Foundry Buffalo, New York	Discuss V.S. and H. rods	C. M. Graves	9-12-51	9-12-51		X	
R. R. Wall to: E. W. Bliss Company Canton, Ohio	Proposed work	R. Moss	9-13-51	9-13-51		X	
R. R. Wall to: Whiting Corporation Harvey Illinois	Discuss progress of V.S. rod hoist	. . Morton . . C. Rice	9-14-51	9-14-51		X	
L. G. Jones to: A.O. Smith Corp Milwaukee, Wisconsin	Inspection	J. Bock	9-24-51	9-24-51		X	
L. G. Jones to: Crane Company Chicago, Illinois	Inspection	T. M. Weiss	9-25-51	9-25-51		X	
L. G. Jones to: E. W. Bliss Company Canton, Ohio	Inspection	R. Moss	9-26-51	9-26-51		X	
L. G. Jones to: Wilson Rubber Company Canton, Ohio	Inspection	J. Wilson	9-26-51	9-26-51		X	
L. G. Jones to: General American Trans. Co Sharon, Pennsylvania	Inspection	-	9-27-51	9-27-51		X	
L. G. Jones to: Aluminum Company of America New Konsington, Pennsylvania	Inspection	Mr. Smith	9-28-51	9-28-51		X	
L. G. Jones to; Brooklyn New York	Inspection	Mr. MacPherson	9-29-51	9-30-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
G. H. Wright to: Sta-Hi Corp. Los Angeles, California	Procurment critical material	Mr. Taylor	9-9-51	9-9-51		X	
G. H. Wright to: Western Gear Los Angeles, California	Procurment critical material	Mr. Neimeyer	9-12-51	9-12-51		X	
G. H. Wright to: Pacific Coast Engineers Alameda, California	Procurement critical material	J. Martin	9-13-51	9-13-51		X	
G. H. Wright to: J. M. Gaunlett Co. Seattle, Washington	Procurement critical material	Mr. Gaunlet	9-20-51	9-20-51		X	
R. V. Lawson to: Engineering Company Southgate, California	Placement of order for horizontal rods	J. Toland	9-25-51	9-29-51		X	
R. V. Lawson to: Aloxson Mfg. Co. Los Angeles, California	Placement of order for horizontal rods	W. Clark	9-25-51	9-29-51		X	
R. V. Lawson to: Normandie Honing Co. Torrence, California	Placement of order forhorizontal rods	- -	9-25-51	9-29-51		X	
R. V. Lawson to: Norcapp Mfg. Los Angeles, California	Placement of order for horizontal rods	R. Lightcap	9-25-51	9-29-51		X	
R. V. Lawson to: Coast Centerless Griding Co. Los Angeles, California	Placemnt of order for horizontal rods	R. R. Raite	9-25-51	9-29-51		X	
R. V. Lawson to: Nat'l Supply Co. Torrence Cal.	Placement of order for horizontal rods	T. Racliff	9-25-51	9-29-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
TECHNICAL SECTION							
I. Visitors to this Works							
F. J. Champlin General Engineering Laboratory Schenectady, New York	P-10 consultation	W. M. Harty	9-21-51	9-21-51	X		100-B 108
J. W. Dutli Los Alamos Scientific Lab. Los Alamos, New Mexico	Discuss radiographic problems	B. Woidenbaum A. E. Smith	9-20-51	9-21-51	X		200-W 234, 235
G. E. Fuson Consolidated Engineering Corp. Pasadena, California	Service mass spectrometer	R. J. Brouns H. A. Paulson	9-24-51	9-27-51	X		200-W 222-S 100-B 108
D. E. Gaar General Engineering Laboratory Schenectady, New York	Attend conference and inspect equipment supplied by GEL	G. E. McCullough P. H. Reinker M. W. Carbon E. A. Smith	9-25-51	9-29-51	X		300 303, 313 101 100-H 105
L. G. Gitzendanner General Engineering Laboratory Schenectady, New York	Attend conference and inspect equipment supplied by GEL	G. E. McCullough P. H. Reinker M. W. Carbon E. A. Smith	9-25-51	9-29-51	X		300 303, 313 101 100-H 105
D. E. Garr General Engineering Laboratory Schenectady, New York	Attend conferences and inspect equipment	V. D. Nixon	9-25-51	9-29-51	X		100-D 105 100-H 105 300 303,
L. G. Gitzendanner General Engineering Laboratory Schenectady, New York	Attend conferences and inspect equipment	V. D. Nixon	9-25-51	9-29-51	X		100-D 105 100-H 105 300 303,
C. C. Harris E. I. du Pont de Nemours & Co. Wilmington, Delaware	P-10 consultation	W. M. Harty	9-26-51	9-27-51	X		100-B 108

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
W. A. Hartman General Engineering Laboratory Schenectady, New York	P-10 consultation	W. M. Harty	9-21-51	9-21-51	X		100-B 108
C. G. Kruse International Bus. Machines Richland, Washington	Service IBM equipment	P. M. Thompson	9-1-51	10-1-51		X	300 3707-C
H. C. Mattraw Knolls Atomic Power Laboratory Schenectady, New York	P-10 consultation and attend conferences and inspect equipment, particularly new mass spectrometer installed	G. J. Alkire R. J. Brouns W. M. Harty (P-10)	9-21-51	9-28-51	X		100-B 108,105 300 3706
M. E. Norvy International Bus. Machines Richland, Washington	Service IBM equipment	P. M. Thompson	9-1-51	10-1-51		X	300 3707-C
T. O'Regan General Engineering Laboratory Schenectady, New York	P-10 consultation	W. M. Harty	9-21-51	9-21-51	X		100-B 108
J. T. Patnovik E. I. du Pont de Nemours & Co. Wilmington, Delaware	P-10 consultation	W. M. Harty	9-26-51	9-27-51	X		100-B 108
R. C. Warren International Bus. Machines Richland, Washington	Service IBM equipment	P. M. Thompson	9-1-51	10-1-51		X	300 3707-C
II. Visits to other Installations							
J. H. Bach to: Westinghouse Atomic Power Bettis Field, Pennsylvania	Metallurgical consultation on zirconium Div. program	W. A. Johnson	9-4-51	9-7-51	X		

1217321

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
J. H. Bach to: Sylvania Electric Products Metallurgical Laboratory Bayside, New York	Uranium consultation	H. H. Hausner	9-10-51	9-11-51	X		
J. H. Bach to: Argonne National Lab. Chicago, Illinois	Discussion of zirconium program	F. Foote R. A. Noland J. Shurar	9-11-51	9-13-51	X		
B. W. Borgnior to: U. S. Atomic Energy Com. Oak Ridge, Tennessee	Discuss mutual problems of technical information organization	A. G. Greene	9-9-51	9-14-51	X		
V. R. Cooper to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Discuss process problem at DF-West	R. D. Baker	9-10-51	9-12-51	X		
M. H. Curtis to: Knolls Atomic Power Lab. Schenectady, New York	Laboratory facilities discussion	B. V. Coplan	9-7-51	9-7-51	X		
D. E. Davenport to: North American Aviation Downey, California	Conference on pile physics	S. Siegel	10-11-51	10-13-51	X		
W. R. DeHollander to: Knolls Atomic Power Lab. Schenectady, New York	I-10 consultation	D. H. Ahmann	9-3-51	9-15-51	X		
E. Doud to: Knolls Atomic Power Lab. Schenectady, New York	Hot semi-works discussions	E. J. Rebar B. V. Coplan	9-7-51	9-8-51	X		
E. Doud to: Oak Ridge National Lab. Oak Ridge, Tennessee	Hot semi-works discussions	F. L. Steahly H. K. Jackson A. C. Jealous	9-10-51	9-11-51	X		

1217322

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
W. S. Figg to: Argonne National Lab. Chicago, Illinois	Inspect hot operations facilities	H. L. Hull	9-17-51	9-18-51	X		
W. S. Figg to: Knolls Atomic Power Lab. Schenectady, New York	Inspect hot operations facilities	E. Zebroski	9-19-51	9-19-51	X		
W. S. Figg to: Brookhaven National Lab. Upton, Long Island, New York	Inspect hot operations facilities	A. G. Stang	9-20-51	9-21-51	X		
F. F. Gast to: U. S. Atomic Energy Comm. New York, New York	Conference on pile poison	V. L. Parsegian	9-10-51	9-10-51	X		
T. W. Hauff to: Knolls Atomic Power Lab. Schenectady, New York	Inspect and discuss laboratory facilities and technical services e.g.-mechanical shops	E. B. Haines	9-17-51	9-19-51	X		
T. W. Hauff to: Argonne National Lab. Chicago, Illinois	Inspect and discuss laboratory facilities with reference to new buildings and remote handling equipment	N. H. Hilborry	9-19-51	9-20-51	X		
W. T. Kattner to: Simonds Saw & Steel Buffalo, New York	Observe metal fabrication	Mr. A. D. Potts	9-17-51	9-18-51	X		
W. T. Kattner to: Alloghony Ludlum Albany, New York	Observe special metal fabrication	Plant Manager	9-18-51	9-19-51	X		
W. T. Kattner to: Knolls Atomic Power Lab. Schenectady, New York	Discuss metal fabrication and related problems	C. E. Lacy	9-19-51	9-21-51	X		

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1211323

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
W. T. Kattner to: Simonds Saw & Steel Buffalo, New York	Observe metal fabrication	A. D. Potts	9-21-51	9-21-51	X		
W. T. Kattner to: Alloghony Ludlum Albany, New York	Observe special metal fabrication	Plant Manager	9-21-51	9-21-51	X		
W. T. Kattner to: U. S. Atomic Energy Comm. New York, New York	Discuss metal fabrication and related problems	W. Kelly R. J. Smith	9-21-51	9-21-51	X		
W. T. Kattner to: Knolls Atomic Power Lab. Schonectady, New York	Discuss metal fabrication and related problems	C. E. Lacy	9-24-51	9-26-51	X		
W. T. Kattner to: U. S. Atomic Energy Comm. New York, New York	Discuss metal fabrication and related problems	W. Kelly R. J. Smith	9-24-51	9-26-51	X		
R. H. Loyse to: General Engineering Lab. Schonectady, New York	Follow shop construction of Project C-410	L. E. Weber R. E. Cumrow	7-14-51	10-19-51	X		
R. H. Loyse to: Knolls Atomic Power Lab. Schonectady, New York	Discuss in-pile experiments	C. D. Carroll	7-14-51	10-19-51	X		
G. E. McCullough to: Westinghouse Electric Corp. Bettis Field, Pennsylvania	Examine slugs. General irradiation discussion	W. E. Johnson	9-12-51	9-14-51	X		
T. G. Marshall to: Knolls Atomic Power Lab. Schonectady, New York	Hanford-KAPL liaison	W. H. Milton	9-4-51	9-6-51	X		
R. E. Nather to: Radiation Lab., Berkeley, Cal.	Consultation on special irradiation	S. G. Thompson	9-20-51	9-21-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
D. I. O'Keefe to: Westinghouse Atomic Power Bettis Field, PennsylvaniaDiv.	Metallurgical examination of normally discharged slugs	W. E. Johnson	9-4-51	9-10-51	X		
W. J. Ozeroff to: North American Aviation Downey, California	Conference on pile physics	S. Siegel	10-11-51	10-13-51	X		
D. W. Pearce to: Knolls Atomic Power Lab. Schenectady, New York	Inspection on KAPL assistance to Hanford	C. Mannal	9-10-51	9-14-51	X		
R. B. Richards to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Discussion of process problem at DP-West	R. D. Baker	9-10-51	9-12-51	X		
J. W. Riches to: Simonds Saw & Steel Buffalo, New York	Observe metal fabrication	A. D. Potts	9-17-51	9-18-51	X		
J. W. Riches to: Alleghony Ludlum Albany, NewYork	Observe special metal fabrication	Plant Manager Plant Manager	9-18-51 9-21-51	9-19-51 9-21-51	X X		
J. W. Riches to: Knolls Atomic Power Lab. Schenectady, New York	Discuss metal fabrication and related problems	C. E. Lacy C. E. Lacy	9-19-51 9-24-51	9-21-51 9-26-51	X X		
J. W. Riches to: U. S. Atomic Energy Comm. New York, New York	Discuss metal fabrication and related problems	W. Kelly R. J. Smith	9-21-51 9-24-51	9-21-51 9-26-51	X X		
J. W. Riches to: Argonne National Lab. Chicago, Illinois	Discuss metal fabrication and related subjects	F. Foote J. Shumer	9-27-51	9-28-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. W. Riches to: Bethlehem Steel Lackawanna, New York	Observe special metal fabrication	Mr. Henderson	9-30-51	9-30-51	X		
J. F. Sullivan, Jr. to: General Engineering Lab. Schenectady, New York	P-10 consultation	H. W. Housman	9-17-51	9-21-51	X		
L. D. Turner to: Westinghouse Atomic Power Bettis Field, Pennsylvania Div.	Metallurgical examination of normally discharged slugs	W. E. Johnson	9-7-51	9-7-51	X		
L. D. Turner to: Knolls Atomic Power Lab. Schenectady, New York	Metallurgical discussions of hot cell work	R.H. Horton	9-10-51	9-11-51	X		
L. D. Turner to: Argonne National Lab. Chicago, Illinois	Metallurgical discussions of hot cell work	S.E. Paine, Jr.	9-13-51	9-14-51	X		
B. Weidenbaum to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Discussion of process problem at DP-West	R. D. Baker	9-10-51	9-12-51	X		
L. F. Kendall to: General Engineering Lab Schenectady, New York	Discuss re-design of of X-ray photometer	T. A. Rich	9-6-51	9-6-51		X	
L. F. Kendall to. Leeds & Northrup Philadelphia, Pennsylvania	Discuss emission spectrometer	R. C. Machor	9-6-51	9-7-51		X	
E. W. Rebol to: General Electric Company Fort Wayne, Indiana	Inspection of laboratories	C. Sumner	9-10-51	9-10-51		X	

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240

1217326

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. Rebol to: General Electric Co. Coschocton, Ohio	Inspection of laboratories	J. J. Pyle	9-11-51	9-11-51		X	
E. W. Rebol to: General Electric Co. Oak Ridge, Tennessee	Inspection of laboratories	R. C. Mark	9-12-51	9-13-51		X	
E. W. Rebol to: General Electric Co. Louisville, Kentucky	Inspection of laboratories	E. M. Boddy	9-14-51	9-14-51		X	
E. W. Rebol to: General Electric Co. Erie, Pennsylvania	Inspection of laboratories	W. Maucher	9-17-51	9-17-51		X	
J. Dunn to; Johnston Pump Company Los Angeles, California	Inspect pump development	- -	9-4-51	9-6-51		X	
B. Weidenbaum to; Dow Chemical Company Denver, Colorado	Plant design consultation	R. Harrison	9-13-51	9-14-51		X	

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211

1211327

PURCHASING AND STORES SECTION
UTILITIES AND GENERAL SERVICES DEPARTMENT
SUMMARY - SEPTEMBER 1951

Personnel of the Purchasing and Stores Section showed a net increase of two as noted below:

	TOTAL PERSONNEL		
	8-31-51	9-30-51	Net Change
Exempt	85	87	+2
Non-Exempt	321	321	0
	406	408*	+2

* Not included on our rolls: One Trainee

Approval for our first toll agreement was received from National Production Authority. This approval will permit shipment of our obsolete aluminum cans to the Aluminum Company of America and enable the Aluminum Company to meet our urgent requirements for a newly designed can.

The first authorization to apply the recently created DX priority rating advanced delivery of an order for control instruments from an indefinite promise to October 27, 1951.

The availability of materials and manufacturing facilities is more critical and special items fabricated to our design are becoming more difficult to place on order. All attempts through normal procedures to place orders for the 36" shield plug and subassemblies for horizontal rods resulted in "no-bids". Personal visits to prospective fabricators were required to place these items on order.

The charge of $1,311.10 for cancellation of orders for Part "B" of Project C-361 was reduced to $1,216.70 due to sale of scrap. Of the three remaining orders on which charges were pending, two were processed without charge, and on the third order the material had been shipped prior to receipt of our request for cancellation.

An experimental order of 100 pounds of copper "scalpings" has been purchased in an effort to develop a substitute for the present 22 pound ingot which must be sawed into smaller pieces before it can be used. If this experiment is successful, it will result in savings in both material and labor on this item.

The A.E.C. has arranged with the Bureau of Mines to reclaim and return the tin from a considerable stock of copper-tin alloy scrap which has accumulated in the 300 Area. This practice will be started if the N.P.A. will approve our carrying the additional inventory. An answer is expected soon.

New contracts have been negotiated for the following essential materials:

1. Ferrous Ammonium Sulphate - General Chemical Division, Allied Chemical & Dye Corporation
2. Sulfamic Acid - Van Waters & Rogers, Inc.

The general outlook of the material and fabrication picture is not improving from a delivery standpoint. It becomes more difficult each month to develop delivery promises or production schedules in any of the major fabricating plants or from the suppliers. This condition is the result of plant overloads and no immediate relief is in sight. Accordingly, all orders should be placed as soon as possible as the necessity for priority assistance is increasing.

1217328

PURCHASING AND STORES SECTION
SUMMARY

A request was received from the Hoffman Company, Hot Semi-Works Subcontractor, through the Project Engineering Unit for expediting and inspection assistance on a number of their sub-vendors for their sub-sub Bay Company. The policy of assisting lump-sum sub-contractors was cleared through Management, and Expediting is making attempts to expedite a number of highly critical orders for Bay Company.

2110 purchase requisitions were processed through screening and 1112 items were furnished from plant sources. Thirty items of stainless steel not immediately available on the open market were furnished to fabricators from plant inventories.

During the month, eight formal excess lists totaling $12,712.45 were submitted to the Commission for disposition. Excess materials and equipment valued at $129,439.88 were shipped from the Project. In addition to the foregoing, barracks, furniture, etc., valued at $5,968,553.20 were transferred to the Army (Camp Hanford) as directed by the Commission.

During the month the accountability and custody of Account 10.14 (Special Material) valued at $3,139,033.82 was transferred to the Reactor Unit.

A request was submitted to the Pullman Company for a reduction of Pasco Pullman fares to the same basis as the through fares in effect at Spokane and Pendleton. As a result of this action Pullman fares between Pasco and such points as Washington, D.C., Boston and New York City were reduced up to 10%. This will effect a savings not only for General Electric employees traveling on company business but for all persons in the Tri-City area who travel by Pullman at Pasco.

1217329

PURCHASING AND STORES SECTION
STAFF
SEPTEMBER 1951

Approval for our first toll agreement was received from National Production Authority. This approval will permit shipment of our obsolete aluminum cans to Aluminum Company of America and enable the Aluminum Company to meet our urgent requirements for a newly designed can.

Our first authorization to apply the recently created DX priority rating advanced delivery of an order for control instruments from an indefinite promise to October 27, 1951.

Inventory exemption was requested for Hanford Works lead inventories. Lead has been placed under allocation by NPA and our request for an allotment of lead has gone forward to NPA.

Fifteen requests for NPA Directives were received. One request for assistance in obtaining production equipment for a supplier was received.

One investigation and submission of data for Certificate of Necessity was completed. Four ceiling price determinations on specific items were issued.

Two supplemental allotments: 15,000 lbs. of copper wire mill products and 20,000 lbs. of brass mill products were requested and obtained.

The Remington-Rand Chindex Card system has been installed in Caption 903-11. All record balances have been transferred to the new Chaindex Master Card.

PERSONNEL

	As of 8-31-51			As of 9-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Staff	3	3	6	4	3	7	+1	0	+1
Priorities & Allocations	1	14	15	1	12	13	0	-2	-2
Inventory-Audits	2	10	12	2	10	12	0	0	0
Office Services	1	28	29	2	28	30	+1	0	+1
	7	55	62	9	53	62	+2	-2	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of employees attending	54

STATISTICS

The following schedule reflects September allotments received and allotments used or extended to suppliers and subcontractors during September. Top figures under each item number indicate allotment received from the Atomic Energy Commission. Lower figures under each item number reflect material allotment used or allotted for the quarter indicated:

1217330

PURCHASING AND STORES SECTION
STAFF

STATISTICS (Cont.)

OPERATIONS

Controlled Material	Unit Measure	3rd Quarter 1951	4th Quarter 1951	1st Quarter 1952	2nd Quarter 1952
Carbon Steel (Including Wrought Iron)	Short	53.00	103.00	75.00	90.00
	Tons	42.64	31.11	8.08	0
Alloy Steel (Excluding Stainless Steel)	Short	2.00	6.00	27.00	14.00
	Tons	1.16	.50	.50	0
Stainless Steel		14,800	102,862	85,000	75,000
	Lbs.	8,060	5,304	1,123	0
Copper & Copper Base Alloy Brass Mill Products		10,000	25,993	20,000	12,006
	Lbs.	9,333	2,589	3,013	0
Copper Wire Mill Prod.		9,000	21,646	21,646	10,000
	Lbs.	8,127	5,152	2,656	0
Copper; Copper Base Alloy; Foundry Products; Powder		500	3,980	4,000	2,100
	Lbs.	0	0	0	0
Aluminum		248,000	373,800	214,500	173,452
	Lbs.	193,998	234,114	132,687	0

CONSTRUCTION

Carbon Steel (Including Wrought Iron)	Short	7,000.00			
	Tons	6,803.98			
Plate	Short		8,500.00	476.00	10.00
	Tons		8,279.87	302.13	0
Structural Shapes	Short		2,482.00	729.00	34.00
	Tons		642.69	26.00	0
Other Carbon Steel	Short		4,881.00	1,766.00	539.00
	Tons		1,832.39	184.94	25.00
Alloy Steel (Excluding Stainless Steel)	Short	25.00	15.00	9.00	12.00
	Tons	13.04	6.05	1.11	0
Stainless Steel		583,200	759,438	217,900	25,000
	Lbs.	554,838	213,894	79,509	0
Copper & Copper Base Alloy Brass Mill Products		39,000	71,025	29,914	2,000
	Lbs.	35,157	7,310	14,001	1
Copper Wire Mill Prod.		85,000	165,680	47,296	10,448
	Lbs.	82,757	87,122	39,238	0
Copper; Copper Base Alloy; Foundry Products; Powder		4,500	8,000	3,500	1,200
	Lbs.	3,755	1,560	100	0
Aluminum		41,000	100,000	2,500	5,000
	Lbs.	40,891	83,877	2,160	0

1217331

PURCHASING AND STORES SECTION
STAFF

STATISTICS (Cont.)

	G	D	Total
Requisitions on hand 9-1-51 (includes 158 assigned to Gov't.)	691	380	1071
Requisitions assigned during September	1590	687	2277
Requisitions placed during September	1690	754	2444
Requisitions on hand 9-30-51 (includes 77 assigned to Gov't.)	591	313	904

		NUMBER	VALUE
H. W. Orders Placed		1206	$ 662,985.62
H. W. Alterations Placed		137	8,877.23
	Total	1343	$ 671,862.85
H. W. C. Orders Placed		608	$1,162,070.88
H. W. C. Alterations Placed		147	62,100.61
	Total	755	$1,224,171.49
A. E. C. Orders Placed		120	$ 137,452.58
D. C. Orders Placed		33	46,774.70
	Total	153	184,227.28

	OR	ORC
Gov't. Transfers	0	0

	NUMBER
Return Orders Issued	132

1217332

PURCHASING AND STORES SECTION
CONSTRUCTION PROCUREMENT UNIT
SEPTEMBER 1951

The availability of materials and manufacturing facilities were more critical and special items fabricated to our design became increasingly more difficult to place on order. All attempts through normal procedures to place orders for the 36" shield plug and subassemblies for horizontal rods resulted in "no-bids". Personal visits out of town by members of the Construction Procurement Unit resulted in orders for these two items being placed with J. M. Gauntlett Co., Inc. of Seattle and Coast Centerless Grinding Co. of Los Angeles, respectively.

The charge of $1,311.10 reported last month on the cancellation of Part "B" of Project C-361 was reduced to $1,216.70 as a result of the sale of scrap. Of the three remaining orders on which charges were pending, two were processed without charge, and on the third order the material had been shipped prior to receipt of our request for cancellation.

Arrangements were completed, whereby our order HWC-9580 AJ with the Vulcan Copper and Supply Company would be terminated with payment to Vulcan for all fabrication and engineering work performed prior to the work stoppage caused by a strike at the Vulcan Plant. During the strike our order was removed from the Vulcan Plant, and with their concurrance the completion of the work was to be done by the Foster-Wheeler Corp. as a sub-contractor to Vulcan. Subsequent developments showed that better control and more efficient accounting, expediting and inspecting could be maintained by our closing out the Vulcan order and negotiating another order direct with Foster-Wheeler.

An offer of $1,617.36 was made to Stainless Engineering and Equipment Corp. as a negotiated settlement of their claims for cancellation charges on our orders HWC-8960 AJ and HWC-9045 AJ. The claims originally submitted by Stainless were based upon unacceptable formula computations. Our offer of a negotiated settlement, with the concurrance of the Commission, was made only after our attempts had failed to secure a properly presented and supported claim.

PERSONNEL:

As of 8-31-51			As of 9-30-51			NET CHANGE		
Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
9	11	20	9	10	19	0	-1	-1

SAFETY AND SECURITY:

Safety and Security Meetings - - 1

Number of Employees Attending - - 17

1217333

October 8, 1951

PURCHASING AND STORES SECTION

OPERATIONS PROCUREMENT UNIT

SEPTEMBER - 1951

New contracts have been negotiated for essential materials as follows:

1. Ferric Sulphate - Stauffer Chemical Company
2. Hydrated Lime - U. S. Gypsum Company
3. Liquid Chlorine - Hooker Electrochemical Company

Bids have been requested for our requirements for the following essential materials for the next twelve months:

1. Tributyl Sulphate
2. Sodium Dichromate

An experimental order of 100 pounds of copper "scalpings" has been purchased in an effort to develop a substitute for the present 22 pounds ingot, which must be sawed into smaller pieces before it can be used. If this experiment is successful, it will result in savings in both material and labor on this item.

Aluminum Nitrate Nonahydrate deliveries are continuing on the basis of two tank trucks daily. We have furnished, temporarily, a nitric acid tank car to General Chemical for service between duPont, Washington and Hedges, Washington, which will enable them to receive raw materials fast enough to meet this accelerated delivery schedule. They have no problem with alumina.

Copper-tin alloy scrap, a considerable stock of which has been accumulated in the 300 Area, has been the subject of an arrangement made by the Atomic Energy Commission with the Bureau of Mines, Department of Interior, Albany, Oregon. The tin will be reclaimed and returned to us, if NPA approval can be obtained to permit us to carry the additional inventory. This is being followed and an answer should be forthcoming within the near future.

During the month it was decided by Metal Preparations Section to begin a program for using 9½ inch cans, with corresponding caps and steel sleeves. These will probably replace our standard 4 inch cans almost entirely. Alcoa has assured us that they can produce, in time to meet requirements, both cans and extruded caps, provided that raw material is supplied. In lieu of an NPA directive to furnish material on this short notice and make it available for fabrication, we secured NPA approval of a toll agreement which involves shipment of 180,000 obsolete 9 inch cans to its plant in Vancouver, Washington. These will be melted and we will receive credit at 16¼ cents per pound, in addition to credit for the metal pound for pound. The steel sleeves for use with these

1217334

PURCHASING AND STORES SECTION

OPERATIONS PROCUREMENT UNIT

long cans will be provided by General Machinery Company, Spokane, on the basis of a change in their existing order, originally written for short sleeves.

During the month, the Power Division transferred all lump coal and chemicals, which had been held in inventory at 101 Area, to Engineering and Construction. This will mean that these items will no longer be accounted for by this unit and any procurement will be handled as requisitions received from the field in the usual manner.

Personnel

As of 8-31-51			As of 9-30-51			Net Change		
Ex.	Non.-Ex.	Total	Ex.	Non.-Ex.	Total	Ex.	Non.-Ex.	Total
8	16	24	8	15	23	0	-1	-1

Safety & Security

Safety and Security meetings scheduled

Number of employees attending - 24

1217335

PURCHASING AND STORES SECTION
INSPECTION AND EXPEDITING UNIT
SEPTEMBER 1951

The general trend of the month was the transition of major work load from Separations Divisions orders to C-431-A and B orders. To aid in accomplishing this transition and to realign the work load for more effective coverage, the Inspection Supervisor made a trip east to visit all east coast and mid-west Inspectors.

The vendor producing "Third Safety Units" for existing reactors was visited and discussions resulting in design changes to facilitate production were successfully concluded. The vendor producing the horizontal and vertical safety rods for C-431-A was visited, at which time it was determined that the vendor had not intended nor had the capacity to machine the boron stainless steel castings. A sub-vendor was located to do this work provided we could furnish machining characteristics of the material. This information is being obtained.

The first two shipments of "B" Blocks from Bremerton Navy Yard were made during the month. It is pointed out that the blocks shipped were least complicated of all blocks to fabricate and many problems will have to be solved before a satisfactory production rate can be established. Fabrication is approximately six weeks behind the anticipated schedule. These blocks may become a limiting item in the Reactor Program. However, none of the delays encountered were due to General Electric purchased materials.

The field is reviewing their construction schedule for TBP to establish deadline dates. Until these dates are established we will not know if a schedule obtained from the suppliers of connectors and pumps, which appear to be limiting items, will be satisfactory. Valves for the TBP Project also appear critical. We are expediting castings to the vendor and have authorized the use of overtime to obtain delivery as soon as possible. A definite delivery date will be established the week of October 8.

Two of the most critical orders for the C-431 Project are the Fluid Drive Units, and Vertical and Horizontal Rods. A directive was requested for the Fluid Drive Units. The fabricator of Vertical and Horizontal Rods is just now in the process of completing their Bill of Material and ordering material from outside sources. Until dates have been established for delivery of material from their suppliers, we will not be able to arrive at a firm shipping schedule for the completed units.

Limiting items that probably will effect the Water Plant completion are materials for the Filter Plant. Numerous design changes have been made on this order, thus keeping the various suppliers from placing orders for materials and establishing shipping schedules.

PERSONNEL

	As of 8-31-51			As of 9-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Inspection	31	24	55	32	22	54	+1	-2	-1
Expediting	14	12	26	13	11	24	-1	-1	-2
	45	36	81	45	33	78	0	-3	-3

1217336

PURCHASING AND STORES SECTION
INSPECTION AND EXPEDITING UNIT
SEPTEMBER 1951

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	2
Number of Employees Attending Each Meeting	35

STATISTICS:

Inspection

Number of open orders requiring inspection	360
Number of open orders being inspected	341
Number of new orders requiring inspection	31
Number of open requisitions requiring inspection	108
Number of completed orders (cancelled, waived)	203
Number of open orders requiring inspection - sub-vendor	28
Number of open orders being inspected - sub-vendor	22
Number of completed orders - sub-vendor	0

Expediting

HW Orders expedited in September (active)	493
HW Orders expedited in September (routine)	947
HWC Orders expedited in September	1430
Sub-vendor Orders expedited in September	2250*
HW Orders completed in September	900
HWC Orders completed in September	584

*Estimated

1217337

PURCHASING AND STORES SECTION
STORES UNIT
SEPTEMBER, 1951

GENERAL

2110 purchase requisitions were processed through screening and 1112 items were furnished from plant sources. 30 items of stainless steel not immediately available on open market were furnished to fabricators from plant inventories.

Maintenance materials and supplies disbursed from operations' inventories were valued at $305,561.43. This represents the highest withdrawal valuation of Stores materials since 1948.

Materials and equipment valued at $177,019.40 from 19 captions in the 10.20 Account (Construction Held Materials) were disbursed to construction forces during the month. In addition to the foregoing, materials valued at $17,958.21 were withdrawn for use by operations forces and materials valued at $111,830.67 were declared excess.

Materials and equipment valued at $65,493.87 were withdrawn from the 10.10 Account (Excess) for use on the Project. Of this amount, construction forces' withdrawals were valued at $59,823.05.

During the month, eight formal excess lists totaling $13,712.45 were submitted to the Commission for disposition. Excess materials and equipment valued at $129,439.88 were shipped from the Project. In addition to the foregoing, barracks, furniture, etc. valued at $5,968,553.20 were transferred to the Army (Camp Hanford) as directed by the Commission. Scrap sales revenue for the month amounted to $3,162.96.

33 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the sale of scrap and transfer of excess property.

Two salvage sales were completed during the month and two sales are now in process.

During the month, the accountability and custody of Account 10.14 (Special Material) valued at $3,139,033.82 was transferred to the Reactor Unit.

PERSONNEL

	As of 8-31-51			As of 9-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	6		6	6		6			
Construction Materials	1	28	29	1	27	28	- 1		- 1
Operations Materials	4	122	126	4	126	130	+ 4		+ 4
Surplus, Salvage & Scrap Materials	3	45	48	3	50	53	+ 5		+ 5
TOTALS	14	195	209	14	203	217	+ 8		+ 8

1217239

PURCHASING AND STORES SECTION
STORES UNIT

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	12
Number of Employees Attending	199
Minor Injuries	4

STATISTICS

Construction Materials	
Items in Stores Stock	44,134
Items Added to Stock	541
Items Completely Liquidated from Stock	1,477
Store Orders Posted (Items)	2,342
Number of Requisitions Screened - A.J.	614
Number of Items Screened	4,688
Number of Items Furnished from Stock	665
Value of Disbursements	$194,977.61*
Inventory Valuation at Month End - Materials	1,613,151.57
Value of Materials Received	38,327.89
Value of Materials Declared Excess	111,830.67
*Includes $177,019.40 disbursed to Construction and CPFF Subcontractors	
17,958.21 disbursed to Operations forces	
Operations Materials	
Number of Items Added to Stores Stock	339
Items in Stores Stock at Month End	48,892
Store Orders Posted	21,586
Number of Requisitions Screened this month - G.E.	1,496
Number of Items Furnished from Plant Sources This Month	447
Inventory Valuation at Month End (903-All Captions, 906 & 912)	$1,507,012.39
Inventory Valuation at Month End (Spare Parts)	1,323,937.48
Inventory Valuation at Month End (Spare Equipment Held in Storage)	220,826.65
Total Value Inventory Accounts	3,051,776.52
Value of Disbursements, not including Cash Sale Items	303,385.52*
Value of Cash Sales	528.19
Value of Sales, Payroll Deduction	1,647.72
Value of Materials Declared Excess	1,612.15
Value of Materials Returned to Stores Stock for Credit	5,943.45
*Includes $51,232.27 disbursed to Construction and CPFF Subcontractors	
Surplus, Salvage & Scrap Materials	
Balance of Account 10.10 as of 8-31-51	$5,136,317.90
Receipts 8-31-51 to 9-30-51	
Automotive Equipment 4,640.33	
Office Furniture 75.00	
Material and Supplies 125,514.52	
Miscellaneous Equipment 4,240.08	
Household Furniture & Equ't. 5,964,638.49	
Machine Tools and Equipment 3,004.39	6,102,112.81
Adjustments - Classes and Current Market Prices	cr. 17,528.66
	$11,220,902.05

1217339

HW-22304-DEL

DECLASSIFIED

PURCHASING AND STORES SECTION
STORES UNIT

STATISTICS (Continued)

Disbursements 8-31-51 to 9-30-51			
On Project			
Lumber	9,939.18		
Machine Tools & Equipment	20,980.05		
Office Furniture	187.18		
Materials and Supplies	27,905.30		
Miscellaneous Equipment	2,447.36		
Automotive Equipment	4,034.80	$ 65,493.87*	
Stores Material Transfers		437.15	
Off Project			
Automotive Equipment	107,842.96		
Material and Supplies	5,654.51		
Miscellaneous Equipment	10,490.73		
Machine Tools & Equipment	4,587.68		
Household Furniture & Equ't.	5,969,417.20	6,097,993.08	6,163,924.10
Balance of Account 10.10 as of 9-30-51			$5,056,977.95

*Includes $59,823.05 disbursed to Construction and CPFF subcontractors

Total Receipts to Date		$42,108,579.10
Total Disbursements to Date		$37,051,601.15
Scrap and Salvage Disbursed		
Scrap Sales Completed	1	
Scrap Sales in Process	3	
Scrap Sales Revenue for Month of September		$ 3,162.96
Scrap Sales Revenue to Date		$75,855.00

WAREHOUSING, RECEIVING, DISBURSING & SHIPPING

Excess Materials	
Construction Materials	
Store Orders Filled	2,820
Items Excessed	623
Surplus Salvage and Scrap Materials	
Store Orders Filled	652
Excess Items Received	2,917
Items Filled for Shipping	209
Receiving and Shipping	
Receiving	
Receiving Reports Issued	4,612
Shipments Received	4,514
Operations Shipping	
Orders Completed	285
Weight	652,306#
Excess Shipping	
Orders Completed	95

DECLASSIFIED

PURCHASING AND STORES SECTION
STORES UNIT

STATISTICS (Continued)

Weight	1,209,534#
Truckloads of Material Shipped	21
Carloads of Material Shipped	14
Operations Materials	
Store Orders Registered	22,750
Items Received (Receiving Reports)	2,606
Items Received (Material Transfer)	1,314
Emergency Orders	24

CONSTRUCTION STORES

Account No.		Balance 8-31-51	Purchases	Disbursements	Balance 9-30-51
10.16-101	Cement	$ 147.57	52.79	22.30	178.06
10.16-102	Sand, Blasting Sand Gravel	71.50	-0-	-0-	71.50
10.16-103	Plaster, etc.	31.16	-0-	-0-	31.16
10.16-104	Lumber	24,257.29	687.44	4,138.73	20,806.00
10.16-105	Reinforced Steel	12,629.78	-0-	1,958.17	10,671.61
10.16-106	Miscellaneous	34,186.66	8,524.40	3,854.52	38,856.54
10.16-107	Plumbing	78,533.23	5,722.53	2,749.53	81,506.23
10.16-108	Electrical	103,056.76	11,884.19	7,274.50	107,666.45
10.16-109	Vitrified Clay Pipe	2.52	-0-	4.55	Cr. 2.03
10.16-110	Paint, Glass	5,529.99	1,215.17	1,024.32	5,720.84
10.16-111	Welding Rod	3,949.49	2,216.70	1,751.99	4,414.20
10.16-112	Structural Steel	60,354.72	6,568.77	6,529.42	60,394.07
10.16-113	Concrete & Masonry Supplies	171.64	15.55	-0-	187.19
10.16-114	Thermal Insulation	45.99	-0-	-0-	45.99
10.16-115	Roofing Supplies	496.17	2,152.88	21.39	2,627.66
10.16-116	Transformers	1,663.55	-0-	340.01	1,323.54
10.16-118	Automotive	49,638.30	11,247.49	10,393.24	50,492.55
10.16-133	Small Tool Repair Parts	2,010.04	1,401.52	593.93	2,817.63
10.16-134	Clothing	7,208.69	8,440.18	3,027.25	12,621.62
	Total	$383,985.05	$60,129.61	$43,683.85	$400,430.81

121341

PURCHASING & STORES SECTION
TRAFFIC UNIT
September 1951

GENERAL

Effective October 1, 1951, Parcel Post rates will be increased approximately 25%.

A study of through Pullman rates between Pasco, Washington, and many eastern and southern points disclosed that these rates were not competitive with the rates effective at Spokane, Washington, and Pendleton, Oregon. Since practically all travel by rail by General Electric employees originates or terminates at Pasco, we submitted a proposal to the Pullman Company requesting a reduction of the Pasco Pullman fares to the same basis as the through fares in effect at Spokane and Pendleton. This proposal received favorable action and effective October 1, 1951, Pullman fares between Pasco and such points as Washington, D.C., Boston, Massachusetts, Albany and New York City, New York, and Philadelphia, Pennsylvania, were reduced from 6% to 10% and will effect savings not only for General Electric employees traveling on Company business but for all persons in the Tri-City area who travel by Pullman at Pasco, Washington.

Upon advice that approximately 300 tons of excess furnace lining would be shipped from Hanford Works to Savannah River Works at Dunbarton, South Carolina, we advised the Atomic Energy Commission at that location that there was no through rate published on this commodity eastbound and the lowest applicable rate was $2.81 per cwt. It was pointed out that the rate eastbound should not exceed the westbound rate of $1.36 per cwt. As a result of this action the Atomic Energy Commission was able to negotiate a rate of $1.36 per cwt., which was published under TCFB Section 22 Quotation No. 114, effective August 9, 1951. Savings in freight charges to the Government on this movement will amount to approximately $8,700.00.

As a result of rate reductions obtained from the carriers there was a total savings in freight charges for the month of September amounting to $15,432.15. This makes a total savings from September 1, 1946, to date of $1,638,075.03.

PERSONNEL

As of 8-31-51			As of 9-30-51			Net Change	
Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.
2	8	10	2	8	10	0	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Meetings Held	1
Minor Injuries	0

15. 1217342

PURCHASING & STORES SECTION
TRAFFIC UNIT
September 1951

STATISTICS

Savings Report

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for September	Savings 9-1-46 thru August,1951	Total Savings 9-1-46 to date
Coal	Roundup, Mont.	$ 6,454.72		
Lime	Evans, Wash.	24.00		
Phosphoric Acid	South Gate, Cal.	953.05		
Iron Ore	Apex, Mont.	1,134.11		
Salt, Crude	Newark, Cal.	126.71		
Caustic Soda	Tacoma, Wash.	930.49		
Soda Ash	Trona, Cal.	151.50		
Iron or Steel	San Francisco, Cal.	1,187.40		
Iron or Steel	Los Angeles, Cal.	808.52		
Castings, Rough	Los Angeles, Cal.	1,513.75		
Sulphate of Soda	San Francisco, Cal.	196.34		
B-Blocks	Bremerton, Wash.	429.83		
Railway Express	Various	1,444.37		
Hydrocarbon Gas	Various	79.36		
		$15,432.15	$1,622,642.88	$1,638,075.03
2. Freight Bill Audit		1,698.86	71,950.30	73,649.16
3. Loss & Damage & Overcharge Claims		240.76	108,068.49	108,309.25
4. Ticket Refund Claims		965.38	17,989.18	18,954.56
5. Household Goods Claims		49.94	15,546.25	15,596.19
		$18,387.09	$1,830,197.10	$1,854,584.19

Work Volume Report

Reservations Made	Rail	120
	Air	115
	Hotel	158
Expense Accounts Checked		175
Household Goods & Automobiles	Movements Arranged Outbound	5
	Insurance Riders Issued	11
	Insurance Bills Approved	8
	Furniture Repair Orders	1
	Claims Filed	2
	Claims Collected - Number	1
	Claims Collected - Amount	$49.94
Ticket Refund Claims	Filed	26
	Collected - Number	44
	Collected - Amount	$965.38

121343

PURCHASING & STORES SECTION
TRAFFIC UNIT
September 1951

STATISTICS (CONTINUED)

Freight Claims	Filed	7
	Collected - Number	13
	Collected - Amount	$240.76
	Over & Shorts Processed	9
	Damage Reports Processed	11
Freight Bill Audit Savings		$1,698.86
Freight Shipments Traced		213
Quotations	Freight Rates	179
	Routes	164
Bills Approved	Air Express	17
	Boat	1
	Carloading	180
	Express	148
	Rail	974
	Truck	318
Return Orders Processed		57
Carload Shipments	Inbound - GE - AEC	1007
	All Others	155
	Outbound - GE - AEC	14
	All Others	27

Report of Carloads Received

	CMSTP&P	N.P.	U.P.	TOTAL
General Electric Company				
Air Washers			1	1
Aluminum Pigs			1	1
Asphalt, Liquid	1			1
Aluminum Sulphate			1	1
Castings, Rough			2	2
Caustic Soda	4	7	5	16
Chairs, Steel			1	1
Liquid Chlorine		3	2	5
Coal	115		718	833
Electrical Equipment		1		1
Ferric Sulphate			3	3
Pipe Fittings			1	1
Lime			1	1
Machinery	2		1	3
Methyl Isobutyl Keotone		1		1
Nitric Acid		8	12	20
Iron Ore	1		2	3
Phosphoric Acid		2		2
Pipe, Steel			38	38

121344

PURCHASING & STORES SECTION
TRAFFIC UNIT
September 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

General Electric Company (Continued)		CMStP&P	N.P.	U.P.	TOTAL
Caustic Potash				1	1
Roofing			1		1
Salt, Crude		1			1
Sand				2	2
Soda Ash		1	1	1	3
Aluminum Sulphate			2		2
Sodium Sulphate				1	1
Steel		3	25	5	33
Steel Punchings		1			1
Tanks				7	7
Tissue, Paper		1			1
Transformers			1		1
Express Cars		2			2
Merchandise Cars		1	2	1	4
	TOTAL	133	54	807	994
A.E.C.					
Autos			1		1
Cabinets			1		1
Chemicals		2		1	3
Lumber			1		1
Plywood		1	2		3
Ties		3			3
Merchandise				1/2	1/2
	TOTAL	6	5	2	13
Atkinson & Jones Const. Co.					
Aggregate			1		1
Asphalt, Solid		1			1
Cement		17	40	9	66
Pipe, Cement				2	2
Sand		9		4	13
Steel		7	3	1	11
Tile, drain			1		1
Merchandise		2	1		3
	TOTAL	36	46	16	98
L. E. Baldwin, Inc.					
Asphalt, Liquid				1	1
Shingles, Asbestos			1		1
Wallboard				1/2	1/2
	TOTAL		1	1/2	1/3

No. 1217345

PURCHASING & STORES SECTION
TRAFFIC UNIT
September 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

		CMSTP&P	N.P.	U.P.	TOTAL
F. J. Early Company					
Cement		1			1
Pipe, Steel				2	2
Steel Bars			5		5
Tanks				2	2
	TOTAL	1	5	4	10
Erwen Construction Co.					
Tanks, Steel				1	1
	TOTAL			1	1
Elliot Bay Lumber Co.					
Sawdust Boards			1		1
	TOTAL		1		1
Richland Fuel Co.					
Coal			3	20	23
	TOTAL		3	20	23
Northern School Supply					
Merchandise				1	1
	TOTAL			1	1
McPhail Engineering Co.					
Asphalt, Liquid				1	1
Cedar Poles			1		1
Shingles				1	1
	TOTAL		1	2	3
R. O. Larson					
Merchandise			1	1	2
	TOTAL		1	1	2
U. S. Army					
Autos, Freight			1	3	4
Freight Trailers				6	6
Vehicles				2	2
	TOTAL		1	11	12
U. S. Engineers					
Merchandise				1	1
	TOTAL			1	1
TOTAL - SUBCONTRACTORS		37	59	59	155
TOTAL - ENTIRE PROJECT		176	118	868	1,162

[redacted]

HW-22304
Classification Cancelled
(Changed to [redacted])
By Authority of [illegible]
By [illegible]
Date 11-30-51

TRANSPORTATION SECTION
MONTHLY REPORT
September 1951

GENERAL

Transportation Section personnel forces were increased from 494 to 504 employees during the month by 7 new hires, 15 transfers in, 2 reactivations - personal illness, 3 transfers out, 10 terminations and 1 deactivation - personal illness.

Effective September 10, fourteen non-exempt employees were returned to the Transportation Section from the Reactor, Separations, and Metal Preparations Sections of the Manufacturing Department concurrent with the reassignment of the equipment maintenance services function in the operating areas.

RAILROAD ACTIVITIES

Commercial cars handled during September increased 27.5% over August with the continuation of heavy receipts of coal and construction materials.

Process movements during September were slightly below normal with a decrease of 34.7% over August.

Cars handled during September including process movements totaled 2,800 compared to 2,321 in August; 1,275 in July; 2,226 in June; 2,443 in May; 2,078 in April; 1,984 in March; 1,793 in February; and 2,625 in January.

The following recapitulation indicates the number of commercial cars handled:

Carload Movements -	Loads In	Empties In	Loads Out	Empties Out
General Electric Company	1055	10	12	972
Subcontractors and Others:				
Atkinson & Jones Co.	99	1	-	92
L. E. Baldwin & Associates	3	-	-	3
F. J. Early	8	-	-	8
Elliot Lumber Co.	1	-	-	0
Empire Electric Co.	1	-	-	1
Edmund P. Erwin Co.	0	-	-	1
Larson Co.	1	-	-	1
McPhail Engineering Co.	5	-	-	4
Morrison-Knudsen Co.	-	34	38	-
Northern School Supply	1	-	-	1
Richland Fuel Co.	23	-	-	18
U. S. Army	15	-	-	10

Effective September 17, Transportation Section train crews began rendering switching services to the 202-S Building, 200-West Area.

Completed annual inspection of locomotives 39-3719, 39-3725, 39-3726, 39-3729 and 39-3732 to conform with specifications of the American Association of Railroads.

[redacted]

1217347

[redacted] Classification Cancelled
(Change [redacted])
By Authority of [redacted]
By [redacted]
Date [redacted]

Transportation Section

Flat car 10-A-3625 was brought to the Riverland Roundhouse for rebuilding and a Special Work Permit was issued to authorize work without the use of assault masks. Work progressed satisfactorily and is approximately 80% complete.

Railroad track maintenance and rehabilitation work continued on a routine basis. Lining, surfacing and dressing of track required 5,898 man-hours. Relay of rail required 240 man-hours. Distribution of track materials required 338 man-hours.

AUTOMOTIVE ACTIVITIES

The Plant Bus System transported 5.6% fewer passengers in September than in August. Decline was due to the thirty day month which included Labor Day. The following tabulation indicates the September passenger volume by shifts and the total revenue received:

No. 1 outbound and No. 3 inbound	28,214
No. 2 outbound and No. 1 inbound	60,876
No. 3 outbound and No. 2 inbound	57,015
Total	146,105
Revenue	$ 7,305.25

The following is a comparative breakdown of average daily bus trips to the Plant Areas:

Passenger busses - 100-B	11
Passenger busses - 100-D	12
Passenger busses - 100-F	10
Passenger busses - 100-H	10
Passenger busses - Hanford	4
Passenger busses - 200-West	27
Passenger busses - 200-East	12
Passenger busses - 300 Area	8
Passenger busses - Riverland	3
Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	4
Passenger busses - North Richland	3
700-300 Area Shuttle Service	21
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

Effective September 11, bus dispatches were established for Redox and TBP separate from the 200 West Area. Temporarily, Redox and TBP bus passengers do not clear through the 200 West Area badge house.

Effective September 24, a new bus schedule was established to serve the Security and Patrol Unit in all operating areas in accordance with their revised shift schedule.

[redacted] (Changed to [redacted] HW-22304
By Authority of Classification Review Board
DECLASSIFIED
By [redacted]
Date 11-29-57

Transportation Section

The Richland Local Bus System transported .4% more passengers in September than in August. Volume of service rendered is indicated in the following statistics:

Total passengers including transfers	32,643
Total bus trips	3,515
Total bus miles	19,684
Total revenue	$ 2,293.15

Bus service for Columbia High School, Carmichael Junior High School and the new Chief Joseph Junior High School was placed into effect on September 6 concurrent with the beginning of the school term.

Off Plant automobile trips (Company business and/or official visitors) totaled 162.

The following tabulation indicates the volume of Drivers Test service rendered, which includes the new permits issued in compliance with AEC Bulletin GM-181 and H.W. Instructions Letter No. 15.

Applicants:	Male	145	Number rejected	0
	Female	16	Number tests given	161
Permits Issued:	Limited to driving with glasses			52
	Unlimited			109
Permits Reissued:	Routine	41		
	New AEC	1100		

The following tabulation indicates the volume of fuel distribution by Equipment Maintenance personnel:

	Gasoline	Diesel Fuel	50 Cetane	Kerosene	White Gas
Stock at start of month	36,427	15,912	14,117	511	78
Received during month	97,443	15,524	24,929	2,500	318
Total	133,870	31,436	39,046	3,011	396
Disbursed during month	96,818	19,010	24,021	1,637	94
Stock at end of month	37,052	12,426	15,025	1,374	302

The following tabulation indicates the volume of inspection and maintenance service rendered to Hanford Works automotive and heavy equipment by Equipment Maintenance personnel: 27 motor overhauls; 165 Class A Inspections and Repairs; 1,426 Class B Inspections and Lubrications; 2,304 other routine maintenance repair and service calls; 726 tire repairs and 645 wash jobs.

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	330	566,377
1B	Busses	169	223,700
1C	Pickup Trucks	468	291,147
1D	Panel,Carryall,Sta.Wagon	113	127,370
1E	Armored Cars	12	1,214
1G	Jeeps	2	711
68 Series	Trucks [redacted]	297	81,477
		1,391	1,291,996

[redacted] Classification Cancelled
(Changed to [redacted])
By Authority of HW-22304 Classification Board
By [redacted]
Date 11-27-51

Transportation Section

Winterizing of Hanford Works automotive and heavy equipment was begun on September 24. Servicing of water cooled equipment with antifreeze is approximately 40% complete.

Completed the government license plate survey requested by the Atomic Energy Commission and furnished an inventory report.

Received two new sedans which made a total of 13 and completed the sedan replacement program for fiscal year 1951.

LABOR ACTIVITIES

The following tabulation indicates in gallons the volume of road asphalt material handled by Transportation Services personnel:

	MC 1	MC 3	MC 4	MC 5
Stock at start of month	0	12,722	0	2,803
Received during month	0	0	0	0
Dispensed during month	0	9,088	0	0
Stock at end of month	0	3,634	0	2,803

Crushed and stockpiled 1,464 cubic yards of 5/8" crushed rock and 731 cubic yards of 1/4" crushed rock requiring 503 man-hours. Manufactured 711 tons of 3/4" pre-mix material requiring 7,548 gallons of MC 3 oil, 474 cubic yards of 3/4" crushed rock and 208 man-hours. Maintenance of primary roads required 440 man-hours.

Handling of miscellaneous material for the Stores Unit at White Bluffs required 406 manphours.

Assisting in the operational functions at the 101 Building required 328 man-hours.

Handling of materials for the Stores Unit in the 700 and 1100 Areas required 543 man-hours.

Handling of area deliveries required 1,213 man-hours; Stores deliveries 195 man-hours; and office furniture 1,263 man-hours.

Handling and loading of an estimated 12 carloads and 160 truckloads of material and equipment required 2,322 man-hours.

Labor and transportation equipment were furnished for the following Projects: P-356, P-357, P-399, P-412, P-426, P-432 and P-479.

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ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION

GENERAL

The backlog of scheduled work at the month end totaled 5,146 mandays for the Section, an increase of 7.1 percent. This comprised 57.8 mandays per craftsman for the Electrical Distribution Unit and 57.85 for the Telephone Unit. Under these circumstances, it is difficult to resume a five day week for the line crews at this time.

The power demands for the month were:

	Date	Sept. KW Demand	Comparative August Demand
Process Load	9-10-51 (2:00-3:00 p.m.)	70,400	70,650
Village Load	9-27-51 (7:00-8:00 a.m.)	19,150	14,500

The Village peak demand conforms to an expected seasonal upward trend.

On September 5, at Richland, alternate plans relating to the connection of the newly constructed Bonneville Power Administration Coulee-Midway No. 3 line to the Midway bus were discussed with Atomic Energy Commission representatives and with Mr. Archie Adams of the Bonneville Power Administration, Portland. Our preference, as well as operating requirements, were then transmitted to Bonneville by the Atomic Energy Commission with request to establish a tentative December schedule dependent upon our later confirmation of required outages.

The Electrical Standards Committee developed and tentatively approved standards relating to grounding of substation fences.

Tree growth in the vicinity of both telephone and electrical distribution lines in Richland has reached a point where it is a sizable maintenance factor. Considerably increased tree trimming has become necessary in addition to replacing of bare secondary wire with insulated wire.

ELECTRICAL DISTRIBUTION UNIT

Maintenance and Operation

Conduit was installed at the two main Richland 115 KV Substations, BB1-S1 and BB1-S2, for Bonneville metering circuits. Installation of totalizing metering equipment will enable Bonneville to measure the Richland electrical energy demand accurately.

A new circuit on George Washington Way from the North Commercial Area to Saint Road was energized. This circuit now serves commercial facilities and also the multiple housing units at Williams Blvd. and George Washington Way.

Project C-341-R (Additions to Richland Village Distribution System) was accepted from Construction, tied into service, and is now physically complete.

The emergency power circuit to the Redox Area and also the new 221-U 13.8/2.3 KV substation were accepted from Construction and energized.

A panel was added to the dispatch board at 251 Dispatching Headquarters. Drawings are in preparation including new lines in the Redox Area, 221-U Area and new tank farms.

Operating procedures for main substations in the 100 Areas have been re-studied for the purpose of speeding up restoration of service under emergency conditions.

System Expansion and Planning

Project C-403, Part I (New Fencing for Distribution and 230 KV Substations) has been accepted as physically complete. Part II is being rescoped after further review to eliminate an item of approximately $30,000 for fencing 230 KV by-pass switching stations.

Project C-380 (Electric Metering - Village of Richland) - 2,208 meters have been installed by the Contractor. Meters at 1100 locations have been inspected and sealed by the Electrical Distribution Unit.

Project C-363 (Rehabilitation of Prefabricated Houses) - The Electrical Distribution Unit has installed 139 meters on bases installed by the Contractor during rehabilitatio of prefabricated houses.

Budget Item B-1800 (New Richland Line Crew Headquarters) has been deferred to FY-53 pending availability of Building 744 from Stores not earlier than June 1952. As an interim move, arrangements have been made to move the headquarters from the Labor Yard into a temporary arrangement of the former Richland Plumbing Bldg. directly south of North Richland.

TELEPHONE UNIT

Maintenance and Operation

Sixty-five (65) telephones were installed at Project C-431 for use by construction forces.

An inspection was completed of the telephone cable installed by the contractor in the Fourth Housing Addition. The Telephone Unit has started the work of splicing this cable into the operating system.

An eleven pair cable and terminal installed by construction forces near the 241-B Tank Farm was spliced into the operating system.

An eleven pair cable terminal was installed near Building 321 to provide telephone circuits for construction forces.

Installation of a 100 line dial exchange was completed, replacing a manually operated PBX in Building 234-5.

A summary of telephone subscriber service is as follows:

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[redacted]

Electrical Distribution and Telephone Section

	Lines in Service	Stations in Service	Extensions in Service	Vacant Lines
Richland and North Richland	4,273	6,677	1,334	327
Process Areas	1,171	1,252	651	579
PROJECT TOTAL	5,444	7,929	1,985	906

System Expansion and Planning

Work orders were released and installation sketches prepared for:

1. Telephone cable additions and arrangements to serve proposed new Pile Technology Building in 100-D Area.

2. Telephone cable extension for service to the 179 Building, North Richland.

Telephone requirements for the 1703-D Building and Kadlec Hospital additions were planned with the Engineering Department.

A study was made of future testing equipment requirements of the BY Exchange and an order initiated for one additional position on the toll and local test board.

A concurrence requested last month for a 13 quad cable, BY to Hanford, has been deferred pending a final decision to locate Manufacturing Department personnel at Hanford.

Final Project Proposal C-443 (Richland Exchange - Additional Switches to Improve Grade of Service) has been prepared and delivered to the A&B Committee.

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1217353

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POWER STATISTICS
ELECTRICAL DISTRIBUTION AND TELEPHONE SECTION
FOR MONTH ENDING SEPTEMBER 30, 1951

ITEM	ENERGY - MW HRS. August	ENERGY - MW HRS. Sept.	MAX. DEMAND - KW August	MAX. DEMAND - KW Sept.	LOAD FACTOR - % August	LOAD FACTOR - % Sept.
230 KV SYSTEM						
A-2 Out (100-B)	7,400	8,040	13,100	12,100	75.9	92.3
A-4 Out (100-D)	13,830	13,140	21,700	21,400	85.7	85.3
A-5 Out (100-H)	7,992	8,172	14,400	13,300	74.6	85.3
A-6 Out (100-F)	8,160	7,600	12,500	13,000	87.7	81.2
A-8 Out (200 Areas)	4,140	4,284	7,920	8,280	70.3	71.9
TOTAL OUT	41,522	41,236	69,620**	68,080**	80.2	84.1
MIDWAY IN	42,276	41,903	65,600*	65,600*	86.6	88.7
Transm. Loss	754	667				
Percent Loss	1.8	1.6				
115 KV SYSTEM						
B1-S4 Out (N.Rich.)	2,088	1,800	3,513	3,398	79.9	73.6
BB1-S1 Out (Richland)	3,756	3,880	8,370**	10,530**	60.3	51.2
BB1-S2 Out "	2,646	3,034	6,480**	9,000**	54.9	46.8
BB1-S3 Out (300 Area)	744	736	1,840	1,840	54.3	55.6
TOTAL OUT	9,234	9,450	20,203**	24,768**	61.4	53.0
Benton In	780	2,060	38,000*	42,400*	27.6	67.5
So. Richland In	8,600	8,180	17,700*	22,800*	65.3	49.8
TOTAL IN	9,380	10,240	55,700**	65,200**	22.6	21.8
Transm. Loss	146	790				
Percent Loss	1.6	7.7				
66 KV SYSTEM						
B9-S11 Out(100-C)	---	119	---	600	—	27.5
B7-S10 Out(W.Bluffs)	510	513	1,373	1,327	49.9	53.7
Hanford Out	299	294	600	600	67.0	68.0
TOTAL OUT	809	926	1,973**	2,527**	55.1	50.9
HANFORD IN	793	839	1,800*	2,150*	59.2	54.2
Transm. Loss	*16	*87				
Percent Loss	*2.0	*10.4				
PROJECT TOTAL						
230 KV Out	41,522	41,236	69,620**	68,080**	80.2	84.1
115 KV Out	9,234	9,450	20,203**	24,768**	61.4	53.0
66 KV Out	809	926	1,973**	2,527**	55.1	50.9
TOTAL OUT	51,565	51,612	91,796**	95,375**	75.5	75.2
230 KV In	42,276	41,903	65,600*	65,600*	86.6	88.7
115 KV In	9,380	10,240	55,700**	65,200**	22.6	21.8
66 KV In	793	839	1,800**	2,150**	59.2	54.2
TOTAL IN	52,449	52,982				
Transm. Loss	884	1,370				
Percent Loss	1.7	2.6				

* Denotes Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System--93.9
Average Power Factor - 115 KV System--91.6
Average Power Factor - 66 KV System--70.0

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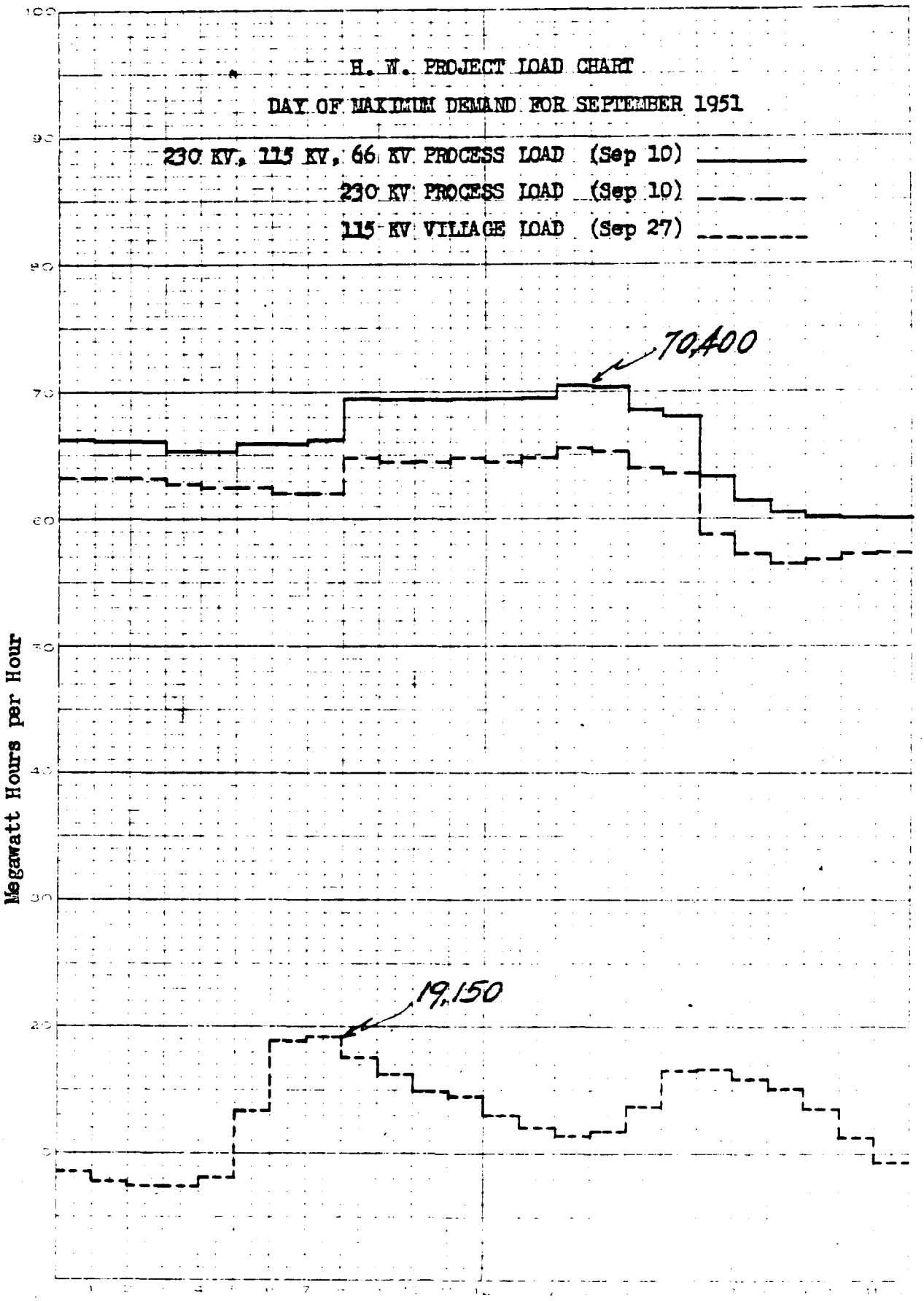
[redacted]


H. W. PROJECT LOAD CHART
DAY OF MAXIMUM DEMAND FOR SEPTEMBER 1951
230 KV, 115 KV, 66 KV PROCESS LOAD (Sep 10)
230 KV PROCESS LOAD (Sep 10)
115 KV VILLAGE LOAD (Sep 27)
70,400
19,150
Megawatt Hours per Hour
100
90
80
70
60
50
40
30
20
0

1217355

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EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

SUMMARY -- SEPTEMBER, 1951

The number of applicants interviewed in September was 1,406 as compared to 1,574 interviewed in August. Of these applicants, 428 were individuals who applied for employment with General Electric for the first time. In addition, 147 new applications were submitted through the mail. Open, nonexempt, nontechnical requisitions decreased from 414 at the beginning of the month to 358 at month end. Total plant roll decreased from 8,909 to 8,896. Turnover rate increased from 2.05% in August to 2.46% in September. During September, 43 new requests for transfer to other type of work were received in the Employment Office, and 24 transfers were effected. Advertisements were placed in Yakima, Washington, newspapers on September 9, 10, 11 and 12, in conjunction with field recruitment there on September 10, 11 and 12, for stenographers and IBM operators. Advertisements were placed in Spokane, Washington, newspapers on September 19, 20 and 21, in conjunction with field recruitment there on September 20 and 21. Results of these recruitment efforts were discouraging, with only 28 interviewed in Yakima, of which 3 were hired, and 11 interviewed in Spokane, with 3 hired. Attendance recognition award pins and wallet cards were distributed and presented to 77 employees who qualified during August.

One employee death occurred during September, and two employees retired. One hundred eighty-six visits were made to employees confined to Kadlec Hospital and 46 checks were delivered to employees either confined at the hospital or at home. At month-end, participation in the Pension Plan was 94.5%, in the Insurance Plan 98.0%, and in the Employee Savings and Stock Bonus Plan 36.0%. As of the end of September, there were 1013 employees registered under Selective Service, and 731 military reservists on the rolls. Since August 1, 1950, 165 employees have terminated to enter military service.

The Supervisors' 40-Hour Program was held during the week of September 10-14. Forty-three members of Supervisory-Management were enrolled by Department Managers. A G-E Opinion Meter was made available and used to determine the over-all opinion of the group regarding this program with same results obtained from written questionnaires. Both indicated that the program is well accepted and attaining its objectives. Four new P.M.S. Groups No. 17, 18, 19, and 20, consisting of 20 supervisors to a group, were started on September 17 and 18. These groups will complete the P.M.S. Conferences approximately February 1, 1952.

Labor Law Program was started at Hanford Works on September 17. The Labor Law Conferences Manual furnished by New York is being followed for text. A series of visualizers were prepared to use in conjunction with this program as an aid to disseminating this information. The Labor Law Program is being presented in a full 8-hour day meeting. This allows sufficient time for the three conferences, a study period, and a 30-minute discussion by a member of the Union Relations Section regarding current Labor Relations activities at Hanford Works. The program is presented daily and will continue

1217356

through October 12. A total of 596 supervisors participated in this program during the month of September. At the request of the Separations Unit, the Nonexempt Eight-Hour Training Program was conducted on September 15 and 29 with a total of 40 members of the unit participating. A questionnaire survey revealed unanimous acceptance to this type of information. A total of 1495 Supervisor's Handbooks on Employee Relations are now issued. A total of 175 people were given Orientation during September, and of this number, 96.9% elected to participate in the Group Insurance Plan.

A total of 49 news releases were distributed during the month of September.

Public Relations personnel met President Ralph J. Cordiner's plane at the Richland airport and arranged appropriate photographs of his party. Twenty-four prints were mailed to selected newspapers.

A press conference was arranged for President Cordiner, and eight media representatives attended. A condensation of his remarks was distributed to supervisory personnel. The talk given by President Cordiner to supervisory personnel was recorded and edited into a 15-minute radio program which was broadcast by all three radio stations serving Richland and vicinity.

Five letters to supervisors over the signature of the Manager, Employee and Public Relations were developed during September. A letter to all supervisors announcing the five-year extension of G.E.'s contract with the Atomic Energy Commission was developed for the General Manager's signature. A letter to all Chief Operators in the Process and Separations Sections concerning a forthcoming union representation election was developed for the signature of the Assistant Manager, Manufacturing.

A total of 7,586 prints were produced during the month in completing 99 assignments. Of the total prints produced, 6,968 were for employee identification and area admittance badges.

The Manager, Public Relations, was appointed Plant Community Chest Chairman. He has the responsibility for conducting the 1951 fund solicitation among all nine departments of the Nucleonics Division.

Civil Defense Bulletin number three was mailed to Richland and North Richland residents. Bulletin number four was completed and readied for mailing. Bulletin number five was put into production.

A Civil Defense advertisement for the Richland telephone directory was prepared in copy and layout form.

A seven-hour legal hearing was tape-recorded and a typed script produced as a service to the Legal Department.

The "House of Magic" show was attended by 81% of the Works personnel during the first week's showing. A total of 20,000 tickets were distributed during the two-week showing.

1217357

Employee and Public Relations
Summary

Personnel recruitment advertisements for a variety of job classifications were written and placed in Pacific Northwest media during the month.

Two women's pages were prepared and publicized in the Hanford Works NEWS during the month of September.

Chief Operator election on September 11 and 12 resulted in a vote of 32 against and 17 in favor of representation by the Hanford Atomic Metal Trades Council. On September 14, a contract was signed by the Company and the HAMTC representing Richland and North Richland Firemen.

Negotiations were conducted with the Office Employee, Blacksmiths, Plumbers, Machinists and Technical Engineers Unions. The Master Agreement has been extended 30 days (to October 9). In an unexpected move, Atkinson-Jones has offered a 10% increase in isolation pay to at least two unions. Wage Stabilization Board approval was received for the Plasterers' rate ($3.00) effective September 17, 1951. An Electrician (Linemen) grievance hearing held on September 27 resulted in a decision in favor of the employer. Verbal notice was received from the Roofers of their desire to negotiate wages, etc. No meetings have been held. The situation regarding receipt of Plumbers is improving. During September, the National Labor Relations Board conducted a representation election and union authorization election in the Teamsters Union. Teamsters are presently considering a petition to the NLRB to redetermine the collective bargaining agent of approximately 100 warehouse workers presently represented by the Office Employees Union.

New drafting and design rates were placed into effect September 17, 1951. A draft of a petition to the Wage Stabilization Board for a 6% general increase for Richland and North Richland Firemen was forwarded to the New York Office.

1217350

EMPLOYEE AND PUBLIC RELATIONS DEPARTMENT

SEPTEMBER, 1951

ORGANIZATION AND PERSONNEL

Employment and Employee Services

Effective September 4, 1951, a General Clerk "D" was engaged and assigned to Investigations and Files to replace a General Clerk "D" who was upgraded to a Steno-Typist "C" during August.

Effective September 10, 1951, a Steno-Typist "B" was transferred from Stenographic Services to Employee Services to replace a Steno-Typist "A" who terminated in August.

Training & Program Development

No organizational changes.

Public Relations

Effective September 28, 1951, one Secretary "B" terminated voluntarily.

Union Relations

No organizational changes.

Number of employees on roll September	
Beginning of month	114
End of month	115
Net increase	1

Correction on August Report:

Figures on number of employees on roll during August should have been:

Beginning of month	118	instead of the 116 shown
End of month	114	instead of the 113 shown
Net decrease	4	

1217359

Employee and Public Relations

ACTIVITIES

Employment and Employee Services

	August, 1951	September, 1951
Applicants interviewed	1,574	1,406

428 of the above applicants interviewed during September were individuals who applied for employment with the Company for the first time. In addition, 147 new applications were received through the mail.

Open requisitions	August, 1951	September, 1951
Exempt	4	1
Nonexempt	414	358

Of the 414 open, nonexempt, nontechnical requisitions at the beginning of the month, 270 were covered by interim commitments. Of the 358 open, nonexempt, nontechnical requisitions at month end, 256 were covered by interim commitments. During September, 123 new requisitions were received requesting the employment of 168 nonexempt employees.

	August, 1951	September, 1951
Employees added to the rolls	286	206
Employees removed from the rolls	182	219
NET GAIN OR LOSS	+ 104	- 13

Of the 219 employees removed from the rolls, none were removed due to lack of work.

Turnover:	August, 1951		September, 1951	
	Male	Female	Male	Female
	1.06%	3.69%	1.88%	4.59%

Over-all Turnover:	August, 1951	September, 1951
	2.05%	2.46%

During September, 44 employees terminated voluntarily to accept other employment, 42 terminated to return to school, and 20 terminated to leave this vicinity. Total removals included 31 employees who were engaged for summer employment only.

1217360

Employee and Public Relations

Transfer Data

Accumulative total of requests for transfer received since 1-1-51	499
No. of requests for transfer received during September	43
No. interviewed in September, including promotional transfers	40
Trans. effected in September, including promotional transfers	24
Trans. effected to date since 1-1-51, including promotional transfers	345
Trans. requests active at month end	61
No. of stenos transferred out of steno pool in September	4

During September, 8 people whose continuity of service was broken while in an inactive status were so informed by letter.

During the month, Community Real Estate and Services Department informed the Employment Office that due to seasonal activities it would be necessary to reduce forces in their Department by 4 sanitation helpers, 5 light truck drivers, 1 heavy truck driver and 1 heavy equipment operator. It was not necessary to actually lay off any of the people effected by this reduction as there were openings for those who were required to take downgrades.

Advertisements for stenographers and IBM operators were placed in the Yakima, Washington, newspapers on September 9, 10, 11 and 12. In conjunction with these advertisements, field recruitment was conducted at Yakima on September 10, 11 and 12, at which time 28 applicants were interviewed, resulting in 2 stenographers and 1 clerk being hired. On September 19, 20 and 21, further advertisements were placed in the Spokane, Washington, newspapers for these same classifications, and field recruitment was conducted there on September 20 and 21. Eleven applicants were interviewed, resulting in 3 stenographers being hired.

During September, advertisements were placed in five medical journals for a nurse anesthetist, and in four medical journals for a physical therapist.

One-year emblems and wallet cards in recognition of perfect attendance were presented to 77 employees in September, who became eligible during August.

The first quarterly supplement to the Manpower Inventory was completed during September, and the required data transmitted to the Atomic Energy Commission.

Employment Statistics:

	8-31-1951	9-30-1951
Number of employees on rolls		
Exempt - Male (a)	1,978	1,917
Female	56	55
	2,034	1,972
Nonexempt - Male(a)	5,031	5,094
Female	1,844	1,830
	6,875	6,924
Community Firemen(a)		56
TOTAL	8,909	8,896

1217361

Employee and Public Relations

ADDITIONS TO THE ROLLS[a]

	Community Firemen	Exempt	Nonexempt	Total
New Hires	1	13	157	171
Re-engaged	0	0	0	0
Reactivations	0	2	31	33
Transfers (from other plants)	0	2	0	2
Actual additions	1	17	188	206
Payroll exchanges	0	25[b]	0[c]	25
GROSS ADDITIONS	1	42	188	231

TERMINATIONS FROM THE ROLLS

Actual Terminations	0	16	161	177
Removals from the rolls (deactivations)	0	1	38	39
Payroll exchanges	0	0[d]	25 [e]	25
Transfers (to other plants)	0	3	0	3
GROSS TERMINATIONS	0	20	224	244

GENERAL

	8-1951	9-1951
Applicants interviewed	1,574	1,406
Photographs taken	395	355
Fingerprint impressions (taken in duplicate)	493	488

ABSENTEEISM STATISTICS (Weekly Salary Roll)[f]

Male	2.07%	2.18%
Female	3.64	3.84
Total Plant Average	2.57	2.72

INVESTIGATION STATISTICS

Cases received during the month	343	248
Cases closed	349	363
Cases found satisfactory for employment	350	251
Cases found unsatisfactory for employment	16	7
Cases closed before investigations completed	21	19
Special investigations conducted	15	7

PERFECT ATTENDANCE RECOGNITION AWARDS

Total one-year awards to date	1,562
One-year awards made during September for those qualifying in August	77

(a) In previous reports, Community Firemen and Supervisors-in-Training were erroneously carried in the exempt classifications. Community firemen will be carried separately and Supvs.-in-Train. will be in nonexempt.
(b) Transferred from Weekly Payroll
(c) Transferred from Monthly Payroll
(d) Transferred to Weekly Payroll
(e) Transferred to Monthly Payroll
(f) Statistics furnished by Weekly Payroll

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PRIVACY ACT MATERIAL REMOVED

Employee Services:

The following visits were made with employees during the month by a representative of Employee Services:

Employees visited at Kadlec Hospital	186
Salary checks delivered to employees at Kadlec Hospital	36
Salary checks delivered to employees confined at home	10

As of the end of September, participation in Company Benefit Plans was as follows:

Pension Plan	94.5%
Insurance Plan	98.0
Employee Savings and Stock Bonus Plan	36.0

One employee died during September, namely:

Edward S. Groman, Community Real Estate and Services Department.

Six letters were written to deceased employees' families during the month, concerning payment of monies due them from the Company, as well as answering other pertinent questions for them.

Two employees retired during the month, namely:

Community Real Estate and Services; and
Transportation Section.

During the month, 20 letters were written to retired employees providing them with information of a general nature in which they would be interested. In addition, 8 retired employees living in this vicinity were contacted giving them similar information. Photographs were taken and news stories on two pensioners were prepared for publication in the Works News.

Military Reserve and Selective Service:

The statistics with respect to employees registered under Selective Service are as follows:

Employees registered	1,013
Employees registered who are veterans	510
Employees registered who are nonveterans	503
Employees classified as 1-A	266
Deferments requested to date	270
Deferments granted	171
Deferments denied and appealed at state levels	10
Deferments denied and appealed at national levels	4
Deferments requested, employees later reclassified	34
Deferments requested, later withdrawn	11
Deferments pending	40

1217363

PRIVACY ACT MATERIAL REMOVED

Employee and Public Relations

Statistics with respect to employees who are members of the military reserve are as follows:

Number of reservists on the rolls	731
Number who returned to active duty to date	85
Number who returned to active duty in September	3
Deferments requested to date	88
Deferments granted	80
Deferments pending	1
Deferments denied	4
Deferment requests recalled	3

Military terminations since 8-1-1950 are as follows:

Reservists recalled	85
Selective Service	78
Female employees enlisted	2
TOTAL	165

1217364

Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

The Supervisors' 40-Hour Training Program was again resumed for the fall of 1951, and was held during the week of September 10 - 14. A total of 43 members of Supervisory-Management were enrolled by the nine major Departments. Although 836 Supervisors have completed this program previously, approximately 15% of these are no longer on roll. Therefore, considering that we have approximately 1200 Supervisors throughout the Hanford Works it was deemed desirable and necessary by the Department Heads to conduct this program.

An informal luncheon was held at noon on Friday of the program week. At which time members of the group together with seven members of Senior Management of Hanford Works met and discussed various subjects.

A survey questionnaire completed by participating members of the group indicated that this program had been a definite assistance to them as Supervisors.

A G.E. Opinion Meter was made available on a trial basis, and used to determine the over-all opinion of the group regarding the effects of this program. The G.E. Opinion Meter was made available to us by Dr. Wayne Marshall of the 300 Area, and further study will be made to determine possible future use of this device and desirability of possible purchase of the machine.

P.M.S. Groups 17 and 18 were started on September 17, and meetings were held in the 700 Area. Groups 19 and 20 were started on September 18, and these meetings are conducted at Hanford High School. This provides opportunity for both inter-area and outer-area personnel to participate in these P.M.S. Conferences. Each group consists of 20 Supervisors, and were enrolled by the Department Managers of the Nucleonics Division. These four groups, making a total of 80 Supervisors, will complete the P.M.S. Conferences approximately February 1, 1952. Three hundred Supervisors at Hanford Works completed the Management Skill of Persuasion included in the P.M.S. training previously. Additional groups will be started in the near future.

The August 31, issue of SAGE to which was attached a special flyer announced our Labor Law Program which was started on September 17. The Labor Law Conference Manual furnished by New York is being followed for text of this program. However, a series of visualizers were prepared to use in assisting Training to disseminate this information with the thought in mind that through this aid we will reach the eyes as well as ears of participating Supervisors.

Because of the difficulty of having Supervisors attend three different sessions at Hanford Works, the Labor Law Program is being presented in a full 8-hour day meeting. This permits time for the three conference programs and a study period to assure the use of John Simons' book "You And Labor Law". Time is also afforded to a member of our Union Relations Section to discuss in 30 minutes the current Labor Relations activity at Hanford Works and to answer any specific questions raised by members of the group.

Employee and Public Relations

TRAINING AND PROGRAM DEVELOPMENT

The program is being presented daily, and during the month of September, a total of 556 Supervisors attended the program. A special preview meeting of the Labor Law Program was conducted on September 7, with a total of 40 members of Patrol and Security Section in attendance. Making a total of 596 Supervisors completing Labor Law at Hanford Works to date.

Questionnaires are being completed by the participants of the program and reveal 90% approval and commendation of the worth of this Labor Law information.

Again at the request of the Separations Department, the non-exempt 8-Hour Training Program was conducted on September 15, and 29. A total of 40 non-exempt employees of the Department participated in this program. Anonymous questionnaires were again completed by members of the participating group, and used as a survey to arrive at the opinion of the group regarding this type of information, and again the questionnaires reveal unanimous acceptance to this information.

During September two conferences were attended by J. A. Wood to coordinate the information to be used in a Uniform Filing Procedure Program. This program is to be conducted starting October 29, at the request of the Records and Control Section, to assist all secretaries, stenographers, and typists to place in effect the Uniform Filing System as directed by Policy Guide 10.4 to be issued shortly.

During the month, 29 Supervisor's Handbooks were brought up to date and re-issued. No net change has been made in the total number issued, which now stands at 1495, leaving only 5 in stock.

A total of 179 people were given Orientation during the report period, and of this number 96.9% elected to participate in our Group Insurance Plan.

Of the 100 copies of "Men and Volts" recently received, 54 copies have already been sold through our Supervisors' 40-Hour Training Program, and our 8-Hour Non-Exempt Program.

The G.E. "House of Magic" show was presented for Hanford Works people during the week of September 10. All members of the Training and Program Development Section participated by collecting tickets at the many showings.

T. A. Purton, assistant supervisor of Training, was transferred to our Seattle Office of the Apparatus Department. Mr. Purton will become Manager of Market Research and Customer Relations. D. G. Dayton was appointed assistant supervisor of Training effective October 1, 1951.

1217366

PUBLIC RELATIONS

PUBLIC INFORMATION

A total of 49 releases were distributed during the month. Of these 34 were sent to the "local list" and eight were sent to the "daily list" Seven were answers to requests.

Richland's second polio case of the year was announced via a news story.

Twelve recreation stories were written for the "local list".

New garbage collection days and zones in Richland were publicized via the Works NEWS and local newspapers.

President Ralph J. Cordiner's plane was met at the Richland airport by Public Relations Personnel. Appropriate photographs were arranged of his party and twenty-four prints were mailed that same day to selected newspapers in the Northwest.

A letter concerning President Cordiner's visit and meeting with supervisors was written for the General Manager's signature and distributed to all supervisors.

A press conference for President Cordiner was held in the 703 Building. Several newspaper and radio representatives were invited. Eight media representatives attended the conference. A news story based on his talk was sent to the "daily list" and a condensation of his remarks sent to lists 1,2,3,4. Photographs and biographical information were supplied to local media.

A talk given by President Cordiner to supervisory personnel was recorded and edited into a 15-minute radio program which was broadcast by all three radio stations serving Richland and vicinity.

The Richland Reporter, a magazine published locally, was added to the list of media to which news releases are distributed.

A short feature was written and publicized in the Works NEWS that urged new tenants not to plant grass over exposed ends of pipes in their yards.

Pauline Osborn's career at finger printing and photographing new employees at the plant was featured in the Works NEWS on September 14.

Paul Deutschman, city desk Denver POST, visited Richland for two days and talked with J. W. Harris, H. A. Root, C. W. Weeks, and M. L. Blum. He will use the information gained here in the preparation of a thesis for a masters degree on community management at the University of Oregon.

Barry S. Havens, editor of the G-E MONOGRAM, visited Richland. Arrangements were made for a future Monogram article on G.E.'s operation of Richland. In addition, information was supplied for an article on the industrial uses of radioactive waste materials from Hanford.

Fulton Travis, editor of the Yakima HERALD, visited Richland to explain that his paper would have a local correspondent in town. Arrangements were made for the correspondent to pick up news releases at the News Bureau.

National Kid's Day was publicized for the local Kiwanis Club by personnel of the Public Relations Section who are Kiwanians. A publicity campaign was outlined for the Kiwanis-YMCA sponsored paper drive in Richland.

Three papers were submitted for reclearance following condensation and revision of texts.

Civil Defense Bulletin No. 3 was mailed to Richland and North Richland residents. Bulletin No. 4 was completed and readied for mailing. Bulletin No. 5 was put into production.

News stories and photos were prepared for publication in local newspapers. The stories included: a photo of students looking over a CD display; a story about the distribution of CD Bulletin No. 3; and a story that ties Civil Defense in with Fire Prevention Week.

A "CD films available" letter was written for mailing to clubs and organizations in Richland.

A C advertisement for the Richland telephone directory was prepared in copy and layout form.

A CD display of recommended home supplies was exhibited in Columbia High School and the window of North Richland department store. A new display has been assembled which features detection equipment. It is displayed in the window of a Richland department store.

CD movies were shown to approximately 55 employees of minor construction and 60 members of the Knights of Columbus organization in Richland.

Personnel recruitment advertisements for a variety of job classifications were written and placed in Pacific Northwest media during the month. Advertisements for technical graduates were placed in three technical magazines at the request of the Technical Personnel Office. At the request of Employment ads were placed in six trade magazines of the therapeutic professions for a physical therapist and a nurse anesthetist.

PHOTOGRAPHIC SERVICES

A total of 7,586 prints of photos were produced during the month. Of the total prints produced 6,068 were for employee identification and area admittance badges.

A statistical report of Photo House work during August is attached.

PROGRAM DEVELOPMENT

The Community Chest Campaign was publicized through a news release to local media.

Eight spot announcements tieing Community Chest in with Fire Prevention Week were released to the three radio stations. A 15-minute interview of Community Chest leaders was tape recorded, edited and released to the three radio stations. A 15-minute interview with a Korean war veteran was tape recorded and released for broadcast to promote the United Defense Fund portion of this year's

1217368

Community Chest fund solicitation.

Special arrangements were made to include information about each Community Chest agency in the plant paper, and producing and posting a poster throughout all areas.

The Special Programs supervisor served as plant publicity chairman for the 1951 Community Chest Campaign.

The "House of Magic" show was attended by 81% of the Works personnel during the first week showing. A total of 10,000, including junior high and high school students saw the presentation the first week. An additional 10,000 tickets were distributed to residents of nearby towns through the Benton and Franklin County Public Utility Districts, as well as to construction workers and army personnel at North Richland.

Promotion of the "House of Magic" included: printing and distribution of tickets; two letters to supervisors; posters placed throughout Hanford Works; arranging distribution of advertising mats to local P.U.D.'s and distribution of brochures.

A seven-hour legal hearing was recorded and a typed script produced as a service to the Legal Department.

The Works NEWS introduced a series of articles on people's rights and responsibilities under the new Social Security Law. Series will run regularly, and the articles are being published in cooperation with the regional Social Security office in Yakima.

Defense Bond Promotion was conducted during the month according to overall Company promotion plan. Material published in the plant newspaper included a message from the Company's president, news stories, and special full page messages.

Security material received special feature treatment. Recognition was given to employees for security alertness on the job.

The Suggestion System was promoted through a full page feature article and pictures of high award winners.

The Red Cross Blood Program was featured twice during the month in the Works NEWS to encourage more people to give their blood. Pictures were included in each feature story showing actual scenes at the Red Cross Blood Center.

A letter to all supervisors announcing the five-year extension of G.E.'s contract with the AEC was developed for the General Manager's signature. A copy of the announcement news story was attached.

A letter to all Chief Operators in the Process and Separations Section concerning a forthcoming union representation election was developed for the signature of the Assistant Manager, Manufacturing.

Information on the new wage stabilization policy and announcement of the company's savings bond campaign was presented to supervisors by letters from the Manager, Employee and Public Relations.

more

1217369

4-4-4-4-4-4

The September Health Bulletin, "Athlete's Foot", was reprinted for distribution through Public Health.

Printing of the Hanford Guards Union--General Electric Company Agreement was initiated, with Columbia Basin News the successful bidder.

The 1,000 G-E-HAMTC Agreement booklets ordered during August were received from the printer.

A printer "teaser" type brochure was developed for distribution during October in advance of distribution of a commercially-produced pamphlet on "Care of the Sick in the Home", which was obtained free of charge.

The Hanford Works Industrial Medical program was described in an eight-page leaflet, "Your Job and Your Health".

Printer's proof of the new uniform filing system section for insertion in "This Way, Please--" was received from the printer, corrected and returned for final production.

Community Services Section's annual report covering accomplishments of fiscal year 1950-51 was written; purchase requisition developed; and final artwork developed.

Artwork services furnished included: four editorial cartoons; one six-page booklet, one 36-page booklet (37 layouts and 12 illustrations); 1 spot illustration and revised 15 visualizers.

Hanford Works Posting Service activities during September included placing four Sheldon-Claire employee relations posters in 35-key locations throughout the plant; and also placing the following posters throughout the plant: "House of Magic", Community Chest, Government Savings Bond, Adventures Ahead, Suggestion System, and four G.E. Photo News Service posters.

News Bureau space report--See last page of report.

NEWSPAPER SPACE REPORT
August, 1951
As Compiled from Nucleonics Division News Bureau clipping files

SUBJECT	NEWSPAPER	DATE	COLUMN INCHES	PHOTOS
Hanford Guards Suit	Columbia Basin News	August 3-7	5½	
	Baker Democrat	August 6	1	
	Wenatchee World	August 18	1½	
	Bellingham Herald	August 19	1½	
	Spokane Chronicle	August 2	2	
	Prosser Record Bulletin	August 9	3	
	Walla Walla Union-Bulletin	August 7	2	
	Longview	August 3-18	3½	
	Yakima Herald	August 7-18	5	
	Yakima Republic	August 16	3½	
	Goldendale	August 18	1½	
	Spokane Review	August 17-19	3	
	Tacoma News Tribune	August 18	1	
Garbage, Water, Seaage	Columbia Basin News	August 24	2½	
Civil Defense	Civil			
	Tri-City Herald	August 5-21	16	2
	Columbia Basin News	August 31	7	
	Walla Walla Union Bulletin	August 10	12½	
Recreation	Tri-City Herald	August 1-22	28½	6
	Columbia Basin News	August 7-24	7½	6
	Walla Walla Union Bulletin	August 2-11	6½	1
	Spokane Chronicle	August 21	2¼	
Community General	Columbia Basin News	August 7-29	22	
	Tri-City Herald	August 5	8	1
	Walla Walla Union Bulletin	August 3-28	13	
Employee Benefit Plans	Walla Walla Union-Bulletin	August 17	3	

285

121371

Organization Changes	Columbia Basin News	August 1-17	13	
	Walla Walla Union-Bulletin	August 16-17	15½	
	Tri-City Herald	August 17	14	
	Spokane Chronicle	August 18	12½	
Plant Construction	Tri-City Herald	August 9-10	14½	
	Columbia Basin News	August 2-23	12½	
	Walla Walla Union-Bulletin	August 26-29	20	
	Daily J. of Commerce, Seattle	August 4-18	18½	
	Daily J. of Commerce, Portland	August 18-30	14	
Employment	Hermiston Herald	August 9	2	
	Baker Democrat	August 8	1	
	Longview Daily News	August 7	1	
	Port Angeles News	August 7	1	
	Daily Olympian	August 8	1	
	Oroville Gazette	August 8	2	
	Waitsburg Times	August 10	2½	
	Tacoma News Tribune	August 7	1	
	Walla Walla Union-Bulletin	August 7	1	
	Spokesman Review	August 4	3	
	Grandview Herald	August 9	4	
	Couer D'Alene Press	August 11	2	
	Capital Journal, Salem	August 7	1	
	Prosser Record Bulletin	August 9	4	
	Mount Vernon Herald	August 4	1½	
	Bremerton Sun	August 4	1½	
	Everett Herald	August 7	1	
Personnel General	Tri-City Herald	August 4	5	1
	Columbia Basin News	August 3110	14½	1
	Spokesman Review	August 9	3	
	Spokane Chronicle	August 10	3½	
	Yakima Republic	August 9	3½	
	Walla Walla Union-Bulletin	August 3	5	
Plant General	Walla Walla Union-Bulletin	August 1-18	23	
		TOTAL	381	18

1217372

H. W. PHOTO HOUSE
September, 1951

	2 x 2	2 x 4	5 x 7	8 x 10	Negatives	16 M.M.	3½ x 4 glass slides	Portraits	M.P. Film Repair	35 M.M.
COMMUNITY REAL ESTATE & SERVICES										
Fire			32	188	89					
Housing			6	3	7					
Parks & Recreation			10						2	
Police			46	9					3	
Public Library				1						
Municipal				209	145					
EMPLOYEE AND PUBLIC RELATIONS	1420				355					
News Bureau			98	63	86					
Special Programs			32	25	37					
Radio & Special Events				3		1500'				60
Works News			180	10	90			2		
ENGINEERING										
Technical							2			
Rotational Training			28		7			7		276
MEDICAL			6		4					5
MANUFACTURING										
Reactor Section			77				4			
RADIOLOGICAL SCIENCES										
Instrument		6		126	49					
Redox				270	27					
UTILITIES AND GENERAL SERVICES										
Purchasing & Stores				56	30					
Security	3986	656		4						
MISCELLANEOUS										
Civil Defense			5		2					
AEC Safety			24							
AEC Security			7		9					
TOTAL	5406	662	551	967	937	1500'	6	9	5	341

1217373

Employee and Public Relations

Union Relations

UNION RELATIONS - OPERATIONS PERSONNEL

The National Labor Relations Board conducted a representation election on September 11 and 12, involving production Chief Operators. The proceeding was uneventful and the results of the election were 32 opposed and 17 in favor of representation by the Hanford Atomic Metal Trades Council.

After approximately three months of negotiations, a contract was executed on September 14, 1951, between the Company and the HAMTC representing Richland and North Richland Firemen. The Firemen, through their union representative, also accepted the Company's insurance and pension package.

One meeting was held during the month with representatives of the various local unions for the purpose of discussing wage adjustments as that situation is developing in the East. It was emphasized that the Company is making no firm offer at this time and that the meetings were only for general information purposes and to keep our unions posted on current developments at our other plants.

The Company's attorney, Gerald DeGarmo, submitted to this office a brief pertaining to the recent union authorization hearing which was conducted on August 30 and 31, by the NLRB. No other information has been received on the results or decision of this hearing.

Grievance Statistics:

Twenty-six grievances were received during the month, bringing the total received this year to 123.

Grievances were sent in this month from the following divisions:

Community Real Estate & Services Department	
Community Services Section	2
700-1100-3000 Area Services Section	1
Manufacturing Department	
Reactor Section	9
Separations Section	6
Metal Preparation Section	1
Medical Department	
Kadlec Hospital Section	1
Utilities & General Services Department	
Plant Security & Services Section	1
Transportation Section	4
Electrical Distribution & Telephone Section	1
Total	26

1217374

Employee and Public Relations

Employee grievance reports were received regarding the following subjects:

Jurisdiction	7
Overtime Rates	2
Sick Leave	3
Seniority	1
Information to Council & Employees	1
Wage Rates	10
Miscellaneous	2
Total	26

The status of grievances received in 1951 as compared to those received during the same period in 1950 is as follows:

	1951	1950
Received in September	26	18
Received thru September	123	159
Settled satisfactorily, Step I, thru Sept. 30	55	97
Pending at Step I thru Sept. 30	3	--
Settled Step II thru Sept. 30	19	21
Pending at Step II thru Sept. 30	52*	41
At Arbitration	4**	--

*Including nine grievances received in 1950.
**Including one grievance received in 1950.

Eight per cent of the total grievances received this year have been submitted by employees outside the bargaining units.

Two meetings were held during the month for the purpose of processing grievances at the Step II level.

UNION RELATIONS - SUBCONTRACTOR PERSONNEL

Negotiations:

Machinists

Meetings were held on September 19 and 21. Conciliation Service present at second meeting by request of Union.

Union's demands:
1. Wage increase from $2.45 to $2.80 effective August 14, 1951
2. Interim opening clause

Employer's position:
1. Offered $2.58½ effective as of date of agreement
2. Refused to negotiate in excess of 10% formula
3. Rejected interim opening

1217375

Employee and Public Relations

A strike vote was taken on September 23, which resulted in an affirmative expression subject to the sanction of the International. Such approval has not been granted at month-end. Atkinson-Jones has suggested that the matter be placed before the Davis Panel. We have expressed disagreement with such a course of action and have received assurances that Atkinson-Jones will not be the moving party in seeking Panel intervention until such time as General Electric and the Commission are in full accord.

Technical Engineers and Architects

Four meetings held during September with the Conciliation Service in attendance at the last two.

Union's demands:	Wages and classifications in conformity with the Union constitution
Employer's position:	Refused to negotiate for an amount that pierces the Wage Stabilization Board ceiling

Further meetings are scheduled.

Plumbers

The U.S.W.--U.A. proposal with respect to a new Hanford Works Addendum, together with Atkinson-Jones' letter of transmittal, was received on September 13. The primary change consisted of a 50-cent increase in isolation pay which was rejected by General Electric.

Atkinson-Jones reached an agreement with the Plumbers' Union regarding the rate applicable to "Welding Inspector." The Union has dropped their claim for retroactivity of this premium payment and has joined AJ in requesting WSB approval of a 25-cent per hour increase for this classification.

Office Workers

Two meetings were held during the month with no agreement reached on major demands. Wage demands are moderate. Expect to close these negotiations with much less difficulty than has been customary with this craft.

Sheet Metal Workers

Meetings were suspended during September by mutual agreement.

Blacksmiths

Agreement reached on wage increases from $2.34 to $2.50 (Jrn.) effective September 3, 1951, with Helpers' rate ($2.00) to remain unchanged. AJ recognized the negotiations in progress in this area by agreeing to grant increases up to a maximum of $2.57 per hour (Jrn.) and $2.20 per hour (Hlprs.) at such time as those rates are established as prevailing.

1217376

Employee and Public Relations

Roofers

Notice has been given AJ of a desire to negotiate wage increases of approximately 6½ cents per hour, together with a new two-year apprenticeship program and wage progression schedule. The Union bases its demand on CISC Regulation No. 1 as a rate prevailing in this area.

*****

At a meeting on September 5 in Pasco another 30-day extension of the Master Agreement (to October 9) was mutually agreed upon.

During negotiations with Technical Engineers on September 26, AJ offered a 10 per cent increase in isolation pay to the Union contingent upon the acceptance of a like amount by all other crafts. The same proposal was made to the Plumbers' Union at a meeting later that day. We are informed that the Plumbers neither accepted nor rejected the proposal, but were very critical of USW and attorneys for not having submitted their 50-cent agreement to WSB prior to seeking GE and AEC approval. This would be contrary to an established practice wherein AEC tentative approval is obtained before any request is submitted to WSB.

Wage Stabilization Board approval was received for the Plasterers' rate of $3 effective as of the first pay period following the date of the notice (September 10). This decision (1) made no provision for the small amount of retroactivity involved, and (2) appears to restrict the "area" covered by CISC regulations to Hanford and vicinity. This would require that all wage increases granted on the Project have prior approval of the Board. It seems desirable that the "area" should be determined by historical practice on the Project, in granting wage increases to the various crafts, i.e. Boilermakers - Seven Western States, Plumbers - State of Washington, Electricians - Two and One-Half State Agreement, etc. AJ is seeking an interpretation of CISC regulation #1 relative to this matter.

A grievance hearing lodged by two Linemen who were terminated in July which precipitated an NNE work stoppage in July and August, was held on September 27 in accordance with the procedure set forth in the NECA agreement which provides that grievances which cannot be adjusted at the local level be heard by a Labor-Management Committee consisting of three members of Labor and three representatives of the Employers. The majority vote of this Committee is binding on the parties. In a unanimous decision, the Committee ruled that the terminations should stand: (1)"without prejudice"and (2) on the basis of the men having "delayed emergency repairs."

The situation wherein the Plumbers have failed to furnish sufficient men which has been a recurring matter since June 26, is improving to the extent that at this time we have received 303 Plumbers, Steamfitters and Welders and have a balance of 124 on requisition.

1217377

Employee and Public Relations

During September, the Teamsters' Representation and Union Authorization elections were conducted by the NLRB. The representation election resulted in a vote of 391 for, and 4 against; the UA election resulted in a vote of 410 for, and none against. The Teamsters are presently considering a petition to the NLRB for an election to redetermine the collective bargaining agent of approximately 100 warehouse workers presently represented by the Office Employees Union. The Union's request to be furnished with the number of employees in this category on the payroll in order to determine whether or not a sufficient number of signatures had been obtained, was rejected by AJ.

Requests for Reimbursement Authorizations handled during the month:

1. Electrician (Linemen) - Overtime
2. Plasterers - Wage Rates
3. Electrician (Wiremen) - Wage Rates
4. Plumbers - Welding Inspector
5. Electricians (Wiremen) - Overtime
6. Plasterers - Wage Rates

Reimbursement Authorizations received during the month:

1. Electrician (Wiremen) - Wage Rates

WAGE RATES

Responsibility for the administration of the Design classifications was transferred to the Salary Administration Office where the exempt rules will be used to govern rate changes, etc. In the event of unionization of the Designers, the administration of these classifications will revert to the Wage Rates Unit.

The new drafting and design classification rates, which have been approved by the Wage Stabilization Board and the Atomic Energy Commission, were placed into effect September 17, 1951. Retroactive pay for Designers and Draftsmen was computed, and the information was forwarded to the Payroll Unit. Drafting supervisors were notified that retroactive payments would be distributed on October 5, 1951.

A draft of a petition to the Wage Stabilization Board, together with a signed Hanford Atomic Metal Trades Council joiner to the application, for a 6% general increase for Richland and North Richland Firemen (fire fighters) was prepared and forwarded to Mr. W. P. Parsons of the New York Office. It was previously agreed that this Wage Stabilization Board petition would be submitted from the New York Office. This increase, when approved, will enable the General Electric Company to correct an inequity, which now exists as a result of the $3.60 per week increase given to all nonexempt employees and the 6% increase given to all exempt employees in March, 1951.

A study on the estimated costs of a variety of working schedules applicable to the Richland and North Richland Fire Departments was compiled and submitted to the Legal Department.

Employee and Public Relations

Two requests calling for reimbursement for a more flexible hiring rate plan were submitted to the Atomic Energy Commission for approval. This plan would affect both the unit and non-unit jobs, and it entails "the hiring of an applicant at any step within a schedule, based upon the individual's qualification and background."

An over-all review of nonexempt, non-unit job classifications in the Transportation and Electrical Distribution Sections was begun.

Among the negotiations held on grievances, were a series of three meetings which were held with representatives of the HAMTC and Manufacturing Department supervisors in reference to grievances submitted by the Union. The Union contends that several employees, (who are not Instrument Specialists) are performing work on the Instrument Specialist level and as a result are misclassified. It appears that this group is embarked on a campaign to force widespread use of the Instrument Specialist classification.

The program to educate supervision in our Wage Rate policies and procedures was continued with meetings attended by various levels of supervision. A discussion was held concerning these policies at the monthly 40-Hour Supervisors' Training Program.

INSURANCE, WORKMEN'S COMPENSATION AND SUGGESTION SYSTEM

Suggestion System:

	August, 1951	September, 1951	Total Since 7-15-47
Suggestions Received	134	130	7333
Investigation Reports Completed	159	67	
Awards granted by Suggestion Committee	30	27	
Cash Awards	$440.00	$285.00	
Estimated Savings	$5,891.60	$1,847.10	

A $60 award was made to an employee in the Reactor Section for suggesting a method of combining a water jet with a small tank as a trip to be used as a water sampling device in place of the pumps located at 107 outlet building in all 100 Areas, eliminating routine maintenance repairs, lubrication usage and lubrication checks.

An employee of the Radiological Sciences Department received a $50 award for proposing an improvement in the urine sample collection from sheep, thus saving on labor and giving a more accurate sample.

An employee of the Metal Preparation Section suggested a change in the bronze tongs by extending the handle five inches, thus doing away with the bottom weld, giving more service from a pair of tongs and cutting down on number of welds needed. This employee received a $25 award for his proposal.

1217379

Employee and Public Relations

Workmen's Compensation:

Three cases under litigation closed during the month.

Life Insurance:

Code information which is known only to Home Office Life Underwriters Association has been furnished 43 insurance companies and investigation agencies during the month of September, 1951. This is in accordance with an arrangement with the Underwriters whereby employees on this Project might be insured on the same basis as those working elsewhere.

Insurance Statistics:

	August, 1951	September, 1951	Total Since Sept., 1946
Claims reported to the Department of Labor and Industries	144	112	5057
Claims reported to Travelers Insurance Company	12	13*	551

* Of the above claims reported during September to the Travelers Insurance Company, 8 were property damage and 5 bodily injury.

1217330

COMMUNITY REAL ESTATE AND SERVICES
DEPARTMENT
SUMMARY - SEPTEMBER, 1951

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End of Month
Administration	22	22
Community Services Section (Total 244)		
Public Works	103	100
Parks & Recreation	44	36
Police (Richland)	43	43
Fire (Richland)	50	51
Public Safety	2	2
Engineering	12	12
Community Real Estate Section (Total 228)		
Housing and Maintenance	219	215
Commercial Property	13	13
700-1100-3000 Area Services Section (Total 113)		
700-1100 Maintenance	61	59
Patrol (North Richland)	20	22
Fire (North Richland)	32	32
	621	607

There was a decrease of fourteen employees in the Department during the month of September, 1951.

GENERAL

A lease for grounds upon which to construct and operate a Dairy Queen Ice Cream Store was awarded.

Construction of the Standard Oil Company of California automotive service station was begun during the month.

Total housing applications pending - 703.

The Richland Supervisors Association was given approval, by the National Production Authority, to construct an eighteen hole golf course in Richland.

Waste collection from residences will be on a once per week schedule beginning October 1, 1951.

Detailed plans have been prepared for the Fire Prevention Week program, October 7 through 13.

HARoot/jak
10/11/51

1217381

CONTRACTS

Contract Number	Subcontractor	Title and Status	Project Number
G-305	Associated Engineers, Inc.	Irrigation System & Seeding, Parks and Playgrounds. Water Service Alteration to approximately 709 Prefab Houses. Modification to adjust final quantities approved by AEC Sept. 12, 1951. Contract closed out and final payment made September 18.	C-323 S-255B C-233 C-351 C-233A C-449 S-255-A C-376 C-282R
G-326	Packard Pipe & Pump Company	1100-D Well. Work completed July 12. Modification to adjust final quantities and time approved by AEC September 12. Contract closed out and final payment made September 14.	C-382
G-328	C & E Construction Company	Street Improvements. Modification to adjust final quantities approved by AEC August 30. Final payment made and contract closed out September 11.	S-255D C-359 C-374 C-386 S-432 K-535
G-334	Erwen Construction Company	Additions to Sewage Lift Station. Subcontractor awaiting arrival of electrical equipment which was ordered in February and has not as yet been shipped from factory.	C-357
G-343	Baldwin & Dunham Company	Rehabilitation of 1341 Prefabricated Houses. All work completed September 28. Contract being modified to adjust final quantities. Contract will be closed out in October.	C-448 C-380 L-483
G-350	Roof Service Inc.	Rehabilitation of 700 Area Buildings. Contract being modified to include item of work to provide for wiring changes in 723 Building and to adjust contract price. Contract to be closed out in October.	C-400

1217382

Contract Number	Subcontractor	Title & Status	Project Number
G-364	Motorola Inc.	Radio Communications System. Contract closed out and final payment made September 26, 1951.	S-299
G-372	Weston Plumbing Company	Installation Tileboard, Linoleum, 206 Houses. Modification to adjust final quantities approved by AEC September 18. Contract closed out and final payment made September 26.	C-407
G-373	R. A. Neuman & Son	Interior Painting 676 Prefabs. Awaiting verification of final quantities from field engineer. Work completed June 20, exceptions July 17.	S-379
G-377	C. T. Malcolm Company	Soft Water Line to Hospital and Guthrie-Williams Water Line. Work completed Aug. 1. Awaiting approval of final close-out papers by subcontractor. Contract to be closed out in October.	S-415 S-307
G-378	Cyclone Fence Division American Steel & Wire Company	Fencing Wright to Van Giesen, Columbia Ballfield, Barth Playlot. Work completed Aug. 24, 1951. Modification extending time approved by AEC Sept. 18. Contract closed out and final payment made Sept. 24.	S-244 C-356R2 S-406
G-381	Associated Engineers Inc.	Shelterbelt Planting, to be completed during October. Contract has been modified to include work under Project S-479, Fire Protection Facilities Chief Joseph Jr. High School. This work to be completed October 23, 1951.	C-408 S-479
G-387	Erwen Construction Company	Alterations to 712-A. Modification being processed for S-469, Water Line to 704 Bldg. Request submitted September 10, 1951.	C-440

Contract Number	Subcontractor	Title & Status	Project Number
G-390	D & H Paving Company	1951 Street Improvements. Work is ahead of schedule. Contract being modified to include surfacing of two parking areas in Richland, and to extend time fifteen days for this work.	C-426 L-575
G-394	A. C. Grant Company	Construction Handball Court. Work completed Sept. 8. Contract closed out and final payment made September 26.	C-356
G-397	Baldwin & Dunham Company	Access Panels for Precut Houses. Contract work progressing on schedule. Contract to be completed October 8.	S-477
G-399	Royal Company Inc.	Replacement Furnaces "T" Type Houses. Work completed Sept. 7, 1951. Contract closed and final payment made Sept. 14.	L-330
G-405	Weston Plumbing Company	Steam Pit Rearrangement at Dormitories. Contract approved by AEC Sept. 24, 1951. Notice to Proceed given Sept. 24. Work to start 1st week in October.	S-321
G-409	Erwen Construction Company	Tract House NN-1040. Contract approved by AEC Sept. 6, 1951. Notice to Proceed given Sept. 6. Started work Sept. 6. Work completed Sept. 24. Contract closed and final payment made September 26.	L-017
G-410	Seattle Chain Link Fence Company	Fencing Riverside Park & Columbia Playfield. Contract approved by AEC Sept. 24. Notice to Proceed given Sept. 25. Field construction scheduled to start Oct. 5. Contract to be completed October 25.	C-425 S-450

During the month of September, 19 contracts were active, four of which were completed and awaiting modification or other approvals; eight were closed out with final payment being made; and two new contracts were approved. Payments to subcontractors during the month totaled $261,483.73.

COMMUNITY SERVICES SECTION

SUMMARY

SEPTEMBER, 1951

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
ENGINEERING	7	5	7	5
FIRE	50	0	51	0
PARKS & RECREATION	13	31	14	22
POLICE	16	27	16	27
PUBLIC SAFETY	1	1	1*	1**
PUBLIC WORKS	16	87	16	84
	103	151	105	139

Effective September 1, 1951 the office of Public Safety Representative was discontinued. Responsibilities formerly assigned to this office were allocated to those existing units which were best able to perform them.

The Richland Library was closed for a two week period, beginning September 18, 195[illegible], in order to process and catalogue the backlog of unprocessed books. During this period, most of the new books were completely processed and catalogued.

* One employee temporarily on assignment to Civil Defense.
** One employee temporarily on assignment to the Library.

COMMUNITY REAL ESTATE AND SERVICES DEPARTMENT

PUBLIC WORKS UNIT

SEPTEMBER 30, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Employees - Beginning of Month	16	87
Transfers In	-	1
Transfers Out	-	2
New Employees	-	-
Terminations	-	1
Leave of Absence	-	1
Total - End of Month	16	84

SANITATION

Arrangements have been completed for the rescheduling of residential waste collection from a twice weekly frequency to once per week on October 1, and appropriate publicity has been carried in local news media.

A total of 1,550 tons of waste material was collected and disposed of during September, 1951.

EROSION CONTROL

A revised project proposal on C-408, "Shelterbelt Construction", incorporating a change in "Method of Performance" for planting of trees from General Electric forces to sub-contractor forces, and requesting additional funds in the amount of $11,700 was approved by the A & B Committee on September 24, 1951, and has been forwarded to AEC for concurrence.

Routine maintenance of plantings and weed control was continued in all areas assigned to this group.

Community Real Estate and Services Department
Public Works Unit

EROSION CONTROL - CONTINUED

The responsibility for "Erosion Control" operations, along with assigned personnel and equipment is to be transferred to the Parks and Recreation Unit on October 1, 1951.

ROADS AND STREETS

Construction work on Project C-426, "Street Improvement Program", is progressing satisfactorily and is slightly ahead of schedule. Work on Wright Avenue is nearing completion, with some pavement at intersections and lawn repair remaining to be done. Installation of curb and sidewalk around the south-east corner at the intersection of Wright and Duportail, which was originally marked "Hold" on the contract drawings has been released for construction, and this work is in process. The Van Giesen Street improvement is complete with the exception of a few small pieces of pavement where curb grades are to be corrected, and at street intersections, some isolated sections of sidewalk, clean-up, and lawn repair. On Swift Boulevard all curb, with exception of returns, has been poured, and the base and leveling courses have been laid. Paving on George Washington Way is approximately 50% complete and will be finished early in October. Work has been started on Symons Street, and some curb was in at the close of September. Approximately 75% of the curb has been installed along the east side of George Washington Way from Gowen to Van Giesen, and all curb is in at the Chief Joseph School - with sidewalk yet to be constructed at both of these locations.

The section of land between the west end of Duportail and the By-Pass Highway, (which vehicles have been using as a thoroughfare and creating a safety hazard and dust nuisance), has been barricaded to prevent passage of vehicles.

Routine maintenance of streets, sidewalks, and storm and surface drainage systems was continued per schedule.

1217307

301

Community Real Estate and Services Department
Public Works Unit

DOMESTIC WATER

Average water consumption during September was 13.02 million gallons per day, as compared to a daily average of 18.74 million gallons during August.

The roof on the south reservoir has deteriorated to a point that is must be removed, and the Salvage group has advertised for bids on its removal as scrap lumber.

The production and consumption record for September is as follows:

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	142.4149	4.7472	284.6524	9.4884
North Richland	178.2930	5.9431	73.2789	2.4426
Columbia Field	66.7645	2.2254		
300 Area			29.4561	0.9819
Total	387.4724	12.9157	387.3874	12.9129

SEWERAGE SYSTEM

Project C-357, "Additional Pumping Capacity, Sewage Lift Station", is complete with the exception of pump anchor-plate installation, grouting of the motor bases, and minor electrical installation. The right angle drive unit, which was delivered with rotation in the wrong direction has been returned to the vendor for correction, with promise for redelivery within a few weeks.

Normal operation and maintenance of the treatment plants, lift station, and collection system were continued during the month.

Sewage flow records for September are as shown below:

1217308

SEWERAGE SYSTEM - CONTINUED

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G. P. D.	Average Rate Flow Gals. per Min.
Plant No. 1	24.120	0.804	558
Plant No. 2	81.380	2.713	1.884
Total	105.500	3.517	2,442

IRRIGATION SYSTEM

Routine operation and maintenance of the pressure irrigation systems and gravity flow canals were carried on without incident. These systems will be shut down during the early part of October, the date being dependent upon weather conditions.

Project L-017, "Renovation of Tract House NN-1040, (Canal Tender's House)", was completed on September 21, 1951, and acceptance inspection was made on September 24, 1951.

1217389

PARKS AND RECREATION UNIT
MONTHLY REPORT
September, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Beginning of Month	13	31
New Hires	1	0
Terminations	0	8
Transfers - IN	0	0
OUT	0	1
	14	22

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of September 30, 1951

Administration	6
Principals & Supervisors	14
Clerical	23
Teachers	276
Health Audiometer	1
Cooks	44
Nursery School & Extended Day Care	12
Bus Drivers	1
Maintenance	10
Operations	46
	433

CLUBS AND ORGANIZATIONS

As of September 30, 1951, organizations' personnel, exclusive of those included in the Real Estate Commercial Facilities Unit report, include:

Youth Council - Chest	1
Boy Scouts	1
Camp Fire Girls	1
Hi-Spot Club	0
Girl Scouts	2
Justice of the Peace	1
Y.W.C.A.	2
Chamber of Commerce	1
	9

On Saturday, September 14, 1951, the Catholic Church of Richland sponsored a Fall Festival which was held on Lee Blvd. adjacent to Riverside Park with approximately 3,000 persons attending the affair through the day. The Parks and Recreation Unit assisted the sponsoring group in making arrangements for their use of the existing facilities at the Park and the barricading of Lee Blvd. during the event.

1217390

Parks and Recreation

On the evening of September 15, the High School football season began with a game between Gonzaga High School of Spokane and Columbia High School. The new electric scoreboard which was purchased by the Key Club of Columbia High School, and installed by the Parks and Recreation Unit, was dedicated.

The second annual city-wide paper collection which was made by the Richland Kiwanis Club and the Y.W.C.A. on August 26, was very successful and another drive is planned by the two groups on October 21. All profits from these drives will be used for youth activities.

The Richland Supervisors Association was advised September 19, that the National Production Authority had given approval for the construction of an 18 hole golf course in Richland at an estimated cost of $75,000. The course is to be located on a 200 acre tract south of the Sacajawea Rifle and Pistol Club and northeast of the Atomic Energy Commission airport.

On September 26, the Redwood Empire Shows of San Leandro, Calif. made its appearance in Richland for a six day showing. The show was sponsored by the Richland Junior Chamber of Commerce and was located on the assembly area southeast of Jadwin St. and Newcomber Road.

On September 29, the Supervisors Association sponsored a barbecue which was held at the Richland Riders Club. The Parks and Recreation Unit assisted the group in arranging for the loan of park tables and amplification system for use during the event.

The number and types of organizations presently served by the Parks and Recreation Unit include:

Business & Professional Clubs	21
Church & Church Organizations	26
Civic Organizations	17
Schools	13
Fraternal Societies	24
Political Organizations	5
Recreation & Social Clubs - Alumni	3
Art, Music & Theatre	9
Bridge	2
Dance	4
Garden	2
Hobby	9
Social	9
Sports	18
Veteran & Military Organizations	14
Welfare Groups	7
Youth - Boy Scouts	20
Camp Fire Girls	36
Girl Scouts	49
Miscellaneous	10
	288

1217391

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RECREATION

The Summer Recreation Program at Riverside Park came to a close on Labor Day, September 3.

Planned assistance and cooperation was given the Chemical, S, and P Departments picnic which was held at Rivers Park on Labor Day.

All instruments on loan from the Richland Public Schools and used during the summer by the Community Band were returned during the month.

All lights on the playing facilities at Columbia Playfield automatically controlled until September 27. The facilities available for night use are 4 tennis courts, 10 shuffleboard courts, 10 horseshoe courts, 6 ping pong tables, 2 badminton courts, 1 handball court, and 1 volleyball court.

An instructional and demonstration football clinic for the elementary schools of the city was held at the Memorial Softball Field on September 19, 20, 21, 26, 27, 28, and 29, with a total of 947 boys in attendance.

Thirteen picnic kits were loaned to private groups during the month of September.

Attendance figures for September, 1951, at Riverside Park were as follows:

	Children	Adults	Total
General Attendance	1,033	1,505	2,538
Special Events - Participants	956	12	968
Spectators	41	74	115
Assisted activities	173	359	532
TOTALS FOR MONTH	2,203	1,950	4,153
At end of previous month	38,597	30,073	68,670
	40,800	32,023	72,823

Below is listed organized groups and classes using the Riverside Park facilities during September, 1951:

	Children	Adults	Total
Chemical Union -	173	359	532
Picnic (S & P Departments)			
Football Clinic (4th thru 8th grades)	956	12	968
	1,129	371	1,500

On September 13, the regular monthly meeting of the Parks and Recreation Board was held in the lobby of W-20 at which time the following motions were carried:

1. That the "Policies, Procedures, and Regulations for Burlin Camp (issued August 16, by the Parks & Recreation Unit) be approved.

2. That the Parks and Recreation Board Constitution and By-laws be adopted.

1217392 12

The Board also made the recommendation that the park areas known as Knight Place and Mansfield Place remain a part of the Park System.

The next regular meeting of the Parks and Recreation Board is to be held on October 4, 1951

COMMUNITY HOUSE

A large sign reading COMMUNITY HOUSE was erected over the front doors of the building.

Four new front doors were put in and arrangements have been made for them to be varnished.

The front part of the entrance was spot painted.

Arrangements have been made for the kitchen to be painted.

The electricity has been put on a separate unit from the Recreation Hall, by separate wiring.

Arrangements have been made for procuring slim-line flourescent lighting for the Games Room and will be installed next month.

General Electric has furnished the plastic material for covering 20 chairs for the lobby and the Y.W.C.A.wives have volunteered their work to cover them. Work has already started.

Moved coat racks from Games Room to lobby. Arrangements have been made for installation of new coat racks in the Games Room.

Attendance - Community House	Children	Adults	Total
General Attendance	4,479	1,826	6,305
Special Events - Participants	272	14	286
Specators	0	67	67
Assisted Activities	74	527	601
TOTALS FOR MONTH	4,825	2,434	7,258
At end of previous month	11,030	10,712	21,742
TOTALS TO DATE	15,855	13,146	29,000

Indoor attendance to date	20,000
Outdoor attendance to date	65,113

MAINTENANCE

Arrangements were made and work begun on the repair of and alteration to the construction building which was moved into the Bomber Bowl. This building is to be made available as a concession stand to service the east side bleachers at the Bowl.

Parks and Recreation

The lay-off of all temporary Servicemen was completed during the month. Two Servicemen on loan from the Real Estate Section were returned to them effective September 10.

Project C-425, the preliminary survey of parking area "A" at Columbia Playfield, was started during the month.

Plans were made to have all the damaged tables and benches at Riverside Park repaired and made ready for storage later in the season.

Janitorial service was provided and furnished to all assigned facilities during the month including part time services to the Library building due to termination of assigned janitor.

PARK DEVELOPMENT

Progress Report

Proposed Work	Percentage Comp.
1. Playground Equipment Installation	
a. Project C-425 (equipment on hand)	none
2. Fence Installations:	
a. Columbia Playfield (children's are) Proj. S-425	none
b. Columbia Playfield (tennis courts) Proj. S-425	none
c. Riverside Park - Proj. S-450	none
3. Columbia Playfield Recreational Facilities:	
a. Shuffleboard courts - Proj. C-356-R	99%
b. Handball courts - Proj. C-356-R	100%
4. Columbia Playfield:	
a. Parking area "A" - Proj. C-425 (preliminary survey work only)	----

Work orders issued during the month - 28.

PUBLIC LIBRARY

Total circulation for the month was 9,633. The breakdown of circulation is as follows:

Books	Magazines	Records	Inter-Library Loans	Pamphlets
Adult - 5,700	156	536	49	67
Juveniles - 3,125				

Total books - 8,825 Grand Total 9,633

1217394

Parks and Recreation

Total new registration was 274 (adult - 229, juvenile 45).

Books added to the collection - 3,129.

At the recommendation of the Library Board the Library was closed September 18, for a two week period as a means of solving the problem of the backlog of unprocessed books and to clear out the new books waiting for action. Before the date of closing adults were permitted to check out as many books as they wanted and children were allowed ten books each. All books were made due after the Library reopened on October 2, 1951.

During the shut-down most of the new books were completely processed and catalogued.

The children's program has been as follows: During July, August, and September a total of 12 story hour groups for children from kindergarten and above have been held with an attendance of 221; 9 groups of pre-school story hours with 127 attending.

The party for the summer reading program winners was held September 8, with 45 attending. The party was sponsored by the Hanford Works Supervisor Association.

The North Hall of the Library was used for seven meetings and one flower show held by the D. and C. Gardenairs.

The display case located at the south entrance to the building was used by the Camp Fire Girls, and by the Public Health Department in advertising their Baby Clinic.

The Library Board met September 12, at which time they accepted the resignation of the Librarian, Miss Maryan E. Reynolds who is terminating on October 5, to accept the position of State Librarian. Miss Doris C. Roberts was formally approved by the Board as Librarian of the Richland Public Library.

MAJOR ACTIVITIES DURING THE MONTH

September 6	- Richland Schools began Fall Term	
15	- Gonzaga High School vs. Columbia High School	Bomber Bowl
15	- Catholic Church Fall Festival	Riverside Park
20 - 30	- Jr. Chamber of Commerce Carnival	Assembly Area
28	- Prosser High School vs. Columbia High School	Bomber Bowl
29	- Carmichael Junior High School vs. Chief Joseph Junior High School	Bomber Bowl
29	- Supervisors Assoc. Barbecue	Riders Club
29	- Leighton Noble Dance Band	Columbia High Sch.

1217395

COMMUNITY SERVICES

RICHLAND POLICE DEPARTMENT

SEPTEMBER 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-exempt
Employees - Beginning of Month	16	27
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations	0	0
Total - End of Month	16	27

GENERAL

On September 4 an inter-communications system was installed between the lunch room and the police desk. A refrigerator was also installed in the lunch room for the convenience of personnel using this room.

On September 24 in accordance with Article VII of the GE-Hanford Guards Agreement, the patrolmen of the Richland Police Department began working a straight eight hour shift with no lunch period provided.

On September 26 a banquet was held honoring the Police Athletic League baseball team.

A suitable rack was constructed for the Police Department pickup truck to use in the control of dogs. An extensive program will be placed into effect as soon as the new dog ordinance is approved.

During the month, a total of 180 letters were received, compared to 164 last month. These consisted of 166 inquiries on arrests and 14 requests for assistance.

During the month, 37 prisoners were processed through the Richland Jail. Twenty-four of these were from North Richland and one was arrested by the Security Patrol.

During the month, 22 gun registrations were recorded.

During the month, 114 bicycle registrations were recorded.

During the month, 343 traffic violation reports were received. These consisted mainly of speeding and illegal parking. A total of 112 other reports were received. These consisted mainly of larceny and public intoxication cases.

1217396

TRAFFIC

There were 17 reportable accidents in Richland during the month of September. This is five less accidents than were reported for the month of August, but an increase of one more than the month of September last year.. There has been a total of 169 accidents this year to date as compared to 140 accidents for the same period last year. During the month of September, the property damage increased over the preceding month from $111.19 per accident to $354.39. This was chiefly due to a three car accident which resulted in an estimated $2500 damage.

There were four injury accidents this month resulting in minor injuries to six persons. There were no major injuries or fatalities this month as a result of motor vehicle accidents in Richland. This brings the total injuries for this year to 48 as compared to 23 for the same period last year.

Thirteen of the above accidents were investigated by members of the Richland Police Department and criminal complaints were signed against 12 drivers involved in accidents. There were three government vehicles involved in accidents in Richland.

Violations which contributed to the 17 accidents this month were:

Drunken Driving	1
Negligent Driving	7
Failure to Yield Right of Way	7
Hit and Run	1
Animal Permitted at Large	1

School Boy Patrol groups were organized at all of the Richland grade and junior high schools. A new group was organized and outfitted at the Chief Joseph Junior High School. Ptm. Metz conducted meetings with all patrol groups to assist the school director in training the boys and teaching them the duties and obligations of the Patrol. All groups seem to be operating very well at this time. The American Legion is again sponsoring the theater tickets and each boy on Patrol has received his show pass.

During the month of September, members of the Traffic Section were requested to speak at nine safety meetings in Richland and North Richland. Traffic safety films were shown and Richland traffic facts were given to each group. Approximately 275 General Electric employees attended these meetings. The demand for traffic safety meetings has increased greatly as some requests have already been received for the coming month.

Street construction work is progressing and Wright Avenue has been completed. Van Giesen is nearly completed but there is still considerable sign work to be done. All street work should be completed during the coming month. All of the streets under construction will be center lined as soon as construction is completed.

During the month of September, 36 new signs were installed, most of them necessitated by construction, and 22 old signs were replaced.

1217397 17 312

TRAINING

The day for training was changed September 11 from Fridays to Tuesdays.

The subject for classroom training for the month was Accident Investigation Procedure.

Capt. C. F. Klepper and Lt. F. J. Schultz attended an F. B. I. training school at Fort Lewis, Washington, from September 10 to 21.

Training at the small arms range for the period in field instruction was as follows:

Pistol 2 hours

Qualifications on the Army-L Course were as follows:

Score	No. Men	Per Cent
Expert	10	72%
Sharpshooter	2	14%
Marksman	1	7%
Unqualified	1	7%

A total of 14 men reported for police training.

ACTIVITIES AND SERVICES

	July	August	September
Doors and windows found open	49	45	38
Children lost or found	14	20	23
Dogs, cats reported lost or found	10	32	28
Dog, cat, loose stock complaints	30	29	17
Persons injured by dogs	5	3	3
Bank escorts and details	0	0	0
Fires investigated	23	20	15
Miscellaneous escorts	6	11	10
Complaints investigated (No enforcement action)	29	54	63
Deaths reported	0	1	0
Property lost or found	25	44	28
Records inquiries	187	162	174
Law enforcement agencies assisted	3	16	13
Private individuals assisted	17	23	9
Plant divisions assisted	45	54	61
Emergency messages delivered	60	48	46
Totals	547	569	528

1217398

MONTHLY REPORT
RICHLAND POLICE DEPARTMENT
SEPTEMBER, 1951

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART I				
1. Murder	0	0	0	0
2. Rape	0	0	0	0
3. Robbery	0	0	0	0
4. Aggravated Asslt.	0	0	0	0
5. Burglary--Break & Ent.	4	0	2	1
6. Larceny--Over $50.00	8	3	0	1
Larceny--Under $50.00	13	0	0	2
Bike Theft	15	0	0	15
7. Auto Theft	0	0	0	0
TOTAL PART II CASES	40	3	2	19
PART II				
8. Other Assaults	3	0	2	1
9. Forgery	0	0	0	0
10. Embezzlement & Fraud	2	0	1	0
11. Stolen Prop:Buy:Rec:Poss:	0	0	0	0
12. Weapons:Carry:Poss:	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offense	0	0	0	0
15. Off.Ag.Fam. & Child.	5	0	5	0
16. Narcotics--Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	10	0	10	0
19. Disorderly Conduct	0	0	0	0
20. Vagrancy	0	0	0	0
21. Gambling	0	0	0	0
22. Driving While Intox.	5	0	5	0
23. Violation Rd. & Driv. Laws:				
Speeding	100	0	100	0
Stop Sign	23	0	23	0
Reckless Driving	3	0	3	0
Right of Way	6	0	6	0
Negligent Driving	18	0	18	0
Defective Equipment	4	0	4	0
24. Parking	133	0	133	0
25. All Other Traffic	27	0	27	0
26. All Other Offenses:				
Prowlers	11	1	0	10
Dest. of Govt. Prop.	1	0	0	0
Malicious Mischief	4	0	2	0
Vandalism	11	0	2	2
Investigation	5	0	0	5
Runaways	2	0	2	0
Disturbance	30	0	1	29
Animal Poisoning	2	2	0	0
27. Suspicion	1	0	0	0
TOTAL PART II CASES	406	3	344	47

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19

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART III				
28. Missing Persons	4	0	0	4
Lost Persons	17	0	0	17
Lost Animals	7	0	0	7
Lost Property	13	0	0	13
29. Found Persons	6	0	0	6
Found Animals	16	0	0	16
Found Property	17	0	0	17
TOTAL PART III CASES	80	0	0	80
PART IV				
30. Fatal Mot.Veh.Traf.Acc.	0			
31. Pers.Inj.Mot.Veh.Traf.Acc.	4			
32. Prop.Dam.Mot.Veh.Acc.	13			
33. Other Traffic Acc.	0			
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents	0			
38. Dog Bites	3			3
39. Suicides	0			
40. Suicide Attempts	0			
41. Sudden Death & Bodies Fd.	0			
42. Sick Cared For	0			
43. Mental Cases	0			
TOTAL PART IV CASES	20			3
COMPOSITE TOTALS PARTS I,II,III,IV CASES	546	6	346	149

*Cases listed under "Cleared Other" are those cleared by various means other than arrest, such as: orders from prosecutor, juvenile probation officer or other situations in which a mutual agreement is obtained. They are definitely "cleared" cases and differ from the arrest column in that there were no arrests.

Property Reported Stolen During Month $1553.83 (15 Bikes)
Property Recovered During Month 521.38 (15 Bikes)

SEE PAGE THREE FOR JUVENILES INVOLVED.

1217400

PAGE THREE RICHLAND POLICE DEPARTMENT MONTHLY REPORT FOR SEPTEMBER, 1951 JUVENILES INVOLVED

OFFENSES	NO.	JUVENILES	SEX	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
			M									1								1
ASSAULT	1	1	F																	0
BURGLARY	2	4	M															2	2	4
			F																	0
DISTURBANCE	2	3	M										1	1	1					3
			F																	0
INVESTIGATION	2	7	M															2	1	3
			F												2	1	1			4
VANDALISM	2	6	M									1		1			1	1		4
			F											2						2
MALICIOUS MISCHIEF	2	3	M										1				1			2
			F							1										1
TOTALS.....	11	24								1		2	2	4	3	1	3	5	3	24

1217401

Number of offenses known to police per 25 000 inhabitants in cities of 2, 000 persons:

Six Months(Jul -Dec. 1950)	Wash. Ore. & Calif.	One Month Average	Richland (July-Dec. 1950)	Richland August 1951	Richland September 1951
Murder	.76	.13	0	0	0
Robbery	19.8	3.3	0	0	0
Agg. Assault	14.9	2.4	0	0	0
Burglary	128.1	21.3	12	4	4
Larceny	392.	65.3	155	22	21
Auto Theft	57.	9.5	12	0	0
Bike Theft			134	17	15

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Six Months(July-Dec 1950)	State of Washington	One Month Average	Richland (July-Dec.1950)	Richland August 1951	Richland September 1951
Murder	.74	.12	0	0	0
Robbery	16.7	2.8	0	0	0
Agg. Assault	5.0	.8	0	0	0
Burglary	120.4	20.0	12	4	4
Larceny	377.6	62.9	155	22	21
Auto Theft	54.5	9.0	12	0	0
Bike Theft			134	17	15

The portion of offenses committed by persons under the age of 25 years is shown:

National Average Percentage of Cases (July-Dec. 1950)		Wash. Ore. Cal. Actual Cases (July-Dec. 1950)	Richland (July-Dec.1950)	Richland August 1951	Richland September 1951
Robbery	54.1	.23	0	0	0
Burglary	61.6	6.0	1	2	2
Larceny	45.4	4.5	24	1	0
Auto Theft	67.3	17.3	0	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from The Uniform Crime Report published by the Federal Bureau of Investigation, which states:"It should be remembered that the number of arrests recorded is doubtless incomplete in the lower group because of the practice of some jurisdictions not to fingerprint youthful offenders."

1217402

POLICE DIVISION - TRAFFIC CONTROL STATISTICS
SEPTEMBER, 1951

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	22	17	0	0	0	0	5	6

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	7	7	7	7	0	1	8	4

PLANT WARNING TRAFFIC TICKETS ISSUED:

Richland: NO WARNING TICKETS ISSUED FOR AUGUST, 1951; ONE WARNING TICKET ISSUED FOR ILLEGAL PARKING IN SEPTEMBER, 1951

TRAFFIC CHARGES AND COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		Stop Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept
Richland	44	98	31	24	2	6	4	4	2	3	13	17	95	126	15	32	206	310

TRAFFIC VOLUME: Average 24-Hour Traffic Volume Count for week ending September 28, 1951, Thayer and Van Giesen-5,067 cars.

NOTE: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

1217403

RICHLAND POLICE DEPARTMENT
RICHLAND JUSTICE COURT CASES
SEPTEMBER 1951

VIOLATION	NO OF CASES	NO OF CONV.	NO OF FORF.	CASES CONT.	CASES DISM.	WARR. ISS.	SENT JAIL	SENT SUSP.	LIC. REV.	CASES ORIG. PREV. MON.	CASES INCL. OTHER VIOL.	BAIL FORF.	FINES	FINES SUSP.
Def. equip.	4	1		3							1	$	$ 7.50	$
Drunken dr.	8	5	1	2			1		5	1		100.00	352.50	75.00
Dr. license	15	6	7			2				1	6	15.00	47.50	22.50
Dr. while lic. rev	2	2					2						200.00	200.00
F.T.O.P.O.	1		1									27.50		
F.T.S. & I.	3	1			1	1				1			27.50	27.50
F.T.Y.R.O.W.	3	1	1		1							12.50	5.00	
Hit & run	1	1					1	1					102.50	
Ill. parking	129	34	73	4		18				3		275.10	120.50	100.50
Ill. passing	1		1								1			
Impr. lic. plates	4	3	1								3	7.50		
Negligent dr.	22	10	5	4	2	1				3		107.50	157.50	35.00
No registration	3	2			1						3			
Reckless dr.	4	3		1					3				95.10	40.10
Speeding	103	29	63	6	1	4				5		733.00	335.00	42.50
Stop sign	27	7	17	3						1	1	95.50	40.00	15.00
Aiding & abetting by person under influence of intoxicants.	1	1											100.00	
Disorderly conduct	1	1					1							
Drinking in public	1	1								1			7.50	
Four persons in front seat.	1		1									5.00		
Larceny by check	1	1											22.50	
Permitting minor to operate vehicle.	1	1											7.50	
Public intoxication	11	10	1							1		17.50	140.00	37.50
Third degree assault	2	2					1	1					27.50	27.50
Vagrancy	1	1											100.00	50.00
TOTAL	350	123	172	23	6	26	6	2	8	17	15	$1396.10	$1895.60	$673.10

24

1217404

NOTE: 1 Drunken driving amneded to public intoxication.
1 F.T.Y.R.U.W. amended to running stop sign.
2 Reckless driving amended to negligent driving.

1217405

COMMUNITY SERVICES

RICHLAND FIRE DEPARTMENT

SEPTEMBER, 1951

ORGANIZATION AND PERSONNEL:	Exempt	Non-Exempt
Employees - Beginning of Month	50	0
Transfers In	0	0
Transfers Out	0	0
New Hires	1	0
Terminations	0	0
Total - End of Month	51	0

Fire Protection:

Fire Loss (Estimated):	Government	$ 62.20
	Personal	304.75
	Total	366.95
Response to Fire Alarms		17
Investigation of Minor Fires and Incidents		8
Ambulance Responses		22
Airport Standby		19
Inside Drills or Schools		46
Outside Drills		41
Safety Meetings		8
Security Meetings		4
Fire Alarm Boxes Tested		184

Four Brownie groups, totalling 32 girls, visited No. 1 Fire Station. Two teachers and 22 students also received conducted tours of No. 1 Fire Station.

On September 11th Engine 3 was detailed to flush out an acid spill at Building 712-B.

On September 28th three chlorine masks were serviced for Public Works.

Fire Prevention:

A total of 119 fire inspections were made in September resulting in 19 hazard reports. Fifty-seven fire extinguishers were inspected, thirty six refilled, eleven found defective and fifteen installed.

Sixty-six manhours and $37.41 in materials for fire prevention services were charged to other sections.

Assistant Fire Marshal addressed 22 employees of the Telephone Section and 35 employees of the Purchasing Section on home Fire Safety.

1217406

Administrative Captain addressed Boy Scout Court of Honor audience inviting scouts to attain Firemanship Merit Badge during Fire Prevention Week, October 7-13.

Fire Marshal addressed a meeting of the Richland Chamber of Commerce on sponsorship of Fire Prevention Week and later met with the Chamber Fire Prevention Committee on plans for the campaign.

Fire Marshal participated in a discussion of Fire Prevention Week activities at the Richland Safety Council monthly meeting.

Almost all Fire Prevention Week promotional material was received. Signs have been made; schools, churches, clubs, merchants, youth groups and others asked to participate in the campaign. The publicity chairman submitted five publicity releases and radio scripts to the News Bureau.

Fire Department inspection of residential furnace and utility rooms was arranged to start October 8th.

Survey made of Chief Joseph Junior High School fire protection equipment installed and connected in the school. School authorities were advised of fire extinguisher needs in this building. Inspection of all other schools revealed the best conditions encountered to date and the Superintendent of Schools so advised.

At the request of the Richland Chamber of Commerce, data was obtained on latest improvements in the Richland water system.

Investigation of electrical fire at Densow Drug revealed poor wiring conditions in fluorescent light fixtures. Owners were asked to have entire lighting system inspected and repaired.

Inspection of wiring in Pennywise Drug revealed numerous hazards. Requested that all circuits be tested for overload. Eight circuits were later divided and four additional ones installed to eliminate the overloaded condition.

Requested a sub-contractor remove all crates and packing material from railroad siding in the 1100 Area. Request complied with.

At Fire Marshal's request a measuring device was installed on emergency generator fuel tank at 784-A Bldg., thus eliminating hazardous spillage.

At request of Plant Safety, a special inspection was made of hotplates and other hazards in the 700 and 1100 Area plant building lounges.

Fire Marshal attended a conference with AEC Engineering and AEC Community Management for discussion of hazards in the 4th Housing Addition.

1217407

COMMUNITY SERVICES

ENGINEERING UNIT

SEPTEMBER, 1951

Personnel

Number of employees on payroll:

	Exempt	Non-exempt	Total
August 31, 1951	7	5	12
September 30, 1951	7	5	12

The Status of Active Projects is as follows:

K-562 - Automatic Irrigation Levee 2-C - Plans and specifications in bid assembly at contract supervisor's office ready for subcontract.

L-017 - Tract House NN1040 - Improvement - Work performed by subcontract and completed September 21, 1951, and accepted with no exceptions.

L-243 - Fencing Irrigation Canal South of Carmichael Junior High School - Work 100% complete - prepared Project Physical Completion Notice 9-25-51.

L-262 - Water and Sewer - Assembly of God Church - Plans and specifications in bid assembly at contract supervisor's office ready for subcontract.

L-575 - Parking Lots - Facilities - Request for modification of subcontract - G-390 to provide for surfacing of these parking lots. dated 9-24-51 to H. E. Price for negotiation.

L-589 - Increased Radii at Swift and Goethals - Drawings complete, ready for transmittal to H. E. Price.

S-299 - Radio Communication System - 100% complete except for re-installation of one speaker in fire truck. Work is accepted.

S-342 - Repair of roof over lobby and new wing - 703 Building - Work 100% complete and accepted. Preparing Project Physical Completion Notice.

S-405 - Street Tree Planting - Additional Erosion Control - Planting is again to be resumed late in October.

S-450 - Fence at Riverside Park - Job has been awarded - Waiting for Notice to Proceed to subcontractor.

S-479 - Fire Protection - Chief Joseph School - Contract Awarded - Construction began September 26, 1951. Anticipated job will be complete in about 20 days.

C-356 - Recreation Facilities Equipment for Schools and Public Grounds - Work 100% complete as of September 15, 1951. Final inspection with AEC slated for October 2, 1951.

C-357 - Alterations to Sewage Lift Station - Subcontractor's work completed and accepted by formal acceptance with exception of two pieces of electrical equipment which will delay completion by at least 60 days. One right angle drive returned to fabricator for change in direction of drive. Re-ordering and installation will delay closing of Project by at least 60 days.

12 [illegible] 08

C-408 - Additional Erosion Control - Irrigation of Public Grounds and Shelter Belt Planting - Construction work on site grading and irrigation system is 90% complete. Project Proposal for additional funds for tree planting has been approved and subcontracter for this work will be requested as soon as the Directive is received.

C-425 - 1951 Park Development Program - Plans and specifications estimating quantities and Fair Price Estimate are approximately 80% of work. Remaining work not completed includes installation of playground equipment, surfacing, and outdoors equipment and tree planting at approximately ten locations. Remaining funds are anticipated sufficient to perform this work.

C-4256 - Fencing at Columbia Playfield - Fencing small children's playlot and Tennis court. Job has been awarded waiting for Notice to Proceed to subcontractor.

C-426 - 67% complete as of September 21, 1951
C-4261 - Van Giesen Street - Nearing completion.

C-4262 - Wright Avenue - Complete except for extension on the south.

C-4263 - Symons Street - Not started. Will start curb work on the 26th.

C-4264 - George Washington Way, South - Ready for Paving.

C4266 - George Washington Way, North - Storm Sewer system and curb work complete.

C-4265 - Swift Blvd. - Storm sewer system complete. Most of curb work finished.

C-4267 - Chief Joseph School - Walks and surfacing yet to go.

Status of Active ESR's

176-CA - Northwest United Protestant Church - Final inspection to be made.

235-PW - Town Planning Board Work - Def. for other work.

369-CA - Site Map CAP Field - Def. for other work.

496-RC - Richland Lutheran Church - Front Addition - 98% complete - Work progressing

510-M - Roads and Streets Drawings - 1950 Construction - Def. for other work.

547-MD - Fixed Irrigation System - Field survey in progress preliminary to design.

552-MF - Fire Protection - Desert Inn and Richland Theater - Project estimate 100% complete. Sent to Public Works for handling.

561-SD - Chief Joseph Grounds - Plans and specifications 5% complete with anticipated completion early in October.

565-RC - Site South of Tract House 5-1224 - Def. for other work.

566-RC - Site Standard Oil Company of California #2 - Def. for other work Description written and approved; plot plan is drawn and ready for reproduction.

572 - M - First Baptist Church - Work progressing 20% complete

573-M - Westside United Protestant Church - Work temporarily delayed.

577-RC - All Saint's Episcopal Church - Legal description - written and approved.

578-PR - Inspection of Underpinning - Social Hall Community House - 80% complete.

579-MS - Goethals Drive to Williams - Def. for other work

581-RC - As Builts for LDS Church - Plans returned to building committee for correction.

583-RC - Commercial Development (East of Railroad, West of 1125 Warehouse, and south of Lee Blvd.) Study being made.

585-M - Anderson Motors addition - Construction work progressing - 50% complete

586-M - Standard Oil Station - Construction started September 24, 1951

587-M - Central Stores Warehouse - Work on plan checking completed. Letter to AEC pending.

590-PR - Rehabilitation of Bomber Bowl Fence - Design 60% complete.

591-M - Preparation of advice pamphlet for contractors - Rough draft nearly complete.

592-RC - Site -Dairy Queen Ice Cream - Legal description written - plot plan being drawn.

593-M - Fence Around Sewage Lift Station - Design 30% complete.

594-M - Fence Around Well #15 - Design 20% complete.

595-M - Shell Oil Company Addition - Construction started Sept. 24, 1951.

HOUSING AND REAL ESTATE MAINTENANCE UNIT

September, 1951

ORGANIZATION AND PERSONNEL			September
Number of employees on payroll			
Beginning of month	23	Exempt Employees	
	196	Non-Exempt Employees	
	219		219
End of Month	22	Exempt Employees	
	196	Non-Exempt Employees	
	218		218

Richland Housing

Housing Utilization as of Month Ending September 30, 1951

Houses Occupied by Family Groups	Conventional	Block	T	Precut	Ranch	Prefab	Apt	4th Add	Tract	Total
G.E.Employees	2214	254	9	383	836	1151	58	83	38	5026
Commercial Facilities	90	11	1	28	72	63	8	4	5	282
Community Activities	9				7	4			1	21
Medical Facilities	5	15			1	1		2		24
Post Office	6			1	3	12			3	25
A.E.C and other Government	89	30		16	38	15	1	6	5	200
School District	46	1		5	12	56	1			121
Kellex Corporation	7	3		4	9	5	1			29
Atkinson Jones	9	13		4	12	4	1			43
Newberry Neon	3	1		1			1	1		7
Vernita Orchards									4	4
J.G.Turnbull					1	1				2
Roberts Filter Co.	1									1
V.S.Jenkins					1					1
Hanley Company					1		1			2
Urban Smythe & Warren		1					1	1		3
Charles T. Main Inc.				1	3	7				11
Total Houses Occupied	2479	329	10	443	996	1319	73	97	56	5802
Houses assigned-Leases written	6	1		2	3	5	1	29		47
Houses assigned-Leases not written	1	2		2		1		10		16
Houses available for assignment	14	1		3	1	17				36
Total Houses	2500	333	10	450	1000	1342	74	136	56	5901

	Begin month	Moved In	Moved out	Month end	Difference
Conventional Type	2484	58	63	2479	Minus 5
Block Type	327	8	6	329	plus 2
"T" type	10			10	
Precut type	444	13	14	443	Minus 1
Ranch type	993	19	16	996	Plus 3
Prefab type	1318	51	50	1319	Plus 1
Apartments	73	6	6	73	
Fourth Housing Addition	44	54	1	97	Plus 53
Tract	56			56	
Total	5749	209	156	5802	Plus 53

1217412

TENANT RELATIONS WORK ORDER AND PROGRESS REPORT - MONTH OF SEPTEMBER, 1951

Processing of Service Orders, Work Orders & Service Charges

	Orders Incomplete as of August 31	Orders Issued 8-31 to 9-30	Total Orders Incomplete as of September 30, 1951
Service Orders	275	2426	360
Work Orders	2741	591	2011
Service Charges	21	333	70

Principal Work Order Loads

	Incomplete as of August 31, 1951	Incomplete as of September 30,1951
Laundry tub replacements	205	179
Bathroom Renovations (tub-lino-tile)	167	136
Tileboard Only(Bathroom)	1	-
Kitchen Cabinet Linoleum	140	101
Kitchen Floor Linoleum	21	8
Shower Stalls	106	82

Alteration Permits Issued During the Month of September totaled 79 compared to 90 issued in August.

Floors sanded	4	Basement excavation	2
Install storage shed	2	Install oil burner	6
Install glass in sun porch	2	Install wall receptacle	1
Install air conditioner	3	Install radio antenna	2
Install auto. dishwasher	2	Install electrical wiring	2
Install back door	1	Excavation of basement	6
Install fence	10	Install clothes poles	1
Install tileboard in bathroom	1	Install greenhouse	1
Install auto. coal stoker	2	Install dog house	2
Install auto. washer	19	Install driveway	1
Install auto. dryer	8	Glaze porch	1

1517 Inspections were made during the month of September compared to 2470 made during August.

Alteration permits	26	Garage	1
Bathtubs	63	Shower stalls	23
Cupboards	11	Sidewalks	15
Floor Boards	4	Kitchen Inspections	20
Grass seed	74	Sinks	19
House Siding	2	Tileboard	58
Jack & Shim	1	Toilet Seats	6
Excavate Basement	9	Top Soil	25
Leaking Basement	14	Cancellations	184
Linoleum	140	Renovations	139
Lot Lines	30	Shows (New Tenants)	214
Paint	73	Walls	33
Porch & Steps	29	Windows	13
Screen Doors	30	Miscellaneous	261

121413

DORMITORY STATISTICS

Dormitories:

		Occupants	Vacancies	Total Beds
Men Occupied	15	616	0	616
Men Unoccupied	0			
Women Occupied	12	*481	0	481
Women Unoccupied	0			

Women's Dormitories Occupied by:

G. E. Office	2
Education	1
Apartments	1

* This includes space of 2 beds in W-9 used for supply rooms and dormitory offices.

There are 230 men waiting for rooms in Richland
There are 18 women waiting for rooms in Richland.

GENERAL

Houses Allocated to new tenants	105
Exchanged Houses	14
Moves (Within the Village)	89
Turnovers	5
Total Leases Signed	200
Terminations	51
Total Cancellations	154
Applications Pending	703

ALLOCATION SECTION STATISTICS

Voluntary Terminations	29
R.O.F.	0
Discharge	1
Transfers	10
Retirement-Divorce-Misc.	4
Houses Assigned "As Is"	88
Move Off Project	7
Houses Sent to Renovation	41

MISCELLANEOUS STORES WAREHOUSE INVENTORY SUMMARY
MONTH ENDING September 30, 1951

	EXPENDABLE ITEMS	FURNITURE (GEN LEDGER)	FURNITURE (KARDEX CONT)	PLANT ITEMS	TOTAL
BEGINNING BALANCE	$42,048.49	$24,851.82	$22,160.62	$45,341.76	$112,242.07
RECEIPTS:					
On Purchase Orders	179.00				
On Store Orders	323.17				
From Excess					
From Housing	110.29		500.31	2,994.27	
From Dormitories			2,129.30		
From Other (Misc.)					
TOTAL RECEIPTS	$ 617.46	$	$ 2,629.61	$ 2,994.27	
TOTAL AVAILABLE	$42,665.95	$24,851.82	$24,790.23	$48,336.03	
DISBURSEMENTS:					
Cash Sales (Backcharge)	69.97				
To Excess	4,728.00	17,392.59	17,392.59	7,247.99	
To Salvage					
To Housing	2,087.59		23.40	1,253.47	
To Dormitories	530.16		82.33		
To Dormitories - Linens	18.35				
Dorm-Shades & Reflectors	13.73				
To Warehouse Supplies	26.69				
To Other (Misc.)	82.74			301.50	
TOTAL DISBURSEMENTS	$7557.23	$17,392.59	($17,493.32	$ 8,802.96	
ENDING BALANCE (1) (2) (4)	35,108.72	7,459.23	($ 7,291.91)	$39,533.07	$82,101.02
NET CHANGE	$ 6,939.77	17,392.59	14,868.71	5,808.69	

ENDING BALANCE GENERAL LEDGER (BALANCE - COL. 1 PLUS COL. 2) 42,567.95

COLUMN 3 FOR LOCATION CONTROL ONLY - COLUMN 4 MEMO ACCOUNT ONLY

EXCHANGED	PIECES
DORM FURNITURE	100
RANGES	4
REFRIGERATORS	2
PREFAB HEATERS	27

COMMENT:

1217415

35

329

DORMITORY REPORT FOR SEPTEMBER, 1951

92 MINOR REPAIRS TO FUSES, PLUMBING, ETC.

16 WORK ORDERS STEAM, GLASS, EQUIPMENT, ETC.

59 PIECES OF FURNITURE REPAIRED.

100 HOUSEKEEPING CONTACTS

335 LIGHT GLOBES REPLACED.

77 ROOMS VACATED.

LINENS LAUNDERED

8,644 SHEETS

4,415 PILLOW CASES

288 BED SPREADS

70 BED PADS

238 SHOWER CURTAINS

0 PAIRS DRAPES

121716

HOUSING AND REAL ESTATE MAINTENANCE

September, 1951

I. ORGANIZATION AND PERSONNEL:

	Exempt	Non-exempt	Total
A. Beginning of month:	13	147	160
B. End of month:	13	149	162

II. REALTY MAINTENANCE BACK-LOG REPORT.

TYPE OF WORK	OLDEST ISSUE DATE	BACK-LOG	RATE OF REPLACEMENT
Bathtubs , including tile board (bath) floor linoleum (bath) Painting (bath)	5/51	136	2 to 4 daily
Tile Board - A & J (other than tub installation)	None	None	None
Tile Board - Conventional (other than tub installation)	None	None	None
Painting (Misc.)	9/51	15	As notified
Kitchen floor lino. (Prefabs)	None	None	None
Kitchen floor lino..(Conv.)	9/51	8	Current
Bath. floor lino (Prefabs)	11/50	8	As notified
Bath. floor lino (Conv.)	None	None	None
Kitchen sink lino (Prefabs)	5/51	86	20 weekly
Kitchen sink lino (Conv.)	9/51	15	Emergency only
Shower Stall Installations	1/51	82	Approx. 20 weekly, when possible.
Prefab Cupboard Doors	9/51	2	Current
Laundry Trays	5/50	179	14 weekly

III. MAINTENANCE TRANSPORTATION FACILITIES.

Heavy Maintenance

TRUCK TYPE	NUMBER IN POSSESSION	CRAFT
1½ Ton Flatbed	11	Carpenters
Cushman Scooter	1	Carpenters
1/2 Ton Pickups	7	Carpenters
3/4 Ton Power Wagon	1	Carpenters
3½ Ton Dump Trucks	2	Labor
1/2 Ton Pickups	3	Labor
1½ Ton with Monorail	1	Millwrights

12 14 17

(Continued on Page 2)

(Transportation Facilities, Cont'd.)

Panel		1	Sheetmetal
3/4 Ton Walkin		1	Millwrights
1/2 Ton Pickups		2	Millwrights
Panels		3	Painters
1½ Ton Flatbed		1	Painters
1/2 Ton Pickups		5	Plumbers
3/4 Ton Pickup		4	Plumbers
	Subtotal:	43	

SERVICE ORDERS

1/2 Ton Pickup		3	Plumbers
1/2 Ton Pickup		4	Electricians
1/2 Ton Pickup		1	Glazier
1/2 Ton Pickup		1	Locksmith
1/2 Ton Pickup		2	Carpenters
	Subtotal:	11	

RENOVATIONS

Chev. Carryall		1	Painters, Janitr.
1/2 Ton Pickup		2	Carpenters
	Subtotal:	3	

GENERAL

Sedans		2	Supervision
	Subtotal:	2	
	GRAND TOTAL:	58	

IV. PROGRESS REPORT

A. CYCLE PAINTING:

85 units of housing had miscellaneous carpenter repairs, and were painted on the Interior Paint Program.

2 A & J kitchens were enameled.
13 basements were sealed in order to stop leaks.
180 miscellaneous paint jobs completed throughout the city.

B. LINOLEUM AND TILE:

172 houses had floor linoleum replaced.
113 houses had sink or table top linoleum replaced.
76 bathtubs were installed.
71 bathrooms had new tile board installed.
904 units of housing had sinks, tubs and tile board chempointed.

The monthly backlog reveals a rather heavy load of kitchen sink linoleum which is the Carpenter craft work. It is to be noted that the backlog is not due to a shortage in the Carpenter craft, but that this work necessitates the aid of a plumber, and this craft is not available.

It is also noted that the Chempoint program was very heavily worked during the month of September. This is due to a critical shortage of Carpenter work,

(Cont'd. on Page 3)

and this craft had to be assigned to this type of work in order to keep from charging to idle time.

C. CARPENTRY, GENERAL:

The carpenter repairs to the houses in Division II and III which are scheduled for exterior painting, are now approximately 90% completed. This work will be completed by October 8, 1951.

Aluminum roof coating was applied to 4 Commercial buildings and 12 conventional type house roofs.
8 one bedroom Prefabs had old type sliding doors replaced.
6 A & J houses had old plywood soffits replaced.
21 houses had porches and steps repaired.
12 houses had sash balances replaced.
22 houses had rear slabs raised and thresholds replaced.
4 houses had front doors replaced.
4 Ranch houses had windows repaired.
79 window screens were repaired.
8 houses had leaks repaired by replacing shingles.
8 Prefabs had new weep holes drilled in windows.
4 cold air registers replaced.
10 houses had missing or damaged shakes replaced.
Repaired ceiling in Richland Theater.
10 houses had new screen doors replaced.

D. CARPENTER SHOP

Routine work such as filing of saws, sharpening of tools, repair of ladders, repair of office furniture, upholstering of furniture and shop painting continued throughout month.

8 KV chairs upholstered.
8 KC chairs upholstered.
1 office chair upholstered.
1 davenp upholstered.
Shoe Truck seat repaired.

E. GENERAL PLUMBING.

The following is a summary of the work completed by the work order Plumbing Group for the month of September:

Installed 78 bathtubs.
Installed 34 laundry tubs, cast iron.
Installed 18 water heaters.
Installed 39 Prefab shower installations.
Cleaned 13 sewers that were clogged with roots growing in them.
Completed 222 linoleum orders consisting of removing kitchen sink faucets and replacing same.
Removed toilet bowls and replaced them for linoleum.
Completed 18 bath faucet repairs after tile was installed.
Completed 21 plumbing work orders consisting of repairing water breaks, replacing new fixtures, new piping and etc.
Completed 28 steam work orders consisting of repairing steam valves, leaking pipes and adjusting steam valves.
Revised heating system and hot water system at Municipal Bldg. and Fire Station.

12-14-49

(W.O. Plumb. Cont'd)

Installed new septic tank drain field at K734.
Worked on Service orders 12½ hours.
Checked Dorms. and Commercial Bldgs. once a week for steam leaks on hot water tanks.

F. MILLWRIGHTS.

Routine inspection on furnaces have been carried on during the month of September. The A & J houses have been completed and inspection has been started in Division III on Conventional houses.

G. SHEETMETAL.

During the month of September the following work was completed by the Sheetmetal Group:

48 shower stalls were installed.
50 houses in Division III had gutters replaced.
Fabrication for the house numerals was began.
Routine replacements work of smoke pipes.
Replacements of registers, cold air returns and heat pipes were carried on throughout the month.

H. RENOVATIONS.

During the month of September there was a total of 48 houses processed through the Renovation Group. Of these 48 houses, 19 received complete painting and cleaning, 8 houses partial painting and cleaning and 21 houses received cleaning only.

I. SERVICE ORDER GROUP

The following is a status report of Service Orders:

On hand at the beginning of the month:	275
Received during the month:	2631
Completed during the month:	2426
On hand at the end of the month:	490

Plumbing backlog

1. Replacement of rusted out sink strainers which in the case of the Prefabs means the complete change out of the traps and continuous wastes: 137 orders at an estimate of approximately 275 man hours.

2. Renovation: 26 orders or approximately 120 man hours.

   a. Includes clearing all drains, repairing or replacing anything defective.

3. Shower rods and brackets: 32, approximately 25 man hours.

4. There is a total backlog of approximately 360 Service orders, which includes the above type of work, and an estimate of approximately 750 man hours.

Electrical:

Four electricians on Service Orders; two on loan to General Services.

334

We have had an increase in Service Order calls, in the past week to the extent that we are running two days behind in servicing the Tenant.

Lock and Key Shop:

Approximately 200 man hours backlog.

Carpentry and Glazing:

Has increased, but no large backlog.

J. LABOR

During the month of September, the Labor Group completed routine work such as pumping septic tanks, oil storage tanks and grease traps.

Numerous miscellaneous jobs such as walk repair, miscellaneous excavation, clean-up of parking areas, hauling top soil, trash pick-ups and oiling graveled roads were completed.

REAL ESTATE ENGINEERING UNIT
SEPTEMBER 30, 1951

Following is the status of projects being handled by this unit:

L-330, Heating Equipment in "T" Type Houses (Subcontract No. G-399)

This project was physically complete September 17, 1951. "Project Physical Completion Notice" issued September 19, 1951.

L-483, Rehabilitation of Burned Prefab - 1313 Potter Avenue

This project was physically complete August 21, 1951. "Project Physical Completion Notice" issued September 10, 1951.

S-321, Re-arrangement of Steam Valve Pits at Dormitories (Subcontract No. G-405, Weston Plumbing Company)

The subcontract for the performance of this work was approved by AEC September 24, 1951. Notice to Proceed issued September 24, 1951. Field Release 2 issued September 28, 1951. The subcontractor is expected to start work in the first week of October 1951.

S-379, Interior Painting Prefabs

Project completed June 30, 1951. Final Estimate for payment to subcontractor withheld pending determination of final quantities.

S-477, Service Access Panels in "U" and "V" Type Houses

Work progressing. Project is approximately 85 percent complete.

C-407, Replacement of Bathtubs, Tileboard and Linoleum

Project completed. "Project Physical Completion Notice" issued September 10, 1951.

C-448, Rehabilitation of 1341 Prefab Houses

Project is 100 percent complete. Final inspection and cleanup work in progress.

L-551, Construction of Concrete Block Retaining Walls and Turn-Ins On Goethals Drive and Casey Avenue

Project physically complete. A "Project Cost Estimate" prepared from actual cost figures has been forwarded to the CPFF Labor and Services - Minor Construction Division for signature. This estimate will be used in obtaining approval for additional funds to cover the $152 overrun on this project.

1217422

COMMERCIAL PROPERTY - REAL ESTATE SECTION

SEPTEMBER, 1951

PERSONNEL - COMMERCIAL PROPERTY:

	September
Beginning of month	13
End of month	13
Net difference	0

PERSONNEL - COMMERCIAL AND NONCOMMERCIAL FACILITIES:

	Commercial	Noncommercial	Total
August	1,286	104	1,390
September	1,282	107	1,389
Net decrease			1

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	55	2	57
Back Charges	2	0	2
Service Orders	15	3	18

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Supplemental Agreement:

Hanson Enterprises, Inc. - to provide for the Lessee to pay a flat rental sum to the Lessor for the subrental space occupied by radio station KALE.

2. Assignment of Lease:

The Mixer - A. J. Deymonaz and L. F. Deymonaz, assignors, to A. J. Deymonaz, assignee, for the continued operation of a combination fountain lunch and smoke shop.

3. Letters of Authorization:

(a) James R. Parcell - to construct an addition 30 feet by 50 feet adjoining the north end of his original building to expand tune-up and brake adjusting facilities and to provide space for front-end alignment work.

(b) L. C. Foisy - to sell the tavern business, including fixtures and equipment, located in the Richland Recreation Hall, to Messrs. George Forsyth and Sam Volpentest and to sublet the space to them for the continued operation of the tavern.

4. Letter of Award:

Otto S. Allred was awarded a long-term lease for a ground site on Stevens Drive in the Light Industrial Area for the construction, operation, and maintenance of a Dairy Queen ice cream store.

B. Noncommercial:

1. Supplemental Agreement:

U. S. Veterans Administration - to amend the basic agreement in reference to the street address of the agency.

2. Contract of Sale:

American Red Cross - covering the sale of Government-owned fixtures and equipment.

SUMMARY OF OCCUPANCY AND EXPANSION STATUS:

A. Commercial:	August	September
1. Number of Government-owned buildings	37	37
(a) Number of businesses operated by prime lessees	41	41
(b) Number of businesses operated by sublessees	15	16
(c) Total businesses operating in Government-owned buildings	56	57
2. Number of privately-owned buildings	41	41
(a) Number of businesses operated by prime lessees	38	38
(b) Number of businesses operated by sublessees	32	32
(c) Total businesses operating in privately-owned buildings	70	70
3. Total Number of businesses in operation	126	127
4. Doctors and dentists in private practice, leasing space in Government-owned buildings	21	21
5. Privately-owned buildings under construction	0	1

12174.24

B. Noncommercial:	August	September
1. Government-owned buildings		
(a) Churches	4	4
(b) Clubs and organizations	9	9
(c) Government agencies	3	3
Total	16	16
2. Privately-owned buildings		
(a) Completed and in use	6	6
(b) Under construction	6	6
(c) Sites tentatively allocated or leases in process of negotiation	7	7
Total	19	19
3. Pasture Land Assignments	35	35

GENERAL:

A. Commercial:

1. Standard Oil Company of California - construction work was started on an automotive service station to be located at the southeast intersection of Lee Boulevard and Gillespie Street.

2. Parcell's Automotive Service - construction work was started on an addition to the Facility building.

3. George Forsyth and Sam Volpentest assumed the management, under sublease agreement, of the tavern in the Richland Recreation Hall, for the continued operation of the facility.

COMMERCIAL PROSPECTS:

A number of applicants expressed an interest during the month in establishing and operating businesses in Richland. Inquiries were received concerning the following types of commercial enterprises:

Automotive Dealership	Floral Shop
Drive-in theater	Multiple Business Building

1217825

700 1100 3000 AREA SERVICES SECTION
MONTHLY REPORT
SEPTEMBER 1951

700 1100 AREA MAINTENANCE & STEAM

General Maintenance:

Routine and preventive maintenance program continued during the month.

Inspections are being made of the electrical services in the commercial facil ities buildings, with work requests forthcoming for performing the recommended work Inspection and repair is complete at Pennywise Drug Store. Inspection completed at Campbell's No. 2 Food Market, repairs will be completed October 2. Recreation Hall electrical repairs completed. Others will be completed as rapidly as possible

Much effort has been expended to expedite work on control panels for Civil Defense air raid sirens. One unit has been completed to the stage of testing and the "bugs" worked out. Our over all job is 50% complete.

Reproduction equipment, Building 760: Black and White reproduction machine given general overhaul; Ozlid machine required extensive minor repairs.

Excessing program required two carpenters half time, approximately 160 hours, for the month.

Two Hauserman partitions were installed in 703 Building.

Nine laundry carts were made and miscellaneous building repairs completed.

The safety signs in front of 703 Building and at 300 Area Barricade are being changed to conform with the recent organizational changes.

Five security signs have been redone; several name plates made.

Started interior painting at Kadlec Hospital, 3 rooms completed. Striped and stenciled 1,000 compressed gas cylinders.

Alteration to the piping of 703 Building sprinkler system completed.

Steam and condensate riser piping inspected and replaced where necessary in 705 Building; similar work on 703 Building now in progress. Inspection reveals this piping is eaten away badly, and that much of it would not last through the cur rent heating season

Four inch service valve was installed on steam line for the new 70 apartment service.

Overhaul of No. 3 boiler completed and boiler ready for service.

New sizing grates were installed in the coal crusher. It is believed those re moved were original installation and they were found to be badly worn.

Repaired steam leak in Rio Wil near Lee and George Washington; leak was found at welded joint

1217426

Steam Operation:

Increased heating load requirements in the latter part of the month made it necessary to place No. 2 boiler in service on September 27, in addition to No. 4 boiler which was on the line. Two boilers were required for the remainder of the month.

The soft water line to Kadlec Hospital was in service for 718.1 of the 721 hours in the month.

Preliminary testing of 1131 Bus Terminal boiler plant and heating system in the buildings was undertaken in the latter part of the month, in preparation for the coming heating season.

Steam generated - 9,315.4 M. lbs.; steam leaving plant - 7,918.1 M. lbs.; steam delivered 6,043.5 M. lbs.; coal consumed 716.55 net tons; total water softened - 4,622,300 gallons; soft water sent to Kadlec Hospital - 3,131,200 gallons; soft water used at 784 Boiler Plant - 1,491,100 gallons.

NORTH RICHLAND FIRE

Alarm No.	Response to Alarms	Cause for Alarms	How Received
104	13th & "W"	Smoker's Carelessness	Phone
105	Drug Store, 6th & "M"	Grease Pot Boiled Over	Phone
106	North of Equipment Yard	Sparks from Welding Torch	Phone
107	Horn Rapids & North Stevens	Hot Ashes in Combustibles	Phone
108	Drug Store, 6th & "M"	Grease Under Griddles of Range	Phone
109	"M" Ave. near Bks. 228-D	Smoker's Carelessness	Verbal
110	505 "F" Ave.	Faulty Plug in Connection	Verbal
111	214 "C" Ave.	Flammable liquids	Phone
112	Stevens Drive & Narrow Lane	Faulty Heat Indicator	Box
113	Stevens Drive & Narrow Lane	Faulty Heat Indicator	Box
114	"Q" Ave., Bks. 160	False Alarm	Box
115	2nd and "F"	Unknown	Box
116	Air Raid Tower east of Stevens	Unknown	Phone
117	Bks. 159 on 1st St.	False Alarm	Box
118	1st St. and "Q"	Accidental Alarm	Box
119	326 "C"	Faulty Heater	Box

Investigations & Loss:

9-22-51, Barracks 216-C, bed fire. Personal loss $18.63. On alarm No. 109 there was a personal loss of $5.00. Total personal loss $23.63.

General:

There were 4 safety and security meetings; 12 inside drills and schools; and 23 outside drills. Seventy-four fire alarm boxes were tested.

An area inspection was made by four members of supervision.

The area around the Baptist Church at 8th and "M" Avenue was wet down to minimize the fire hazard.

An evacuation was held for students at the John Ball School.

121727

Lt. Guinn, Lt. Jackson, Capt. Trosper and Lt. Bugg attended school in Dorm. W-10 in Richland.

No. 3 Company provided standby protection for controlled burning at 9th St. and George Washington Way.

Auxiliery boxes in Barracks 158 and 159 were inspected.

NORTH RICHLAND PATROL

Twelve traffic citation tickets were issued by North Richland Patrol for the following: 3 for "No Operator's License", 3 for "Speeding", 1 for "Reckless Driving", 4 for "Illegal Parking" and 1 for "Stop Sign Violation".

Twenty persons were incarcerated in the Richland jail for the following reasons: 11 for "Public Intoxication", 1 for "Vagrancy", 1 for "Drunk and Disorderly Conduct", 5 for "Drunken Driving", 1 for "Drinking in Public", and 1 for "Aiding and Abetting a Drunken Driver".

One hundred twenty-six traffic warning tickets were issued. These tickets were mainly for illegal parking.

Thirty-eight inquiries regarding formerly employed General Electric and Construction personnel were answered. These inquiries came from the U. S. Navy, U. S. Army, Civil Service Commission and E. I. du Pont de Nemours Company.

All fire, traffic and safety hazards observed by the North Richland Patrol were reported to the proper authorities.

Every Thursday an Appearance Officer was assigned to Judge E. W. Brown's court in Richland to appear against persons cited to Court by North Richland Patrol.

All facilities, warehouses, buildings and the John Ball School were checked on No. 1 and 3 shifts daily and on all shifts on Sundays and Labor Day.

Twenty-four weekly hours and eight monthly hours were spent on escort service from Pasco, Washington.

Three firearms belonging to North Richland residents were registered with the Arsenal Officer. Eleven firearms belonging to persons living in barracks at North Richland were registered and checked into the Contraband Room.

Five automobile accidents were investigated in North Richland. There were no serious injuries.

Population Statistics:

Bremerton Houses	678	Barracks (Women's)	82
Trailer Camp	3,836	No. of Trailer Lots Occupied	1,350
Barracks (Men's)	1,499	Total Bremerton Houses Occupied	198
		Total Population	6,095

Complaints:

Grand Larceny - 5; Petit Larceny - 2.

1217828

Unusual Incident Reports:

Public Intoxication	11	Missing Person	1
Drunk and Disorderly Conduct	1	Family Trouble	1
Drinking in Public	1	Disturbance (Involving White and Colored Parties)	1
Drunken Driving	5	Missing Clothing in Barracks Area	1
Aiding & Abetting Drunken Driver	1	Tresspassing and attempting Removal of Property	1
Vagrancy	1	Failure to Yield Right of Way	1
Negligent Driving	5	Auto Accident (1 Private Car)	1
Reckless Driving	1	Auto Accident (2 Private Cars)	2
Unlawful Entry	1	Auto Accident (4 Private Cars)	1
Juvenile in Posseesion of Beer and stolen Articles	1	Investigation of Missing Purse	1
Unattended Death	1		

Special Services Performed:

Emergency Messages Delivered	69	Billfolds Returned to Owners	2
Emergency Long Distance Phone Calls	108	Disturbances Investigated	2
Western Union Telegrams	2	Suspicious Persons Investigated	2
Pacific Telegraph Telegrams	4	Personnel Locked out of Rooms	9
Fires (Sign. 12)	7	Cats Impounded	1
Conditions Reported to Maintenance	6	J. P. Warrants Served by North Richland Patrol	2
Escorts to First Aid	4	Pick-up on Felony Warrant for Benton County	1
Children Lost	1	Stolen Car	2
Children Found	1	Recovered Car	2
Child Bitten by Dog	1	Cars Impounded	6
Dogs Impounded	9	Escort for Public Health Nurse	1
Complaints on Dogs in Trailer Camp	3	Soldiers Turned over to M.P's.	5
Billfolds Turned in to Patrol	4		

ORGANIZATION AND PERSONNEL

No. of Employees on Roll:	Beginning of Month			End of Month		
	Exempt	Non-Exempt	Total	Exempt	Non-Exempt	Total
North Richland Patrol	5	15	20	5	17	22
North Richland Fire	32	--	32	32	--	32
Maintenance & Steam Operation	8	53	61	8	51	59
TOTAL	45	68	113	45	68	113

Personnel Changes During Month:

	Non-Exempt Employees
North Richland Patrol	
New Hire	1
Re-activated Employee	1
Maintenance & Steam Operation	
Transfer to Plant Engineering Unit	1
Termination	1

One open requisition for Plumber-Steamfitter Journeyman.

NORTH RICHLAND PATROL
COURT CASES

SEPTEMBER, 1951

VIOLATION	NO.OF CASES	NO.OF. CONV.	NO.OF FORF.	CASES DISM.	CASES CONT'D.	WARR. ISS.	SENT. SUSP.	LIC. REVKD.	TOTAL FINES	TOTAL SUSP.	TOTAL BAIL FORF.
Public Intoxication	11	7	3				1		$ 50.00	$ 12.50	$ 37.50
Drunk & Disorderly	1		1								17.50
Drinking in Public	1		1								12.50
Drunken Driving	5	3			CV*			2	155.00		
Negligent Driving	9	2	2	1	4				25.00		35.00
Speeding	3		2		1						27.50
No Oper. Lic.	4	4					4		3.50	22.50	
Illegal Parking	3	1				2			3.50		
Reckless Driving	2	2						1	90.00		
Illegal Lic. & Defective Lights	1			1							
Failure to Yield Right of Way	1	1					1			17.50	
Vagrancy	1		1								17.50
Disorderly & Vagrancy	1	1							100.00	50.00	
TOTAL	43	21	10	2	5	2	6	3	$427.00	$102.50	$147.50

CV* - Change of Venue to C. T. Morbeck's Court.

343

12 17 30

PROJECT & RELATED PERSONNEL

	8-31-51		9-28-51	
GOVERNMENT EMPLOYEES				
Civilian Personnel-Atomic Energy Comm.	335		330	
Civilian Personnel G. A. O.	7		7	
Total		342		337
RICHLAND VILLAGE PERSONNEL				
Comm. Facilities (Inc. No. Richland)	1286		1282	
Govn. Agency, Churches, Clubs, etc.	104		107	
Schools	103		433	
Organizations	10		10	
Total		1503		1832
CONSTRUCTION SUB CONTRACTORS				
Atkinson & Jones	5018		5756	
Newberry Neon	378		406	
Urban Smyth Warren Co.	668		802	
Hanley & Co.	16		1	
Vitro Corp of Am.(Formerly Kellex)	250		230	
No. Elect. Mfg. Co.	1		1	
J. Gordon Turnbull	4		4	
Erwin Const. Co.	14		12	
J. P. Head	16		4	
Royal Co. Inc.	1		3	
Fred J Early Jr.	62		87	
V. S. Jenkins	22		23	
Empire Electric Co.	2		1	
Associated Engrs. Inc.	13		7	
Johnson Service	3		1	
Thorgaard Plumbing & Heating Co.	1		2	
L. E. Baldwin & Frank Dunham Co.	19		18	
X-Ray Products	8		3	
Judd Co. Inc.	1		0	
Marlarkey & Moore	10		7	
Dix Steel Bldg. Co.	13		0	
Montgomery Electric Co.	0		4	
Sound Const. & Engr. Co.	22		22	
J. C. Shotwell	9		9	
J. C Whitacre Dec. Co	10		6	
West Coast Heating & Plumbing Co.	15		15	
Electric Smith Inc.	10		10	
L. H Hoffman	71		63	
Stier, Shelton & Schick	2		1	
Charles T. Main	200		205	
Mpls.Honeywell Regulator Co.	1		0	
The Bay Co.	28		23	
J. A Brunzell	13		0	
Acme Elect. Co. Inc.	2		2	
Day Brothers	8		5	
Cyclone Fence	20		0	
Peter Kiewett Sons Co.	0		0	
Puget Sound Sheetmetal Works	16		0	
Valley Roofing	0		5	
Cement Gun Const. Co.	0		2	
National Blower Sheetmetal Co.	0		3	
Holliday & Edworthy	11		11	

Continued Page # 2 121193

	8-31-51	9-28-51
Industrial Electric Co.	8	8
D. H Paving Co.	52	44
Steel Const. Co. of Oregon	65	22
Paul Berg	3	3
G. W. Paulson Co.	3	2
Puget Sound Naval Shipyard	710	695
Calif. Wire Cloth Corp.	3	0
E. J. Bartell	2	2
A. H. Barbour & Sons	4	4
Noise Control of Seattle	2	2
Charles B. Brower	3	3
Anderson Decorating Co.	2	3
Soule Steel Co.	5	3
Northwest Bridge & Tank Co.	6	3
A. C Grant	5	0
Leland S. Rosener	2	2
R. M. Robson	0	6
Allied Painters & Decorators	0	3
Total	7833	8556
General Electric Total	8909	8896
GRAND TOTAL	18,587	19,621

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