HW-10714-DEL

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~~HW-10714~~ HAN-17825

727833

REPOSITORY PNL
COLLECTION Atmospheric Releases
BOX No. N/A
FOLDER N/A

#1 - H. A. Winne, Schenectady
#2 - Zay Jeffries, Pittsfield
#3 - C. G. Suits, Schenectady
#4 - R. C. Muir
#5 - J. R. Rue
#6 - C. N. Gross
#7 - A. B. Greninger
#8 - F. R. Creedon
#9 - Office of Hanford Directed Operations
Attention: C. Shugg, Manager
#10 - Office of Hanford Directed Operations
Attention: C. Shugg, Manager
#11 - Office of Hanford Directed Operations
Attention: C. Shugg, Manager
#12 - Office of Hanford Directed Operations
Attention: C. Shugg, Manager
#13 - Office of Hanford Directed Operations
Attention: C. Shugg, Manager
#14 - 700 File
#15 - 700 File
#16 - 700 File

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August 20, 1948

HANFORD WORKS

MONTHLY REPORT

JULY 1948

~~CLASSIFICATION REVIEW FOR DECLASSIFICATION BUT LEFT UNCHANGED~~
~~...ING DIVISION~~
~~By [signature]~~
~~Date 5-17-73~~
~~U. S. AEC Division of Classification~~

Classification Cancelled (Change to Declassified with Deletions
By Authority of RLO-CG-4
WA Snyder 1/6/92
By DJ Kruger 1/31/92
PM Eick 1-31-92

[redacted]

This Document Consists of
256 Pages. N[redacted]
[redacted]ies. [redacted]

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TABLE OF CONTENTS

GENERAL SUMMARY

JULY 1948

In accordance with scheduled arrangements the 100-B Pile was started on July 1. Power level was increased steadily until the 275 MW level was reached on July 16. No unusual incidents marked either the start-up or the operation of this unit during the month.

During the month evaluation studies indicated the desirability of using sand-bed filters as a means of correcting the 200 Area stack gas contamination problem. Therefore, design, procurement, and construction efforts were concentrated on this possible solution. Efficiencies of 99.9 + % with essentially no maintenance or operating time requirements have been reasonably demonstrated by test size sand-bed filters.

Irregularity in electric power service continued. On July 19 a severe surge originating in the Bonneville Power Administration system scrammed all three piles and caused outages totaling approximately 25% of all outage time (including scheduled outage) for the month.

Segmented discharge of pile tubes as now conceived involves periodic discharge of 75% of the tube, leaving the remaining 25% as a "heel" for reirradiation. This procedure has all the advantages obtained by two-step irradiation of all slugs, decreased the frequency with which the tubes must be discharged, and simplifies the inauguration of segmented discharge. In preparation for segmented discharge the upstream dummy slugs are currently being omitted from tubes as they are re-loaded.

Evidence accumulates that corrosion of Van Stone flanges is relatively independent of the galvanic action between aluminum and stainless steel. Aluminum inserts between the flange and the nozzle did not inhibit pitting of the flange and were themselves pitted on the side adjacent to the aluminum flange rather than on the side adjacent to the stainless steel nozzle.

The behavior of alpha-extruded, lead-dipped slugs in the piles is similar to that of alpha-rolled, lead-dipped slugs, with indications that an even higher degree of preferred crystal orientation is present in the extruded metal.

300 Area Plant Assistance personnel continued to supervise the production rolling of uranium rods for Hanford at Ft. Wayne, Indiana, and Lockport, New York. They also observed a successful trial rolling at Vulcan Crucible Steel, Aliquippa, Pennsylvania, on July 23. Bronze dip conditions to assure complete structural transformation of this metal were established for the triple-dip slug canning process. Indications are that the cycle time extension found essential can be relieved when means for more effective slug agitation in the bronze bath are devised. It was found that a simple slug fracture test shows the degree of structural transformation as well as does the more laborious laboratory examination, and equipment to place this fracture test in routine plant use is being assembled.

Examination of the 4" lead-dipped, alpha-rolled uranium slug which ruptured in 100-F pile on May 30 was concluded. A pinhole was found in the weld of the end-cap which had separated from this slug, and this hole communicated with voids in the braze-line between the cap and the can wall. Poor wetting also was visible between the cap and the slug. Process water penetration into direct contact with the uranium evidently had occurred.

General Summary

Analytical consultation was begun with Prof. H. H. Willard (University of Michigan) on Redox problems, and with Dr. N. H. Nachtrieb (Institute for the Study of Metals, Chicago) on 234-5 Project analyses.

During the month the "Proposed Cost Control System" for Hanford Works Manufacturing and contributing Services Divisions was completed by T. R. Evans, and was presented to the divisions affected and to the Atomic Energy Commission. It is expected that the system will be made effective on September 1, 1948.

During the latter part of July, representatives of the auditing firm of Touche, Niven, Bailey and Smart completed a "Proposed Accounting System for Richland Village and Kadlec Hospital Activities" and issued a report dated August 2, 1948.

Three lost-time injuries occurred during the period July 1 through July 20. This increased the total number of lost-time injuries for the year to eight. Minor Injury Frequency Rate remained the same as the previous month.

Sickness absenteeism reached a new low at .90%.

During the month ground was broken for construction of a new swimming pool near Swift Street and Long Avenue. The existing swimming pool was opened to the public after being closed during the flood emergency.

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STAFF

General Manager	R. C. Muir
Assistant General Manager	R. S. Neblett
Assistant to the General Manager (Technical and Educational Matters)	W. I. Patnode
Assistant to the General Manager (Budgets and Expense Control)	J. R. Rue
Assistant to the General Manager and Manager of Service Divisions	G. G. Lail
Department Comptroller	F. E. Baker
Counsel	L. F. Huck
Community Manager	E. L. Richmond
Manager, Design and Construction Divisions	F. R. Creedon
Manager, Manufacturing Divisions	C. N. Gross
Manager, Technical Division	A. B. Groninger
Manager, Health Instrument Division	H. M. Parker
Manager, Medical Division	W. D. Norwood, M.D.

[redacted]

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FORCE REPORT
JULY 1948

	Non-Exempt		Exempt		Total	
	6-30-48	7-30-48	6-30-48	7-30-48	6-30-48	7-30-48
GENERAL	14	14	5	7	19	21
LAW	2	2	2	4	4	6
DESIGN & CONST. DIVISIONS						
Administrative	37	38	6	6	43	44
Construction	435	351	276	275	711	626
Construction Accounting	-	14	-	-	-	14
Design	245	225	145	145	390	370
Procurement	46	42	63	63	109	105
North Richland Realty	303	302	23	22	326	324
						1483
MANUFACTURING DIVISIONS						
Administrative	-	-	3	3	3	3
"P" Division	276	291	57	60	333	351
"S" Division	225	227	59	56	284	283
Power	400	396	85	85	485	481
Maintenance	625	629	78	80	703	709
Project Engineering	75	75	51	51	126	126
Electrical	235	236	41	42	276	278
Instrument	152	153	44	44	196	197
Transportation	683	674	63	64	746	738
Accounting	-	-	1	1	1	1
						310
TECHNICAL DIVISION	412	471	208	222	620	693
MEDICAL DIVISION	427	436	92	97	519	533
H. I. DIVISION	180	191	84	87	264	278
ACCOUNTING DIVISION	243	238	35	36	278	274
SERVICE DIVISIONS						
Employee & Comm. Relations	80	78	19	18	99	96
Plant Security & Service	1001	1005	114	118	1115	1123
Labor Relations & Wage Rates	5	5	5	5	10	10
Purchasing & Stores	166	166	21	21	187	187
COMMUNITY DIVISIONS	640	650	130	132	770	782
GRAND TOTAL	6907	6909	1710	1744	8617	8653

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PERSONNEL DISTRIBUTION - JULY 1948

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	14	14
Total	-	-	-	-	-	-	-	-	21	21
LAW DIVIISION	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	6	6
DESIGN & CONSTRUCTION DIVISIONS										
Adminstrative										
Supervisors	-	-	-	-	-	-	-	-	6	6
Engineers	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	28	28
Others	-	-	-	-	-	-	-	-	9	9
Total	-	-	-	-	-	-	-	-	44	44
Construction										
Supervisors	-	-	-	-	-	-	-	25	39	64
Engineers	50	-	-	22	-	5	24	49	-	150
Clerical	22	-	-	5	-	1	50	117	6	201
Others	13	-	-	-	-	-	94	104	-	211
Total	85	-	-	27	-	6	168	295	45	626
Construction Accounting										
Clerical	-	-	-	-	-	-	-	-	14	14
Total	-	-	-	-	-	-	-	-	14	14

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	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Design										
Supervisors	-	-	-	-	-	-	-	-	14	14
Engineers	-	-	-	-	-	-	-	-	35	35
Clerical	-	-	-	-	-	-	-	-	118	118
Others	-	-	-	-	-	-	-	-	203	203
Total	-	-	-	-	-	-	-	-	370	370
Procurement										
Supervisors	-	-	-	-	-	-	3	-	12	15
Engineers	-	-	-	-	-	-	-	-	-	-
Clerical	-	-	-	-	-	-	-	-	42	42
Others	-	-	-	-	-	-	28	-	20	48
Total	-	-	-	-	-	-	31	-	74	105
North Richland Realty										
Supervisors	-	-	-	-	-	-	-	24	-	24
Clerical	-	-	-	-	-	-	-	34	-	34
Others	-	-	-	-	-	-	-	266	-	266
Total	-	-	-	-	-	-	-	324	-	324
MANUFACTURING DIVISIONS										
General	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	3	3
"P" Division										
Supervisors	9	11	13	-	-	18	-	-	9	60
Operators	26	34	35	-	-	182	-	-	-	277
Clerical	1	2	2	-	-	5	-	-	4	14
Total	36	47	50	-	-	205	-	-	13	361

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
"S" Division										
Supervisors	-	-	-	21	26	-	-	-	9	56
Operators	-	-	-	105	103	-	-	-	-	208
Clerical	-	-	-	4	10	-	-	-	5	19
Total	-	-	-	130	139	-	-	-	14	283
Power										
Supervisors	18	20	18	5	10	1	4	-	9	86
Operators	87	78	75	23	31	8	-	12	45	359
Clerical	2	2	2	-	1	-	2	-	1	10
Others	5	5	5	3	3	4	-	-	2	27
Total	112	105	100	31	45	13	6	12	57	481
Maintenance										
Supervisors	2	7	8	6	16	6	12	-	17	74
Engineers	-	-	1	2	1	2	-	-	6	12
Mechanics	34	23	63	44	93	57	86	-	108	508
Clerical	1	1	2	1	4	1	4	-	10	24
Others	3	1	9	6	19	11	28	-	14	91
Total	40	32	83	59	133	77	130	-	155	709
Project Engineering										
Supervisors	-	-	-	-	1	-	-	-	12	13
Engineers	-	-	-	-	5	1	-	-	30	36
Drafting Personnel	-	-	1	-	6	3	-	-	32	42
Clerical	-	-	1	-	1	-	-	-	14	16
Others	-	-	1	-	2	-	-	-	16	19
Total	-	-	3	-	15	4	-	-	104	126

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Electrical										
Supervisors	2	2	3	2	3	2	2	-	22	38
Electricians	9	10	15	11	11	11	-	-	110	177
Clerical	1	-	1	1	1	1	2	-	4	11
Others	1	2	1	2	2	5	3	-	36	52
Total	13	14	20	16	17	19	7	-	172	278
Instrument										
Supervisors	1	3	5	2	4	6	-	-	7	28
Engineers	-	-	-	1	-	10	-	-	8	19
Mechanics	6	14	14	12	16	33	-	-	5	99
Clerical	-	1	2	1	2	3	-	-	5	14
Others	1	2	3	2	4	15	-	-	10	37
Total	8	20	24	18	25	67	-	-	35	197
Transportation										
Supervisors	8	2	2	2	3	1	6	-	40	64
Drivers (Based on Areas Served)	14	19	22	32	40	21	39	-	71	258
Mechanics	12	2	1	1	4	-	3	-	75	98
Trainmen	6	4	4	4	4	2	3	-	3	30
Laborers	6	15	9	6	21	10	2	-	48	116
Clerical	-	1	1	1	1	1	-	-	20	25
Others	12	10	10	13	20	4	6	-	72	147
Total	57	53	49	59	93	39	59	-	329	738
Manufacturing Accounting										
Supervisors	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	1	1

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
TECHNICAL DIVISION										
Supervisors	-	6	-	7	11	30	-	-	13	67
Chemists-Engineers-Physicists-Metallurgist & Technical Graduates	2	11	19	13	18	144	-	-	26	233
Laboratory Assistants	9	19	33	34	71	100	-	-	1	267
Clerical	-	2	-	1	2	26	-	-	49	80
Others	-	-	-	-	1	45	-	-	-	46
Total	11	38	52	55	103	345	-	-	89	693
MEDICAL DIVISION										
Physicians	-	-	-	-	-	-	7	13	24	44
Dentists	-	-	-	-	-	-	-	2	11	13
Technicians	1	-	-	1	-	-	-	9	28	39
Clerical	1	-	-	2	-	1	-	38	87	129
Others	9	5	-	4	3	2	16	36	233	308
Total	11	5	-	7	3	3	23	98	383	533
H. I. DIVISION										
Supervisors	1	1	3	4	9	13	-	-	9	40
Engineers	4	4	5	15	9	9	-	-	-	46
Clerical	-	-	1	-	1	2	-	-	4	8
Others	8	12	15	30	49	55	7	-	8	184
Total	13	17	24	49	68	79	7	-	21	278
ACCOUNTING DIVISION										
Supervisors	-	-	-	-	-	-	-	-	36	36
Clerical	-	-	-	-	-	-	-	-	238	238
Total	-	-	-	-	-	-	-	-	274	274

	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
SERVICE DIVISIONS										
Employee & Community Relations										
Supervisors	-	-	-	-	-	-	-	-	18	18
Clerical	-	-	-	-	-	-	-	-	69	69
Others	-	-	-	-	-	-	-	-	9	9
Total	-	-	-	-	-	-	-	-	96	96
Labor Relations & Wage Rates										
Supervisors	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	5	5
Total	-	-	-	-	-	-	-	-	10	10
Plant Security & Service										
Supervisors	15	8	7	10	9	12	23	-	34	118
Office Machine Operators	-	-	-	-	-	-	-	-	51	51
Inspectors	4	3	3	3	3	3	4	-	-	23
Patrolmen	48	113	67	68	107	89	44	-	43	579
Firemen	45	-	-	-	-	11	2	-	21	79
Laundry Operators	-	-	-	-	6	-	-	-	3	9
Clerical	-	-	-	-	-	-	20	-	39	59
Others	3	6	6	9	40	14	3	-	124	205
Total	115	130	83	90	165	129	96	-	315	1123
Purchasing & Stores										
Supervisors	-	-	-	-	-	-	-	-	22	22
Clerical	-	1	-	1	-	-	-	-	163	165
Total	-	1	-	1	-	-	-	-	185	187
COMMUNITY DIVISIONS										
Supervisors	-	-	-	-	-	-	-	-	132	132
Others	-	-	-	-	-	-	-	-	650	650
Total	-	-	-	-	-	-	-	-	782	782
GRAND TOTAL	501	462	488	542	806	986	527	729	3612	8653

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ng experience

[redacted] was started up on July [redacted], 1948, having been in stand-by condition since March 1946. The first [redacted] days of operation were at [redacted] power levels to allow [redacted] calibration and [redacted]

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ported in June, standard operating practice [illegible] retention [illegible]
mass effluent process water [illegible] one-half the basin, the other
being held in reserve [illegible] [illegible] event [illegible]
[illegible] connect[illegible]

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MANUFACTURING DIVISIONS

JULY 1948

SUMMARY

In accordance with scheduled arrangements the 100-B Pile was started on July 1. Power level was increased steadily until the 275 MW level was reached on July 16. No unusual incidents marked either the start up or the operation of this unit during the month.

During the month evaluation studies indicated the desirability of using sand-bed filters as a means of correcting the 200 Area stack gas contamination problem. Therefore, design, procurement, and construction efforts were concentrated on this possible solution. Efficiencies of 99.9 + % with essentially no maintenance or operating time requirements have been reasonably demonstrated by test size sand-bed filters.

Irregularity in electric power service continued. On July 19 a severe surge, originating in the Bonneville Power Administration system, scrammed all three piles and caused outages totaling approximately 25% of all outage time (including scheduled outage) for the month.

Reparations to the extent of over $50,000 are to be paid to the General Electric Company, Richland, as a result of an Interstate Commerce Commission review of freight charges on coal shipments during the period October 1, 1946 to November 20, 1946.

[illegible] are normal.

C. N. Gross

[illegible] was continued by Construction personnel on the [illegible] from [illegible] 105-DR to 115-D. [illegible]

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

P DIVISION

JULY - 1948

I. GENERAL

The D and F Piles operated at 275 M.W. throughout July except for the outages listed under Area Activities in this report. The B pile was reactivated on July 1, 1948, the level being raised from 0 to 275 during the period July 1 to July 16. The 100 Area discharge rate continued at 60 tons per month, there being no scheduled outages for metal discharge at B Pile in July.

The 300 Area canning production amounted to 97 tons of acceptable slugs. This rate is lower than scheduled because of the increase in the canning cycle time made standard on July 9, 1948. The production rate is being increased as rapidly as personnel can be employed and trained. The canning operation was placed on a 2-shift-a-day basis on July 26 to permit a production rate of 130 tons per month.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll -	July
Beginning of Month:	332
End of Month:	350
Net Increase	
Net Increase:	18

Four operators were transferred from the Power Division and 14 were hired, all being assigned to the 300 Area. Two operators terminated voluntarily from the 300 Area.

W. K. Wright, E. T. Hubbard, and R. W. Hooper were employed during the month and commenced a period of training preparatory to assuming supervisory duties.

A. A. Janos, Area Supervisor, was removed from the payroll for medical treatment.

Incident to the start up of B Pile and the attendant reorganization of the supervisory staff, the following promotions were made effective July 1:

W. W. Windsheimer, promoted to Chief Supervisor; G. B. Carlton, promoted to Assistant Chief Supervisor, B Area.

J. A. Haaga, promoted to Area Supervisor in charge of B Shift at D Area.

K. T. Perkins, promoted to Area Supervisor in charge of D Shift at F Area.

H. E. Berg, promoted to Senior Supervisor in charge of Canning operation, 300 Area.

H. A. Laybourn was transferred from B to F Area on July 28 as Day Relief Supervisor.

Effective July 19, the jobs filled by weekly salary personnel were reclassified; new rates and isolation pay were set up where applicable.

J. E. Maider visited the Knolls Atomic Power Laboratory and the G. E. Engineering and Consulting Laboratory at Schnecteday, New York, on July 14 to discuss new pile construction.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time operated (%)	93.2	88.4	89.4
Operating Efficiency (%)	91.2	86.7	88.4
*Power Level (M.W.)	275	275	275
*Inlet Water Temperature (°C)	19.7	19.7	19.7
*Outlet Water Temperature (Maximum °C., 10 tubes, .240" Zone)	61.2	65.7	65.9
Number of Scrams	2	1	1
Number of Purges	1	1	-1
Helium Consumption (cu. ft.)	44,099	73,736	53,963
Metal Discharged (tons)	0.3	34.7	29.2
Inhours gained (this month)	20	18	(-) 2
*Inhours Rotisserie	295	397	320
*Inhours in Rods	32	65	70

*Month end figures.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (Hours)
7-1-48	B*			7.8
7-6-48		F		19.9
7-6-48			B	0.2
7-6-48	B*			10.5
7-8-48	D			23.1
7-9-48			D	2.7

P Division

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (Hours)
7-13-48	F			19.8
7-15-48	D			19.1
7-19-48			B	15.6
7-19-48			D	22.5
7-19-48	F		F	17.7
7-27-48	F			21.1
7-30-48	D			19.7

*Poison discharged according to start up schedule.

The unscheduled outages were caused as follows:

B - 7-6-48 Faulty operation of #2 Beckman trip. Cause undetermined.

D - 7-9-48 Necessity for emergency repairs to "D" Riser thermowell.

B, D, F - 7-19-48 A severe power surge originating in the B.P.A. system. A critical "Y" condition was in effect for approximately 35 minutes, thus precluding an immediate start up. Some work scheduled for subsequent shutdowns was done during this period.

Operating Experience

The B Pile was started up on July 1, 1948, having been in stand-by condition since March 1946. The first 3 days of operation were at planned low levels to allow rod calibration and coefficient determination. The level was then raised in steps to 275 M.W., this value being reached on July 16. The start up was accomplished without unusual incident. (For details of the program followed in reactivating B Pile reference should be made to Classified Document No. HW-10232 dated June 18, 1948.)

A number of Special Request samples were processed during July; details of their irradiation may be found in the Technical Section of this report.

Production Tests having operational significance during the month are reported below:

105-81-P (Probe Test of Top Central Tubes)
Monthly tests were carried out with satisfactory results. Tubes No. 4659-D, 4669-D, 4674-D, 4688-D, and 4674-F passed the 1.485 inch probe.

105-123-P (Shielding on Process Tubes)
Ten tubes in the F Pile were charged without regular front dummy charges and shielded only with a cap supported six-inch stainless steel dummy. No excessive radiation has been observed.

105-168-P (Replacement of Pile Helium Atmosphere with Carbon Dioxide)
The percentage of carbon dioxide in the gas circulating system at D Pile was maintained at 25 per cent (nominal) throughout the month. No significant change in operating conditions was observed.

105-191-P (Exposure of Alpha Extruded Slugs)
Tube No. 2272-D was discharged on July 5. Inspection of the slugs indicated that serious warping could be expected from this type of metal when lead dipped. Accordingly, all tubes containing such material were discharged on July 20.

105-208-P (Special Irradiation Request No. 52)
Five tubes were charged at F Pile on July 27 and four tubes were charged at D Pile on July 30 with no operating difficulties. Special handling of this material was effected in accordance with Document No. HW-9797. The loading of this material has resulted in slight gains in pile reactivity.

As reported in June, standard operating practice at all retention basins is to pass effluent process water through one-half the basin, the other half being held in reserve as a diversionary measure in the event of a ruptured slug. In connection with the start-up of the B Pile it was found that the effluent water activity approached the tolerance level requiring that both sections of the B Area retention basin be used in order to maintain the activity within operating limits. Studies are in progress to determine the source and reason for these readings. At the end of the month both sides of the basin were still in use.

Mechanical Experience

All vertical and horizontal rods are in satisfactory operating condition. A program of removing deposits of iron rust from the bottoms of vertical rod thimbles was continued.

The section of the "D" riser thermowell, the failure of which necessitated an unscheduled shutdown of D Pile on July 9, was removed from No. 12½ cross header on July 30. The thermowell was replaced and the flange assembly reinstalled.

Tube No. 2875-F, containing 4" pieces, could not be discharged in the normal manner on July 27. The charge was broken loose by means of a hydraulic jack; discharge of the stringer was then completed without further difficulty by using the pneumatic charger. The tube was filled with solid aluminum dummies and will be borescoped in the near future.

Effective July 27 the use of the standard front dummy pattern was discontinued. Hereafter a single stainless steel dummy supported by the front cap is to be used for the necessary shielding.

Work was continued on the installation of the new effluent water line between the F Pile Building and the Retention Basin. It is now estimated that this work will be completed and the line will be placed in service during September.

Pile Development

As reported above, the front dummy pattern for pile process tubes will consist hereafter of a single stainless steel piece supported by the front cap. This change will allow significant savings in dummy procurement costs. It will also make a program of segmented discharging feasible in the event that partial discharges become standard practice. For the present a stock of 1.44" diameter pieces is being used for this purpose. Experiments are in progress to determine if this diameter is satisfactory for general use.

GAS PROCESSING BUILDING

Operations were normal.

Work was continued by Construction personnel on the gas tunnel from Building 105-DR to 115-D. On the outages of July 9, 15, 20, and 30, Maintenance personnel worked on the necessary tie-in lines.

SPECIAL HAZARDS

The sample casing of Cask No. 94 was removed satisfactorily.

A scatter plate of two-inch steel was positioned on July 8 in the radiation beam at the top far side of D Pile. A study of scattering and reflection is being made to allow evaluation of a proposed supplementary shield. No conclusive results had been obtained by the end of the month.

P Division

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of July was as follows:

Billets Produced	80 Tons
Rods Machined	198 Tons
Acceptable Pieces Canned	97 Tons

Melt Plant

The casting yields were as follows:

	% Yield		
	June	July	To Date 1948
Billet	73.5	67.7	71.6
Solid Metal	88.8	84.6	87.3

Operation was continued on a three-shift, seven-day week schedule in July, with mixed charges of TXH and solid scrap being melted.

On July 1, the Stokes finishing pump failed when a valve plate broke. The failure of this pump allowed some of the oil from the KB-300 pumps to be drawn up into the H-16 pumps even though the diffusion pumps were isolated and the heat was turned off immediately. This necessitated changing the oil in all four diffusion pumps in addition to replacing the valve plate and resulted in approximately eight hours' down time. On July 10, a valve plate broke in the north Stokes roughing pump but no appreciable loss of time resulted except for switching pumps.

Electric drives for the turntables on both furnaces were installed on July 3. This change offers an improved control of turntable movement when positioning molds for pouring. The air motors used previously were connected to the electric drives through a clutch assembly for emergency usage.

During July five crucibles cracked while heating in the furnaces, allowing molten metal to flow down onto the brickwork beneath the coils. In each case it was necessary to replace the brickwork.

On July 28 when preparations were being made to pour No. 2 crucible in "A" furnace, a large leak developed around the stopper rod in No. 4 crucible in which the charge had begun to melt. An immediate attempt was made to position molds for pouring No. 4 crucible. However, the metal flowing from the crucible was at a low temperature and build up on top of a mold in No. 1 position interfering with the movement of

the turntable. By the time the turntable was freed most of the charge had dropped onto the turntable. A small hole was cut through the turntable, allowing metal to freeze on the supporting ring on the bottom of the turntable. When the turntable was moved to pour No. 2 crucible, seven of the roller supports were bent. After the furnace was opened it was necessary to cut frozen metal from the turntable, patch the hole, and remove and straighten the rollers before continuing the operation of the furnace.

The overall consumption of graphite remains high when using mixed charges (40% TXB - 60% UM). The average number of runs in July was approximately three for both crucibles and molds. National Carbon Company representatives have suggested that placing a cylindrical metal cover over crucibles during burnout might prevent cracking and surface oxidation of graphite. A cover will be tried as soon as fabrication is completed. In addition, they have suggested the use of a more dense graphite (CS-312) which might increase crucible life. One hundred crucibles of this type have been ordered for trial.

Crucible breakage and surface oxidation in the burnout operation increased considerably when melting mixed charges because of the large oxide heel remaining in the crucible after pouring. This prolongs the burnout time to four hours or more as compared with about two hours for solid charges. An investigation is currently being made to determine if TX can be cleaned free of oxide prior to briquetting thereby increasing casting yields.

Additional backfires have occurred in the Stokes vacuum pump exhaust line during the month. Corrective measures are under study.

Machining

Machining yields were as follows:

% Yield (4" A's)		
June	July	To Date 1948
69.1	68.1	67.6

Alpha rolled rods remain of low quality because of irregular surface, cracks, folds, and porosity. This has effected both yields and machine tool mortality.

The machining of 1524 four-inch "A" slugs from duplexed rods under Production Test No. 314-55-M, "Uranium Rod Fabrication by Duplexing", was completed on July 1.

Chip Recovery and Oxide Burning

The Chip Recovery yield was as follows:

% Yield		
June	July	To Date 1948
88.9	89.0	89.4

Chip Recovery operated 17 eight-hour shifts and processed 71,430 pounds of TX briquettes in July.

The press was shut down on July 9 when the die table shaft bent, causing misalignment of the dies. The necessary repairs were made and the press was returned to operation on July 13.

The material burned in the oxide burner was as follows:

Weight Out - Lbs.		
June	July	To Date 1948
3069	9998	51124

The repair work on the oxide burner was initially completed on July 8. This consisted of renewing all exhaust ducts, a major overhaul of the burner, replacement of the cyclone separator, and the relocation of the separator from the suction to the exhaust side of the exhaust fan. After placing the burner in operation the rotor in the exhaust fan became overheated, requiring shutdown for further repairs. The rotor was replaced with one made of stainless steel. A baffle box with water cooling facilities was installed ahead of the exhaust fan to shield it from excessive heat. The burner was again placed in operation on July 15 and has performed satisfactorily.

Canning Operation

The canning yield was as follows:

% Yield (4")		
June	July	To Date 1948
91.3	86.5	88.2

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P Division

Canning rejects, by cause, were:

	% Total Canned (4")		
	June	July	To Date 1948
Non-Seating	2.7	5.5	4.6
Marred Surface	1.4	1.8	1.4
AlSi on Outside of Can	.5	.7	1.2
Frost Test	1.0	1.1	1.4
Bad Welds	1.6	2.0	1.5
Miscellaneous	1.5	2.4	1.7
	8.7	13.5	11.8

The canning yield was appreciably lower this month as a result of increased difficulty with non-seating. In addition, the training and familiarizing of new operators with canning techniques accounted for a large number of rejects. Controls have been established on the location of the thermocouples in the AlSi canning baths with respect to variations in bath level. This should reduce nonseating resulting from slight variations in canning bath temperatures. A study has been completed and recommendations made for improving present procedures for preparing caps and cans. This should improve the wetting characteristics of these components.

Early in July it was found that the standard bronze bath temperature range of , was insufficient to insure complete transformation of all slugs from the alpha to the beta phase. In addition, it was found that the amount of agitation in the bath affected the rate of slug heating. Beginning July 9, bronze bath temperatures were controlled at time and This improved but did not give complete transformation of all slugs. On July 21 the bronze dip time All samples examined to date since this cycle change have been completely transformed.

The replacement of the thermocouple lead wires with chromel-alumel wire was completed for all canning furnaces on July 14.

Eight hundred and fourteen 4" A slugs, machined from duplexed uranium rods, were canned using the triple dip process on July 15 in conformance with Production Test No. 314-55-M, "Uranium Rod Fabrication by Duplexing". Four hundred twenty-seven additional slugs covered by this test were canned by the lead process on July 23.

Samples of colored aluminum cans were received from the Aluminum Company for evaluation in the canning of Special Request pieces. An attempt was made to process these cans by standard methods and it was found that the dye interfered with welding and bonding. With some difficulty it was

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possible to weld caps on these cans after the dye had been completely removed from can mouths with a 20% caustic etch. Four lead slugs were canned in each of the three colors of cans received (red, brown, and green) for pile and flow lab tests to determine the durability of the color.

Two hundred and twenty-nine pieces of Special Request No. 52 (Al-U 235 Alloy) were received and canned in conformance with Document HW-9797, "Safety and Security Measures With Regard to S.R. 52". There were a total of ten rejects, six non-seats, three bad welds, and one marred surface. Fifty pieces of Special Request No. 13-5 (Beryllium Nitride) and 578 pieces of Special Request No. 13-6 were canned. Six pieces of Special Request No. 13-6 failed to pass the bubble test prior to canning and were rejected. In addition, three pieces of Special Request No. 62 containing uranium strips were canned. One piece of this request, marked U-3, will be returned to the vendor to check the effects of welding temperatures on the uranium strips.

A total of 5041 lead slugs, 1356 poison slugs, and 84 papoose slugs was canned in July.

Recovery Operation

	% Recovered		Average Wt. - Lbs.	
	July	To Date 1948	July	To Date 1948
Z Slugs	56.5	68.3	3.901	3.906
X Slugs	35.8	23.7	3.854	3.854
Rejects	7.7	8.0	—	—
	100.0	100.0		

The recovery operation was shut down on July 19 when a leak developed in the hydrofluoric acid tank. The tank was replaced on July 26. Approximately four tons of gamma extruded lead dip pieces remain to be recovered.

Inspection and Testing

Autoclave rejects were as follows:

June	July	To Date 1948
0.13/M	.13/M	.34/M

There were six autoclave failures in July. All of these failures resulted from incomplete bonding of the cap.

The "As Received " quality of cans, caps, and sleeves inspected was as follows:

	% Useable (4")		
	June	July	To Date 1948
Aluminum Cans	93.9	94.2	90.6
Aluminum Caps	99.0	99.0	98.4
Steel Sleeves	92.1	95.7	82.6

Two boxes of standard size aluminum cans were received from the Aluminum Company, one box (388 cans) they had rejected for stains, and the second box (405 cans) had been rejected for stains and cleaned. The cans were inspected and rejects were as follows:

	Stained	Stained & Charred
Marred Outer Surface	42	43
Mandril	3	9
Dents	7	6
Stains	0	0
	52	58

Since no stains were found on the cans, they were processed through canning. Frost testing confirmed that the cans would bond satisfactorily, with only two rejects being found.

305 Area Test Pile

The test pile was operated on a one-shift six-day week schedule in July. A total of 154 tests was run on canned slugs, 75 on billet eggs, 589 on graphite bars, and the following on special work requests:

Request Number		Number of Tests
26	To calibrate graphite testing for density variations.	6
27	To test the reactivity of the end of graphite bars against the middle sections.	3

In addition six tests were run on colored (green and brown) 4" aluminum cans to determine effects of dye on reactivity. Standard 4"

cans were used as standards and results indicated the dye had no apparent effect on reactivity. This confirmed the results on colored plates tested last month.

Development Work

Since it appears to be possible to completely transform slugs in the bronze bath with a minimum dip time of forty-seconds if three times normal manual agitation is assured, a mechanical agitation device has been designed and is currently being evaluated. The agitator is designed to move the slugs horizontally in the bath for a distance of eight inches and back in one second. If it proves satisfactory it may be possible to reduce the canning cyle from 52 seconds to the original 47 seconds.

S DIVISION

JULY 1948

OPERATING SECTION

I. GENERAL

Fifty-three batches were started in the Canyon Buildings during July and fifty-three batches were processed through the Concentration Buildings and Isolation Building. The average purity for the completed batches was 98.8 percent.

The material balances for T and B Plants averaged 96.7 percent and 101.6 percent, respectively, for a combined average of 99.3 percent. Waste losses for the two plants averaged 2.5 percent.

Canyon and Concentration Building Production Performance Data - (7-1-48 - 7-31-48, inclusive)

	B Plant	T Plant	Combined
Number of charges started	30	23	53
Number of charges completed	28	25	53
For completed charges:			
Percentage of starting product in waste			
This month	2.5(a)	2.6(a)	2.5
Last month	3.0(b)	2.6(b)	2.7
Cumulative to date	5.1(c)	4.93(c)	5.0
Percentage of starting product recovered			
This month	99.1	94.1	96.8
Last month	102.7	95.9	98.7
Cumulative to date	97.1	95.6	96.5
Percentage of starting product accounted for:			
This month	101.6	96.7	99.3
Last month	105.7	98.4	101.4
Cumulative to date	102.2	100.5	101.5
Gamma decontamination factor (log.)			
This month	7.72	7.83	7.77
Last month	7.50	7.75	7.64
Cumulative to date	7.32	7.28	7.30

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.17%-T Plant; 0.21%-B Plant. (b) 0.027%-T Plant; 0.026%-B Plant. (c) 0.11%-T Plant; 0.006%-B Plant.

Isolation Building Performance Data (7-1-48 - 7-31-48, inclusive)

	% of Incoming Product			
	Prepared for Shipment	Recycle	Losses	Material Balance
Average for this month	96.0	5.69	0.04	101.7
Average for last month	94.9	6.08	0.06	101.0
Average to date	96.3	4.20	0.10	100.6

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	281
End of month	284
Net increase	3

Remarks: The changes which occurred in the S Division during the month are listed below:

5 transfers from other divisions (1 Monthly Roll, 4 Weekly Roll)
4 transfers to other divisions (1 Monthly Roll, 3 Weekly Roll)
1 termination (Weekly Roll)
2 new hires (1 Monthly Roll, 1 Weekly Roll)
1 employee returned to payroll from leave of absence (Weekly Roll)

Changes in supervisory organization:

R. S. Bedds assumed the duties of Superintendent of the S Division effective July 15, 1948 vice W. K. MacCready, who became Assistant Manager of the Manufacturing Divisions as of that date.

R. B. Bixler, formerly Area Supervisor, Health Instrument Division, was transferred to the S Division as Supervisor-in-Training, effective July 19, 1948.

W. B. Simeral, a new hire, joined the organization as Supervisor-in-Training, effective July 9, 1948.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants

Volume Reduction 221-T-13

Evaluation of Production Test 221-T-13, involving the reduction of process volume at the end of the extraction step, was continued. Current run

at T and B Plants are now being processed at 30 percent and 20 percent reduction in volume, respectively. There has been no significant increase in waste losses; decontamination has been normal and no operating difficulties have been encountered.

At 30 percent volume reduction, the consumption of all essential materials in the decontamination and cross-over steps is reduced approximately 30 percent with the exception of sodium bismuthate and lanthanum. First and second cycle waste volumes at 30 percent volume reduction are reduced by 23 percent and 26 percent, respectively.

One run at T Plant has been processed at 40 percent volume reduction but the 13-4BP waste loss was increased by approximately 0.6 percent. A second 40 percent volume run is planned at T Plant early in August.

Acid Flush - B and T Plants

Acid flushes were processed through the B and T Plant Canyons and Concentration Buildings. No abnormal hold-up of product in the systems was indicated at either plant.

F Cell Waste Loss Study - T and B Plants

As reported last month, preliminary attempts to improve the efficiency of the rework of metathesis wastes by flushing the precipitator following the metathesis centrifugation indicated a possible product savings of 0.10 percent. Efforts during the month were directed toward the development of the proper flushing technique. This work will be continued in August.

F Cell Time Cycle - B and T Plants

During the month, the F Cell time cycle was reduced from 22 to 20 1/2 hours. This was accomplished by bringing runs into F Cell before the waste analysis of the final waste of the previous run is known. This change is made possible by the fact that a high waste can be successfully reworked prior to the first cake removal of the succeeding run.

WASTE DISPOSAL

T and B Plants

241-TX Farm - Project C-163

Work in the sub-contractor's phase continued at a satisfactory rate. All work on two tanks is virtually complete with eight other tanks approaching completion. The concrete for the domes of thirteen tanks and side walls of fifteen tanks has been poured. All side wall reinforcing, tank liners and gunite work is complete on all (18) tanks. Sand blasting, painting, lead flashing and the installation of tank risers are progressing rapidly and backfilling around the more advanced tanks has been started.

The 302-X catch tank, including the encasement drain line header, has been installed. The work on the crib and tile field, including the encasement from the 153-TX diversion box, is in progress.

In the General Electric phase of the work, the tie lines (3) from the 221-T Building via the 155-TX diversion box to the 241-U Area have been hydrostatically tested.

The second wall pour which includes the inlet and outlet nozzles on the 154-UX diversion box was completed. Fifty-five percent of the concrete encasement has been poured and one third of the piping has been welded in place between the 154-UX and 155-TX diversion boxes.

Work is in progress on the new 291 stack drain line to the 154-TX diversion box and on the three tie lines between the 155-TX diversion box and 241-T Area.

Additional Waste Storage Facilities - B Plant

At present planned production schedules, additional waste storage space will be required for B Plant by September, 1949. A project proposal covering the installation of twelve 758,000 gallon tanks as an extension to the present 241-BX tank farm is being prepared.

Crib and Tile Field - 221-B Cell Drainage Water

Work on Project C-225 which covers the installation of a crib and tile field for the handling of cell drainage water from the 221-B Canyon Building is nearing completion. Seven of the nine test wells have been completed and the drilling of the eighth and ninth wells is progressing. It is expected that the tie-in will be made and the system put into service during the first week of August.

200 Series Tank Alterations - B and T Plants

At present the X-201-B and X-201-T tanks are in service as sludge settling tanks for the 224-B and 224-T wastes which are then disposed of by cribbing. Due to the nearness of the 200 series tanks to the disposal cribs, there is a possibility that contamination may spread from the cribs to the area about the tanks and prevent their utilization for the settling of 224 Building wastes. For this reason the remaining 200 series tanks (202, 203 and 204) in each area are being excavated and piped in series to permit maximum utilization of the available settling capacity when the need arises. This work is complete except for the installation of float gages and backfilling at T Plant while the excavation is in progress at B Plant.

Cribbing of Second Cycle Wastes - B and T Plants

The cribbing of second cycle wastes was resumed at B and T Plants during July. The contents of X-106-T and X-104-B are now being jetted to the cribs provided. It is expected that the cribbing of these tanks will be followed by the cribbing of the X-112-T and the X-105-B tanks. The storage space made available will be utilized for the storage of additional first and second cycle wastes.

Metal Waste Densitometer Readings and Samples

At the request of the Atomic Energy Commission and in cooperation with personnel from K-25, the X-101, 102 and 103-T tanks were sounded using a densitometer designed and fabricated at K-25. Although not conclusive, the data collected indicated a layer of hard sludge of varying depth in the bottom of the tanks. Further readings using a modified densitometer will be taken during the first week of August. A core sample of the sludge in the X-101-T tank will also be taken.

The four bottle samples of sludge taken from the X-101-T tank in June were delivered to K-25.

Waste Status

The status of the Waste Storage Areas as of July 31, 1948, is shown in the following table:

B Plant

Bldg. 241		Percentage Full			Reserve Capacity In Batches to Process			
Tanks	Waste	B	C	BX	B	C	BX	Total
x101,2,3	Metal	100	100	51.3	0	0	131	131
x104,5,6	Metal	-	100	0	-	0	269	269
x201,2,3,4	Metal	0	100	-	-	0	-	-
x107,8,9	1st Cycle	100	92.4	0	0	29	384	413
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	-	-	-	-	-	-	-
x104,5,6	2nd Cycle	81.0	-	-	101	-	-	101
x110,11,12	2nd Cycle	81.2	-	0	100	-	531	631

S Division

T Plant

Bldg. 241 Tanks	Waste	Percentage Full T	U	TX	Reserve Capacity In Batches to Process T	U	TX	Total
x101,2,3	Metal	100	100	-	0	0	-	-
x104,5,6	Metal	-	86.7	-	-	36	-	36
x201,2,3,4	Metal	0	0	-	-	37	-	37
x107,8,9	Metal	-	0	-	-	269	-	269
x107,8,9	1st Cycle	100	-	-	0	-	-	-
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	69.0	-	-	133	-	-	133
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	89.0	-	-	64	-	-	64

Reserve capacity in batches was calculated from July averages. First and second cycle waste volumes are being reduced through Production Test 221-T-13.

B		T	
Metal Waste	5,900 gal./batch	Metal Waste	5,900 gal./batch
1st Cycle	4,138 gal./batch	1st Cycle	3,700 gal./batch
2nd Cycle	2,995 gal./batch	2nd Cycle	2,700 gal./batch

MECHANICAL PERFORMANCE

Bismuth Metal Dissolver - Project C-262

Project C-262, which provides for the installation of permanent facilities for the preparation of bismuth subnitrate from bismuth metal, was approved and the installation of the necessary facilities was started in the 271-B Building. Advantages to be gained from this installation are an estimated savings of approximately $30,000 per year for the two plants and the elimination of procurement difficulties which have been encountered in the past in purchasing the bismuth subnitrate salt.

Brake Screw Shaft Replacement - 75 Ton Cranes

The brake shaft assemblies on the T, U and B 75 ton Whiting Cranes were replaced with larger diameter shaft assemblies in order to afford more protection from possible shearing of the brake shaft as was experienced on the B Area crane some time ago.

Redesigned brake shaft assemblies for the 10 ton and 30 ton cranes are expected to be received during August.

Agitator Replacements - T Plant

The agitators on waste neutralizer tanks 10-1 and 9-1 failed during the month. A replacement was made of the 10-1 agitator without incident

by standard remote control crane methods, using the agitator from the 9-1 tank. Radiation levels have prevented the determination of the exact cause of the failure. This agitator was a part of the original installation.

Caustic Storage Pump Relocation - T Plant

Shifting of the caustic storage pump foundation (211-T Building) caused a fracture in the line from a storage tank. The pump is now being relocated at the opposite end of the tank header. No material was lost as a result of the line fracture.

Connector Replacement - Section 14 - T Plant

Failure of the G-9 gaskets on the transfer line from the precipitator to the centrifuge in cell 14-R resulted in the corrosion of the connector heads necessitating the replacement of the connector assembly. The new assembly was equipped with Teflon gaskets. No significant loss of product was incurred.

Centrifuge Motor Failure - B Plant

The centrifuge motor in the fluoride by-product cell (D Cell) in the 224-B Concentration Building failed as a result of failure of the internal insulation. This motor had been in service since 10-24-46. It was replaced with the original motor which had been repaired and held as a spare.

Sanitary Water Leak - 231-W

Operations at the 231 Building were shut down for fourteen hours on 7-30-48 because the pumphouse of an 8" fire hydrant line on the sanitary water system. The cause could not be determined. Return to operation was permitted by the installation of a sectionalizing valve.

SPECIAL HAZARDS

Stack Gas Contamination

Based on the reasons listed below, it was decided during July to install 110' x 48' sand bed filters in both T and B Plants instead of the 4-unit water scrubbing system proposed earlier.

1. Relatively low particle removal efficiencies obtained with an experimental water scrubber of a design similar to that proposed.

2. Extremely high efficiencies obtained with experimental sand bed filters.

3. The use of sand bed filters involves no problems of water supply or effluent disposal.

4. The operation of sand filters presents no operating or maintenance problems as contrasted to the complexities inherent in the operation of scrubber systems.

The sand filter consists essentially of a two foot layer of 30 mesh sand on layers of increasingly coarser sand and gravel. The process ventilation air will pass through these beds at low velocity; the unit being operated under a slight negative pressure. The mechanics of particle removal are basically those of gravity settling and particle collision. Experimental work with four separate units varying in size from 12" in diameter to 22" and employing sand of varying degrees of size and type has indicated that efficiencies of better than 99 percent can be expected under anticipated plant operating conditions.

The design of this unit was well under way at month-end with excavation and concrete work scheduled during August. Due to the increasing amount of new construction work scheduled for the 200 West Area, the T Plant installation will be scheduled first. A realistic completion date of December 1, 1948 has been forecasted for this unit. The B Plant installation will proceed as rapidly as manpower and materials can be released for this work.

On July 20 and 21, a conference was held at Hanford with Atomic Energy Commission representatives and their gas purification consultants. The history and development of the stack gas problem was reviewed and discussed in detail with emphasis upon future plans and considerations for this and other sites. Certain general recommendations are currently under consideration; subsequent suggestions from the consultants are to be reviewed as they are received from each consultant.

Type 6, C. W. S. filters are still in service on the process cell ventilation outlets of the T Plant Canyon Building. The units at B Plant which were removed in June will be replaced in August with a modified version which employs a coarse, fiberglass filter medium preceding the Type 6 filter paper. The purpose of the "rough" filter is to trap large discrete particles and moisture thus prolonging the life of the Type 6 medium.

Dissolver off-gas scrubbing units operated satisfactorily during the month. Specific measurements have indicated an iodine removal efficiency of more than 99 percent, assuming that all I^{131} present in the processed metal is released at the time of metal dissolution.. Two spare scrubbers have been ordered from an outside vendor. These will be modified on the plant to incorporate certain changes intended to increase their efficiency and reduce the amount of scrubbing water required.

DESIGN AND CONSTRUCTION CONSULTANT'S SECTION

Redox Development

Work was continued during the past month by the Design Division to

formulate a firm design layout for the Redox Test Plant. A comparative cost estimate of a single floor vs. a multi-floor service area for the Test Plant resulted in a decision to take advantage of the saving offered in the single floor building construction.

A proposal for process equipment layout in the cells involving an in-line equipment arrangement, wall to tank jumpers of a relatively small number of simplified standard designs, and equipment supports attached to the cell walls is currently being studied to determine its suitability for a Test Plant installation. An in-line arrangement of this type was considered both in cell and trench construction typical of the present 221 Buildings, and in a continuous cell and trench extending the full length of the building. Economically the former arrangement is the more attractive and this design is being investigated for all cell units of the Test Plant.

Final process flow sheets for the Test Plant are being prepared and will be released shortly for comment and/or approval.

The mechanical development program for the Redox process has been revised to include only those items under development which now show the most promise. The corrosion testing program is being enlarged to permit investigations to be carried out which are directed toward the selection of proper materials for Redox waste storage tank liners.

Comparative cost estimates are being prepared to determine the economic advantages of a canyon building constructed without cell cover blocks over the conventional cover block type of construction employed in the existing separations plants. This investigation is directed primarily toward the design of the Redox main plant.

Main Area Gate and Badge House

The Project Proposal for the Main Area Gate and Badge House at 200 West Area has been completed. Presentation of the proposal to Management for approval is being delayed, however, pending a critical review of the factors which were pertinent in the origination of the proposal several months ago.

Additional Laundry Facilities

At the request of the Budget Committee, the Project Proposal for Additional Laundry Facilities in the West Area has been reviewed with the departments involved to determine where further reductions in the cost of the facility could be made. Based on the results of this review, a revised cost estimate has been prepared and returned to the committee for approval.

POWER DIVISION
JULY 1948

GENERAL

Consolidation of the Richland and North Richland water supply systems have made possible subsequent shift supervisory personnel reductions as the 3000 Area water system supervisory duties were assumed by the 700, 1100 Area shift supervision. As a result, three shift supervisors were made available for assignments in the 100 Areas.

PERSONNEL AND ORGANIZATION

Number of employees on payroll-July	
Beginning of month	485
End of month	484
Net decrease	1

The indicated decrease in number of employees on the Division's payroll is a result of the hiring of six, the termination of two, and the transfer of five to other divisions.

100 AREAS

All power services necessary for supplying steam and process water to operate the "B" Area pile were resumed on July 1 without incident.

The 24-inch rubber expansion joint in the south process water line in the "D" Area demineralizing plant was replaced with a steel spool piece on July 2, as a safety measure.

On July 13, the process water pressure to the "F" Area pile was increased to 370 psi for test purposes, at the request of the "P" Division. The test was still in effect at the month's end.

The process water prrssure in the "D" Area process water pump room dropped approximately 15 psi on July 13, when one of the electric pumps relayed out due to a short circuit in the flow meter wiring. The pressure was immediately restored to normal without loss of production.

A power surge caused by high frequency on the BPA system occurred at 1:50 A. M. on July 18, and a critical "Y" condition was declared from 1:54 P. M. to 3:00 P. M. The surge caused overpressures of from 30 to 50 psi on the process water to piles in all areas.

Power Division

On July 23, the "P" Division released its agreement with the Power Division that refrigeration plant equipment in D and F Areas, now in stand-by condition on thirty day notice for service basis, be held for future use. This equipment is now available for excess.

The three chemical storage silos at the south end of the "D" Area demineralizing plant have been razed to give access to installation of a new 36-inch process water line. This work was completed on July 8.

200 AREAS

Construction of power house extension in the West Area is progressing.

It was necessary to remove the fire and sanitary water supply line to the Isolation Building from service for approximately thirteen and one-half hours on July 30 to repair a bad leak in the line.

Overloading of sanitary sewerage septic tanks was found to be due to excessive automatic flushing on sanitary fixtures and air washer drainage. This condition has been corrected in both the East and West Areas.

300 AREA

Steam service to the area was interrupted for one and one-half hours on July 7, while a leak was being repaired on the main steam header.

On July 13, temporary service water lines were connected to the water supply pumps so water can be furnished during outage of existing lines, for construction changes to water piping system. The No. 2 service water pump was removed from service.

The annual inspection and overhaul of No. 2 boiler was completed during the month.

1100 AREA

A new peak domestic water demand for the Richland-North Richland supply system was established on July 21, when a flow of 12.544 m.g.d. was reached.

Chlorine residual in the Richland domestic water was reduced to a normal 0.2 ppm on July 3, as the hazard from floodwater subsided. A residual of 0.75 ppm, however, is being maintained at North Richland due to shorter retention time in the water.

Power Division

The North water storage reservoir was removed from service July 12 and 13, while temporary repairs were made to roof supports.

Operations of the Village irrigation system were affected on July 1, when the newly constructed flume to No. 1 pumping station washed out near the main irrigation ditch, and again on July 7, when the main ditch washed out between the No. 6 pumping station and Thayer Drive. It was necessary to have the No. 2 pumping station out of service from July 7 until July 21, when repairs to the main ditch were completed.

On July 1, the effluent line was opened from the sewerage disposal plant and normal operations of gravity flow through the plant resumed.

Major breaks in sewer mains were discovered in the vicinity of Symons and McPherson Streets on July 16, and at the new swimming pool near the High School on July 17. It will be necessary to relocate the sewer near the new swimming pool now being constructed.

3000 AREA

It was necessary to remove the "A" well from service July 2 to 22 to remove sand from the well and overhaul the pump. The "B" well was out from July 22 to 28 for de-sanding.

PASCO STORAGE DEPOT

The river pumping station was out of service on July 16 and 17 while 300 feet of bad wooden water main near the station was replaced with steel pipe. Fire protection water was connected from the City of Pasco system during the outage.

As a result of recent Columbia river flood, considerable mud and silt has collected in the pumping station intake channel and suction bay. Steps are being taken for its removal.

WHITE BLUFFS

Operations normal

POWER DIVISION STATISTICS

From July 1, 1948

Thru July 31, 1948

			AREAS		
			100-B	100-D	100-F
RIVER PUMP HOUSE (Building 181)					
River stage	Feet above sea level	(max)	406.7	395.4	382.3
		(min)	395.4	386.0	372.5
		(avg)	399.3	389.3	375.9
River temperature	avg. °F.		62.0	61.9	62.4
Water pumped to Reservoir	gpm avg. rate		40172	40087	38237
Water pumped to Refg. Condensers	gpm avg. rate			0	0
RESERVOIR (Building 182)					
Water pumped to Filter Plant	gpm avg. rate		34265	34486	33826
Water pumped to Condenser System	gpm avg. rate		4006	3824	3581
Water pumped to Export System	gpm avg. rate		1901	1777	830
	gpm normal rate		4508	4508	4508
Chlorine added at #1 inlet	pounds		19848	21770	14000
FILTER PLANT (Building 183)					
Filtered water to Power House	gpm avg. rate		280	291	245
Filtered water to Process	gpm avg. rate		32795	31796	30933
Filtered water to Fire & Sanitary	gpm avg. rate		111	174	155
Chlorine used in Water Treatment	pounds		8025	1930	9000
	ppm avg.		1.95	1.61	1.68
Lime used in Water Treatment	pounds		114335	93640	119000
	ppm avg.		8.9	7.3	9.5
Coagulant used in Water Treatment	pounds		347866	302823	341000
	ppm avg.		27.2	23.6	27.1
Raw Water pH	pH avg.		7.82	7.84	8.0
Finished Water pH	pH avg.		7.41	7.41	7.41
Alkalinity - Raw	ppm avg.		54	57.4	50
Finished	ppm avg.		51	50.1	46
Residual Chlorine - Settled	ppm avg.		.24	.21	.23
Finished	ppm avg.		.05	.06	.11
Iron - Raw	ppm avg.		.34	.28	.27
North Clearwell	ppm avg.		.02	.02	.02
South Clearwell	ppm avg.		.017	.02	.02
Hardness - Finished	ppm avg.		70	72	72
Turbidity - Raw	ppm avg.		13.9	12.1	12.0
Filtered	ppm avg.		0	0	0
REFRIGERATION (Building 189)					
Refrigeration produced	Tons per day			0	0
Temperature, Process Water In	avg. °F.			-	-
Temperature, Process Water Out	avg. °F.			-	-

POWER DIVISION

From July 1, 1948
Thru July 31, 1948

POWER HOUSE (Building 184)

Steam generated - Total	M pounds	95237	102756	92348
Average rate	lbs./hr.	128006	138113	124124
225 psi Steam to plant (est.)	M pounds	83768	90335	81156
15 psi Steam to plant (est.)	M pounds	40	90	110
Coal consumed	Tons	7002	7556	6790
Coal in storage (est.)	Tons	31295	37833	36016

DEAERATOR PLANT (Building 185)

Water flow	gpm avg. rate	32545	31506	30683
Chemicals consumed:				
Dichromate	pounds	24000	21500	24000
Sodium Silicate	pounds	277713	224415	254300
Chemical Analysis:				
pH	pH avg.	7.66	7.65	7.70
Dichromate	ppm avg.	2.0	1.93	2.0
Silica	ppm avg.	6.0	5.8	5.4
Dissolved Iron	ppm avg.	.024	.027	.03
Free Chlorine	ppm avg.	.05	.04	.07

PROCESS PUMP ROOM (Building 190)

Total water pumped	gpm avg. rate	32370	31331	30508
	gpm normal rate	31105	32079	31650
Water temperature	avg. °F	64.9	64.8	64.6

VALVE PIT (Building 105)

Chemicals consumed:					
Solids		pounds	0	2000	1900
Chemical analysis:					
A, B, C, & D Headers					
	Standard limits				
pH	7.5-7.8	pH (max)	7.75	7.70	7.75
		(min)	7.55	7.55	7.60
		(avg)	7.64	7.63	7.68
SiO_2		ppm (max)	7.0	6.5	6.0
		(min)	5.0	5.5	5.0
		(avg)	5.8	5.8	5.3
$Na_2Cr_2O_7$	1.8-2.2	ppm (max)	2.3	2.0	2.1
		(min)	1.4	1.8	1.9
		(avg)	2.0	1.92	2.0
Iron		ppm (max)	.04	.03	.03
		(min)	.005	.01	.01
		(avg)	.02	.021	.02
Chlorides		ppm avg.	1.7	2.1	1.7

POWER DIVISION

From July 1, 1948

Thru July 31, 1948

	Unit	200 AREAS	
		200-E	200-W
RESERVOIR (Building 282)			
Raw Water Pumped	gpm avg. rate	2195	2312
FILTER PLANT (Building 283)			
Filtered Water Pumped	gpm avg. rate	448	479
Chlorine Consumed	lb.	372	345
Alum Consumed	lb.	3430	2996
Chlorine Residual - Sanitary	ppm	.5	.5
POWER HOUSE (Building 284)			
Steam Generated - Total	M lb.	15375	22449
Steam Generated - Ave. Rate	lb./hr.	20665	30173
Coal Consumed (Est.)	tons	1170	1656
Coal in Storage (est.)	tons	8900	10693.5

		300, 700, 1100 AREAS		
POWER HOUSE (Buildings 384 & 784)		300	700	1100
Steam Generated - Total	M lb.	6346	11166	
Steam Generated - Avg. Rate	lb./hr.	8530	15008	
Coal Consumed - Total (Est.)	tons	461.5	850.0	
Coal in Storage (Est.)	tons	1051	5430	
SANITARY AND FIRE SYSTEM (1100) & 3000				
Well Water Pumped - Total	gal.			298,303,000
Well Water Per Day	gal/day			9,623,000
Well Water	gpm avg. rate			6,683
Chlorine Residual	ppm			.5
SEWAGE TREATMENT PLANT (1100 Area)				
Total Sewage Treated	gal.			112,200,000
Sewage Treated Per Day	gal/day			3,619,000
Sewage Flow	gpm avg. rate			2,513

MAINTENANCE DIVISION

July, 1948

GENERAL:

H. H. Miller assumed responsibility of the Maintenance Division as Superintendent succeeding W. W. Pleasants, resigned.

As of July 26, work was started on Construction of stock gas decontamination sand filters in the 200 Areas.

ORGANIZATION AND PERSONNEL:

Employees on roll	July
Beginning of month	696
End of month	698
Net increase	2

WORK ORDER SUMMARY:

Area	Backlog Mandays 8-1-48	Men On Roll	Backlog Days 8-1-48
100	3743	133	28.1
200	4884	157	31.0
300	2027	67	30.2
700	2918	107	27.2
M.C.	8409	130	64.6
TOTAL	21981	594	36.9

The total backlog decreased from 23,854 to 21,981 during the month; the average number of days to complete all work dropped slightly from 41.0 to 36.9 days.

100 AREAS:

A new clothing storage was built for use of the operating personnel of the "P" Division in the 105-B Building valve pit balcony.

Fabrication work on the horizontal shim rods for 105 DR pile in 100-B Area has been started on a two shift basis.

The rust was removed from the bottom of nine vertical safety rod thimbles in the 105-D Building. The rods were then buffed their full length.

Progress was made in the installation of the two 16" gas lines in the 115 tunnel connecting to the new 105 DR pile in the 100-D Area. A section of the 115 Air Conditioning Room was partitioned to permit construction in this Area.

2 - Maintenance Division

Work on the vertical safety rods was continued on all shutdowns in the 105-F Building. Five rod tips and guides were buffed during the month; rust was removed from four thimbles.

The west side of the 107-D Retention Basin was pumped down; the basin cleaned; cracks repaired and restored to service.

A 3" cross connection was installed on the 107-F suction line which permits water from either the east or west section of the Retention Basin to be pumped through the 107 pump house.

New steam traps were installed in the condensate drain lines in the 190-F Building. This installation replaces manually controlled valves that were not entirely satisfactory from the standpoint of operating safety.

200 AREAS:

The dismantling of the high sanitary water storage tower in the 200-East area was completed.

The mechanical brake screw assembly on the 75 ton cranes in the Canyon Buildings have been replaced with an improved assembly. This improved assembly is a heavy design of high strength steel and therefore gives an added safety factor at this point.

It was necessary to replace a trap in the chemical sewer Section 10 of the "T" Canyon. This is the first replacement made in the Knightware sewer tile. Inspection of the failure reveals evidence of porosity in the tile.

Changes have been completed in the piping connecting "B" jet gang valve to the cell connectors in Section 14, 16, 17 in the "B" Canyon. As now arranged, this gang valve will serve connectors 2 and 31 without piping changes.

It was necessary to relocate the "T" Tank Farm caustic transfer pump. Crystalline growth in the bearing soil, from caustic spills has caused the entire footing to rise six inches from the installed elevation. All affected soil is being replaced. The new installation will have ample catch and drainage facilities to prevent a reoccurrance of this objectionable condition.

It was necessary to replace the cover gasket and holding stainless steel cap screws on the E-2 centrifuge in the "B" Concentration Building. The original cap screws failed from corrosion.

To increase the waste sludge storage capacity, piping changes in the "T" Tank Farm have been made to permit use of 201,202,203 and 204 Tanks in series with the disposal crib.

The double thermometer-well in E-1 Tank, "T" Concentration Building, failed in service and was replaced.

The Class "A" inspection of the "B" Canyon Tank Farm and pumps was completed. It was necessary to replace shafts and impellers on all pumps. It will be possible to build up and re-machine these shafts for future replacement.

3 - Maintenance Division

It was necessary to replace the damper section of the Isolation Building exhaust duct. The damper had failed and due to contamination in the duct replacement was not possible. The new installation section of the duct, with damper, has hand holes provided for minor repairs, if needed, in the future.

A general program is under way to remove excess water from the sanitary sewers connecting the administration and power areas to the septic tank. To this end, flush tanks are being removed from urinals, desert cooler waste water has been diverted to french drains, and other excess water is diverted to open ditch drainage.

A new improved design of cask car lock has been installed on cars #12 and #20.

To permit the Electrical Division to work on Centrifuge tachometer generators in the Canyon Cells, a special suspended platform, with shielding, was developed and constructed.

300 AREA:

A monorail and electric hoist was installed in the 305 Building for the handling of lead.

A new lead lined slug recover acid tank was installed in the 313 Building.

An experimental electrically driven agitator for bronze pots was fabricated for use in the canning area.

New thymotrol drives were installed on the melt plant furnaces. This completes work on Project C-142.

The changes to the displacement pots, on the 321 Demonstration Unit were completed. Preliminary work is now being done on the horizontal contactor unit installations in the 321 Building. August 5 is the anticipated delivery date for the first contactor.

700 AREA:

The installation of new gates and repairs to existing fences around the well field on Wellsian Way is complete.

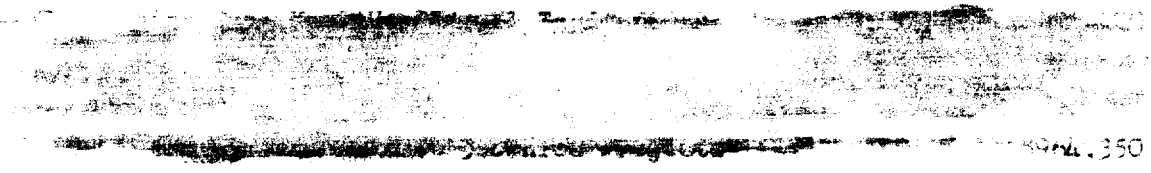
The laying of new asbestos shingles and the installation of sheet metal gutters on the roof of the 703 Building continues. Anticipated completion, August 27.

The Transportation Labor Division office building was moved from the south Labor Yard to the No. 1131 Garage Area and is now being repaired and remodeled. Anticipated completion, August 27.

4 - Maintenance Division

The overhaul of No. 2 boiler in 784 Building, and the summer overhaul and repacking of all main steam line valves was completed.

Various temporary pumps and piping used during the flood period were removed and sewer lines unblocked permitting the Village and 700 Areas to be restored to normal operation.



PROJECT ENGINEERING DIVISION

JULY 1948

GENERAL

The Project Engineering Division has as its responsibility design, studies, project proposals and related engineering duties connected with authorized requests for work emanating from the Hanford Works Plant.

Engineering items of major importance actively progressing in the various areas for the month of July are as follows:

100 AREAS

Project C-172 - Alterations to Buildings 186-D and 185-B, D & F

Inventory of excess equipment was completed last month. Silos at 186-D have been dismantled by Design and Construction.

Project C-238 - Building 105-F - 107-F Effluent Sewer Line

Good progress has been made toward completion of this project. On July 28, 1948 a coordinating meeting was held in the 100-F Area "P" Division Supervisor's office to make long-range plans for actual tie-in of the new line.

E. R. 1044 - Outlet Charging Device

Special effort is now being made to complete design work on a Mark II [illegible] for fabrication [illegible] immediately after completion.

Project C-21[illegible] System Riverland Locomotive [illegible]

Approximately half of this project is now complete. Field work is progressing normally.

Project C-184 - Animal Farm

Overall design is now approximately 90 percent complete with electrical drawings 95 percent, special laboratory equipment about 60 percent and plumbing and ventilation 90 percent finished. Recent versions and specifications re-scheduled for completion about August 13, 1948.

Project for Part I[1] on the Animal Farm is being written and will be submitted within a few days.

1.

Project Engineering Division

200 AREAS

E.R. 2309 - Meteorological Station, Building 622-A

The project covering additional facilities for Building 622-A was prepared and submitted for approval.

E. R. 2377 - Stack Gas Decontamination

Tests on various types of stack cleaning methods have indicated the sand filter to be the most economical and efficient method developed to date. As a result, every effort is being made to complete the design work on a full scale sand filter for the 200-T plant and one for the 200-B plant.

Project C-262 - Bismuth Subnitrate Preparation Facilities

The project was approved this month and Field Release issued.

Project C-133 - Special Test Wells 200 E and W

Essentially 60 wells have been drilled to date on this job.

300 AREA

Project C-223 - Building 3703

The subcontractor has started work on this job.

Project C-227 - Conversion of Office Labs., Building 3706

[redacted]

Project C-[redacted]

This project was closed out during the month

Project C-270 - 3706 Distilled Water System

A. E. C. approval is expected August 2, 1948

E. R. A-3050 - 300 Area Rolling Mill

More engineering data is still being developed. Preliminary engineering designs are taking shape after evaluation of the information which has been received.

2.

Project Engineering Division - 200 Areas Cont'd

Project C-207 - Alarm System on Existing 3706 and 3717 Sprinkler System

This project was closed this month.

Project C-189 - 3745-A Building

This project is awaiting G. E. X-Ray representative to clear final electrical hook up on the X-Ray equipment.

Project C-220 - Building 3708 Electrical and Instrument Shop

Field work is progressing at a normal rate.

Project C-237 - Building 305-A Nine Tube Mock-Up

Slow delivery of material and equipment has caused delays in field work.

700-1100 AREAS

Project C-138 - Richland Telephone Exchange

The new addition to the existing building is completed except for installation of telephone equipment.

Project C-177 - 115 KV Power Transmission Line

Design work for the entire project is about 73 percent complete and is finished for the modification of distribution lines in Richland. Work is in progress on these changes and construction has been started on the 115 KV Line[illegible]

[illegible]

[illegible] realignment and leveling of tracks of which about 15 miles have been re-layed to date. The engineering on the new cut-off route east of the 100-B Area is finished. The fill has been completed for this tract to subgrade. Track laying is progressing at the north end of the new May Junction realignment.

E. R. A-452 - Expansion of Main Plant Telephone System

Overall design is approximately 60 percent complete and nearly finished for the underground conduit system in the 1100 Area. Construction of the Williams Boulevard conduit system is progressing. A project proposal was submitted during the month.

E. R. 990-R - Replacement of Area Fences

The Security Division has modified the requirements of area fences and the revised project proposal will be submitted in the near future.

PRESENT STATUS OF WORK

Projects, Suspense Codes Authorized and under Construction

100 AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-172	Dismantling of Equipment in Demineralization and Deaerating Plants	8	8-19-47	$ 486,000
C-184	Experimental Animal Farm	0	10-27-47	286,000
C-213	Fire Protection Riverland Shop	50	1-13-48	8,200
C-222	Dismantling Unoperated Equipment in 105 Valve Pits	5	2-10-48	4,000
C-238	Effluent Sewer Line 105 F to 107 F	55	3-26-48	207,000
C-269	Temporary Radio Biological Lab. 100-F Area	0	7-28-48	10,100
	TOTAL Estimated Cost 100 Area Projects			$1,001,300

200 AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-133	Sp[illegible] 200 E & [illegible]	84	1-30-47	180,600
C-163	Additional Waste Storage and Tie Lines - 200 W (G.E.Portion Only - Subcontract not Included)	66	7-25-47	500,000
C-171	Alterations to Six Periscope Assy.	80	8-6-47	7,200
C-225	5-6 Waste Disposal to Ground	85	- - - -	34,000
C-255	Temporary Technical Office Bldg. 2707Z (Trans. To D & C Divs.)	20	5-19-48	13,800
C-262	Bismuth Subnitrate Preparation Fac.	0	7-13-48	23,000
SC 10155	Physical Testing Equipment	65	- - - -	- - - -

Project Engineering Division - 200 Area Cont'd

Project Number		% Phys. Complete	Date Auth	Est. Cost
SC 10225	Stack Filtration Facilities 200 E & W Additional Phases Contemplated	1	- - - -	$ - - - -
	TOTAL Estimated Cost 200 Area Projects			$ 758,600.
	300 AREA			
C-127	300 Area - Increased Capacity of Telephone Exchange (Elect. Div. Will Prpcure and Install Equip.)	30	5-12-47	30,000
C-142	Metal Casting Facilities	100	4-7-47	188,000
C-189	Building 3745-A X-Ray Fac.	91	8-20-47	22,000
C-207	Fire Alarm System for Bldg. 3706 & 3717	100	11-19-47	5,450
C-219	Construction of Additional H. I. Instruments	10	1-27-48	97,200
C-220	Optical Instrument Bldg. and Elect. Shop 3708 - 300 Area	44	1-30-48	81,900
C-227	Conversion of Offices to Labs. Bldg. 3706 & 3707-C Change House	19	3-15-48	429,000
C-237	Nine Tube Rock Drilling & Equip.	22	4-12-48	106,000
C-270	[illegible]		7-28-48	[illegible]
	TOTAL Estimated Cost 300 Area Projects			$964,350
	700 - ADMIN. & GENERAL PLANT AREAS			
C-196	Electrical Distribution Hdqts. Bldg. & Conversion of 2713 E to Garage	0	10-10-47	162,400
C-202	Gate House & Parking Lots - 700 Area at Stevens Dr. & Swift Blvd.	100	11-7-47	31,500
C-209	Two Story Addition to Bldg. 703	96	12-3-47	140,000
C-214	Rehabilitation of Plant Railroad	20	2-18-48	3,214,000

DECLASSIFIED

Project Engineering Division

Projects, Suspense Codes Authorized and under Construction (Cont'd)

700 AREA

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-229	Office Machine Repair Shop Hut 722L	65	3-26-48	$ 3,700
C-256	Seal Coating of 36 Miles of Plant Highway	5	5-18-48	75,000
	TOTAL Estimated Cost for 700 Admin. & General Plant Areas			$5,531,100

1100 AREA

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-134	Richland Village Dust Control & Landscape Program 1947 to June 1948 (Grass Planting to be Subcontracted)	55	12-19-46	250,000
C-146	Irrigation Extensions - Village	87	3-28-47	90,000
C-158	Air Conditioning All Dorms Except W-4 and W-13	98	7-28-47	136,800
C-218	Patching & Seal Coating of Village Streets (Trans. to D & C Divs)	0	5-13-48	78,600
C-242	Install[illegible] of Ma[illegible] Boxes [illegible]	[illegible]	[illegible]	5,[illegible]00
C-245	[illegible] Tract House L-859	0	4-15-48	7,000
C-254	Painting of 514 Permanent Type Houses	0	5-13-48	96,000
C-253	Roof Replacement - Domestic Water Reservoir - Richland	0	7-21-48	35,500
	TOTAL Estimated Cost 1100 Area Projects			$699,500
	TOTAL Estimated Cost for Active Approved Projects - All Areas			$8,954,850

Project Engineering Division

Projects Being Routed for Authorization

A-452	(C-276)	Overall Plant Telephone System	$1,235,800
A-492	(C-265)	Additional Telephone Cable - Richland to Kennewick	30,000
872-R	(C)	Area Administration Bldg. Improvement	98,200
2309	(C-273)	Water Supply & Plumbing - Bldg. 622A	13,500

PROJECT ENGINEERING - AREA REPORTS

Status of Engineering Study & Design Work in Progress During Month of July

100 AREAS

E. R. No.		% Engineering Complete
A-1004	Downcomer Design 105-F	20
A-1012	Physical Bend and Tension Testing Machine	82
A-1034	Alterations to Bldgs. 186 and 185	17
A-1044	Outlet Charging Device (Through Proposed Model III)	5
A-1046	[illegible]	[illegible]
A-1048	[illegible]	[illegible]
A-1051	[illegible] Bldg.s 105 B&F Bldg.	52
A-1052	Study 2nd Effluent Sewer Line 105 F and 107 F and Recommend New Installation	95
A-1054	Design Roller Flanging Device for Van Stone Joints	50
A-1055	Design and Estimate a Radiation Shield for Top Far Side of 105D and F	90
A-1057	Prepare Project for Earth Crib 100 B & F	20

Status of Engineering Study & Design Work in Progress During Month of July - 100 Areas Cont'd

E. R. No.		% Engineering Complete
A-1058	Study & Est. Cost of Preparing "B" Area for Operation-Devise Charge Code System	90
A-1059	Prepare Project for Steel Sewer Line at 100 B Area	1
	200 AREAS	
2279	Prepare Project for Regasketing Facilities 221-T & B	72
2285	"B" Jet Assembly	75
2288	Special Test Wells 200 E & W. 60 Wells Completed	85
2287	Study Rail Alignment of 200 W. Cranes	70
2305	Study & Recommend Facilities & Procedure for Working Diversion Boxes	95
2309	Water Supply & Plumbing - 622 Bldg. Project Submitted for Approval	95
2326	Mark Grade on Steam Line Supports 200 W	0
[illegible]	[illegible]	[illegible]
2339	Study and Recommend Outer Roller Bearing for 30 Ton Crane - Report Prepared	100
2343	Design Equipment Decontamination Station for Small Items 221B	95
2344	Design Equipment Decontamination Station for Small Items 221T	95
2353	Crane Alignment & Rail Elevation 221T	70
2355	TX Waste Storage (Field Engr. for Project C-163	70
2368	Study & Recommend a Means of Preventing Steam Cell Piping From Creeping Through A Concrete Wall	50

Status of Engineering Study & Design Work in Progress During Month of July - 200 Areas Cont'd

E. R. No.		% Engineering Complete
2369	Prepare Project to Install Manifold Outlet Piping Tank Baffles to Permit Future Use of Remaining 3-200 Series Tanks for 224-T and B Waste	80
2371	Design Canyon Decontamination Sink & Piping 221 T and B	100
2372	292-B Annex to Scrubber Facilities	75
2376	Cathodic Protection to Underground Waste Lines (Survey Work and As-Built Drawings)	95
2378	Design Precipitator Tanks with Longer Life Jackets 221 T & B	100
2381	Design Acid Supply Tanks & Piping for 222B	80
2387	Piping Changes E-I-Y Tank 224-T	20
2393	Steam Jet with Remotely Removable Features	0
2397	Specify 1-1/2" Pipe From Car Spot to 181 Tank 211T	70
2398	[illegible]	[illegible]
2400	[illegible]	[illegible]
2401	Maintenance Hoist for Cranes 212 NPR	5
2403	Revision of 222 T & B Control Labs.	10
2408	Seeding, Irrigation and Blacktopping Contaminated Ground - Held Pending Results of Other Work	20
2413	Study & Recommend Relief From Congested Conditions in 2723-W. Cancelled by H. I. Division	15
2414	Separation & Control of 231-Z Process Wastes Project in Preparation	90
2415	Air Filtration, Cooling & Heating Facilities for 2701-W, 2709-W and 2720	60

Project Engineering Division

Status of Engineering Study & Design Work in Progress During Month of July (200 Areas Cont'd)

E. R. No.		% Engineering Complete
2416	Plant Mounting Press Design	100
2417	Location Determination for Zone Signs & Directional Markers over BX Lines	15
	300 AREA	
A-3019	Housing for X-Ray Machine	98
A-3036	Designs for Construction of Optical Instrument Building 300 Area (Project C-220)	96
A-3042	Design Air Filters for Building 3706	100
A-3044	Designs for Conversion of Bldg. 3706 Offices to Labs. Project C-227	95
A-3050	Make a Design Study of Rolling Mill for 300 Area	6
A-3051	Make a Design Study of New Extrusion Press for 300 Area (Cancelled)	10
A-3056	Prepare Project for Bldg. 3706 Distilled Water System and Water Softener	100
[illegible]	[illegible]	[illegible]
A-3058	[illegible] Recommend Design Changes for Air Conditioning System Building 321	0
A-3059	Evaluate Construction of "P" Div. Change House in the 303 Area	0
	700 ADMIN. & GENERAL PLANT AREAS	
828	Bldg. 702 - Automatic Dial Exchange	96
872-R	Improvement to Area Administration Bldgs.	30
912-R	Acid Storage & Handling - 706 Bldg.	15

10.

Project Engineering Division

Status of Engineering Study & Design Work in Progress During Month of July - 700 Area Cont'd

E. R. No.		% Engineering Complete
925	Combined Maintenance Shops - Bldg. 722	100
941	Designs for Experimental Animal Farm Project C-184	84
954-R	Cylinder Rack for Trailer	10
962	Designs for 115 KV Power Line Through Richland Project C-177	72
973	Designs & Engr. for Elec. Dist. Hdqts. Bldg. Sub-Station 251 & Conversion of Bldg. 2713 E to Garage Project C-196	28
990-R	Fencing all Areas	15
997	Deodorizer for Building 705	5
A-401	Telephone Cable Layout - Bldg. 720	20
A-409	Telephone Cable Layout for Bldgs. 703, 705, 760 and 770	0
A-420	Engineering Work for Rehabilitation of Plant Railroad. Project C-214	45
A-428	Design [illegible] Machine Repair Shop Part [illegible] Project C-229 [illegible]	[illegible]
A-445	Electrical Design for Bldg. 3706, 3703, and 3707	85
A-451	Layout for Concrete Work 321 Bldg.	100
A-452	Prepare Project for Expansion of Main Plant Telephone System	40
A-463	Electrical Drawings for Charging Device	45
A-464-R	Metering of Power - All Process Areas	10
A-468	Illumination Tests - 716 Garage	5

11.

Project Engineering Division

Status of Engineering Study & Design Work in Progress During Month of July - 700 Area Cont'd

E. R. No.		% Engineering Complete
A-470	Engineering for Seal Coating of 36 Miles of Plant Highway	100
A-483	Electrical Work - Building 271 E & W	100
A-485	Study for Sidewalks - 700 Area	35
A-487	Study of Lighting - Bldg. 703	85
A-488	Study of Lighting - Building 723 Laundry	100
A-489	Study Road Improvement Between Midway and Priest Rapids	5
A-490	Project for Columbia Camp Rehabilitation	20
A-492	Preparation of Project Additional Telephone Cable - Richland to Kennewick	60
A-493	Improvements to Offices No. 2126-30,703 Bldg.	80
A-496	Prepare Project for Temporary Biological Laboratory Facilities - 100 F Area	20
A-497	Study for Remodeling Windows - Guard Towers - [illegible]	[illegible]
[illegible]	[illegible]	[illegible]
A-499	[illegible] Study - Room 2240-1-2-3 - 703 Bldg.	10
A-500	Badge Stamping Machine & Jig - Bldg. 705	95
A-501	Ice Flaking Machine - Hospital	0
	1100 AREA	
812	Design Work Irrigation Extensions - Village	95
841	Design Work for Richland Dust Control & Landscape Program (Project C-134)	78
A-416	Engineering for Patching & Seal Coating of Village Streets (Project C-218)	100

12.

Project Engineering Division

Status of Engineering Study & Design Work In Progress During Month of July - 1100 Area Cont'd

E. R. No.		% Engineering Complete
A-426	Electric Heating - Wiring - M.S.Warehouse	25
A-453	Designs & Specifications for Replacement of Roof - North Reservoir - Richland Proj. C-253	50
A-455	Design for Renovation of Tract House L-859	99
A-494	Revise Village Map	40
A-495	Sketches for Installation of Evaporative Cooler in New Houses & Apartments	100

ENGINEERING STUDIES GROUP REPORT

Studies Completed this Month

E. R. No.		Date Completed
4296	Oil Reclamation Survey	7-8
4333	Stainless Steel Control	6-29

Studies Added This Month

4343	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
A-489-S	Improve Midway - Priest Rapids Road	5-10
C-141-S	Detail Machine Painting R. R. 98 Supplement	7-16

Active Studies		% Complete
4318	Revise Packing & Gasket Standards	10
4324	Lubrication Survey 300 Area	80
4326	Inhibited Oil Usage 190 Bldg.	75
4327	Maintenance of Pitched Roofs 700 Area	80
4330	J. I. Penn & Worthington Compressors	70
4336	Oil Coding System	0

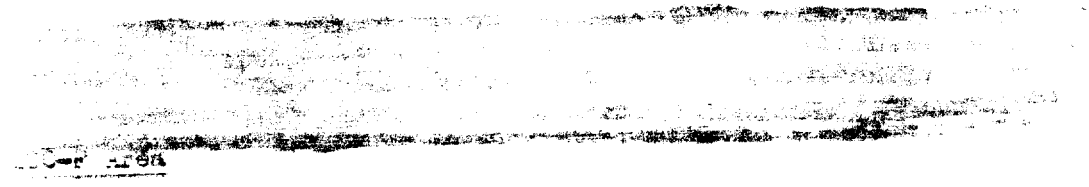
Project Engineering Division

Active Studies - Cont'd

E. R. No.		% Complete
4337	Village Survey	95
4338	Tire Recapping and Repairing	75
4339	Sign Standardization and Control	95
4341	Transportation Division Consolidation	80
4342	Analysis of Heavy Duty Lacquers	25

BACKLOG SUMMARY

	Work on Hand 6-31 Estimated Man Days	Work Completed During July Estimated Man Days	Work on Hand 7-31 Estimated Man Days
Studies	187	57	195
Proj. & Design	10,725	2,104	11,936
TOTAL	10,912	2,161	12,131



ELECTRICAL DIVISION

JULY, 1948

GENERAL

Work Order Summary - Estimated Mandays:

Area	Work on Hand June 27 Estimated Man Days	Work Completed to July 30 Estimated Man Days	Work on Hand July 30 Estimated Man Days
100-B	241.3	196.4	337.5
100-D	297.5	261.1	382.9
100-F	268.2	368.2	365.0
200-E	260.8	239.3	300.4
200-W	303.0	211.1	364.2
300	193.1	181.7	175.4
700	215.4	200.4	227.5
Telephone	954.5	521.7	1305.0
Minor Const.	554.5	307.5	506.3
Distribution	3725.0	898.0	4184.0
Total	6993.3	3385.4	8148.2

The above summary includes routine work requests as well as Project construction work and regular work orders. The increase in telephone backlog and distribution backlog is in line with expectations under current conditions.

The attached load chart for the peak day of the month, July 20, shows a peak of [illegible] outweighed by demands resulting from increased construction activity. Increased load on the 220 KV system results mainly from the return of the 100-B Area to active service. This peak day happened to occur one day after a major power interruption (July 19), and the sharp increase of load during the early part of this peak day indicates gradual increasing power requirements to normal after this outage.

Under Project C-177, extensive work has been done on the 7.2 KV feeders in preparation for cutting over to the new 115 KV system. This work consisted of installing a new 400 ampere 7.2 KV oil circuit breaker in Station B1-S1 and construction of new 7.2 KV lines in the vicinity of Lee Blvd. between Thayer and Stevens Drive. Further similar work will continue immediately.

During the month new outdoor switchgear for Richland 115 KV/7.2 KV stations was received as well as 7.2 KV magno-blast breakers. Subcontractors have broken ground for the north station in Richland and are assembling labor and materials for the 115 KV line construction.

It was decided to move the 66 KV line in Richland from B1-S1 to B1-S3 station 25 feet to the west to permit construction of new parallel 115 KV line from north station to south station in Richland so as to maintain continuous double service

to 300 Area on 66 KV until 115 KV system is ready to tie into that area with feed from both sides.

The rules of procedure for the Electrical Standards Committee have been completed and approved. Request for funds as required for publication of standards is being made.

Resulting from visit of Mr. Richard Soggo, Standards Committee, Schenectady, liaison has been established with that group who, in the future, will receive copies of minutes of our meetings and who will send us pertinent material for our use in establishing Hanford standards.

An agreement has been reached with the Project Engineering Division that they will be responsible for take off of electrical materials on projects, and one trained man from the Electrical Division will be transferred to Project Engineering for assistance in this work.

In line with Company policy, the final reclassification of weekly personnel was completed and has been in force since July 19.

ORGANIZATION AND PERSONNEL

During the month there were three terminations, one Groundman, one Electrician (retired), and one Dispatcher.

Two men were hired, one Helper, and one Substation Operator.

One Assignment Engineer, R. D. Crosier, was hired to replace C. B. Wagner who was reported last month to have been appointed Acting Assistant Area Engineer in charge of the 100-D Area Electrical group.

Number of employees on payroll:	July Exempt	Non-Exempt
[illegible]	41	[illegible]
End of month	42	236
Net Increase	1	

The above is in accordance with the force report for this month. Difference by one from previous month's report is due to non-exempt employee in the process of transferring.

AREA ACTIVITIES

1. 100 Areas

A. General

Effective July 5, all 100 Area Electrical groups were placed on five day week with authorized planned overtime for the sixth day. Shift schedules were revised accordingly.

A severe Bonneville Power Administration disturbance occurring on July 19 caused an over-voltage, over-frequency condition for about seven minutes. The 105 Buildings in all three areas scrammed. Numerous 440 volt motors

in all three areas tripped off the line. The only apparent damage to major equipment appears to be on the vertical safety rod rectifier units. Those in 100-D were completely inoperative. Two of the four units were rebuilt, and two were removed from the 100-F Area and installed in 100-D until replacement rectifiers (ordered for all areas) are received.

B. 100-B Area

The brine pit sump pump motor in the 184 Pump House brine pit was rewound and restored to service.

The east flood light on the north side of the railroad track, opposite the unloading dock was reconnected to the outside light circuit of the brine pit. This allows operation of the crane shovel between the east and west flood lights in the vicinity.

The 2 KW inverter in the 190 Process Water Building was wired in to the annunciator in the building control room.

Work was started on the insulation of the motor indicating light terminals on the control boards in the 190 Process Water Building. This will help to avoid a repetition of the accidental tripping of process pump motors such as occurred in the 190-D Building on July 13.

Considerable time was spent installing electrical services to a planer, grinder and a Do-All machine in the 1717 Maintenance Shop.

A vibrator was fabricated for the Spary equipment being used for fabrication of H rods.

A 440 volt service was run to the 1713 Building, which is now used as the Electrical Sh[illegible]

[illegible]

On July [illegible] unit started operation.

The damper solenoids on fans No. 5 and No. 10 burned out and were replaced.

A telotalk receptiole was removed from the south wall of valve pit to permit S.W.P. clothing lockers to be installed along the wall.

Repairs were made to the low-speed motor on "A" regulating rod following scram on July 19. The brake lead under brake housing was found broken.

Preventive maintenance overhaul was performed on supply fan No. 3. Both bearings were replaced.

C. 100-D Area

On July 13, the No. 1 process pump motor oil circuit breaker was tripped off the line while the unit was operating. Investigation indicated that the oil circuit breaker had tripped as a result of an accidental short of the "red" indicating light of No. 1 motor at L-1 panel. An Instrument Mechanic was tracing wiring in conjunction with installation of the new

panel required for the 190 addition and had just removed one lead to this light when the oil circuit breaker tripped. The "red" indicating light is so connected that a short across its terminals throws full voltage on the oil circuit breaker trip coil.

An open circuit and the twisted pair carrying voice circuits from Patrol Headquarters to the area on the public address system was detected during a practice evacuation and repaired and put back in service the same evening.

The instantaneous overcurrent trip on No. 1 incoming line relay in the 182 Reservoir Building was repaired when it was found to be defective.

A 20 HP fire and sanitary pump motor in the 183 Filter Plant Building burned out while on the line carrying load. The motor was rewound and returned to service.

An oil circuit breaker in the backwash pump cubicle in the 183 Filter Plant Building was overhauled. A loose operating mechanism had caused erratic operation and this was repaired.

Wiring to two chemical feeders in the south end of the 186 Demineralization Building was removed so that the feeders could be transferred.

A new L-1 panel containing additional instruments for 190-DR was installed in the control room of Building 190.

Service wiring and instrument wiring to Building 1904 were disconnected to permit moving the building for construction changes.

In order to provide proper construction clearance over new railroad tracks [illegible] north to provide temporary power to the 183 building while the above work was in progress has been dismantled and removed. Crossing now meets all code requirements.

Telephone cable, service and twisted pair were disconnected from the 1904 Building and will be reconnected after building has been moved to its new location 25 feet from present location.

Twenty-three bad order poles were replaced in the distribution and fence lighting circuits.

105 Pile Building

The red indicating light on automatic transfer switch was connected to indicate when switch is in "emergency" position.

Installation of back-up limit switch on upper far work area crane was completed. Two reelites and push-buttons were removed from "C" elevator for cranes transferred to 105-DR.

Drop-out tests were performed on vertical safety rods after replacing rectifiers.

Installation of electric wiring for 14 additional strain gauges mounted on top of unit and on far side was started.

Vertical safety rod clutch collector rings and brushes due to reported slipping of No. 29 rod during daily test were cleaned.

D. 100-DR Area

Electrical work requirements directly stemming from the 100-D construction program have increased considerably. While a large proportion of the time to date has been utilized for stand-by men during movement of cranes etc., a start has been made toward permanent "ties" between the present installation and the new construction. The necessary conduit runs through the pipe tunnel are being planned and materials being requisitioned from Construction for this installation in the 190-D Building.

An overhead guy stub was installed in one of the 230 KV guys in the area in order to provide clearance for construction traffic.

At the request of "DR" Construction, eight spans of series street lighting conductor were isolated from the circuit and two poles were removed in order to provide clearance for excavation work necessary in the installation of the 72 inch pipe line.

A transformer serving the Badge House in this area was removed from service at the request of Construction.

Equipment is now on hand for installation of the new 13.8 KV feeders to the area from Substation A-4.

Installation of the new control and protective equipment is under way [illegible] be delayed somewhat due to an error made by Westinghouse in revising the two control panels.

E. 100-F Area

The following work was performed on equipment in the 183 Filter Plant Building:

A. Repaired starter and wiring to chlorine warming pit exhaust fan.

B. Repaired badly damaged control station on crane.

C. Replaced defective coil on No. 3 line feeder vibrator.

Temporary wiring and switches were installed on the experimental charging machine mock-up in Building 189.

Under Project C-238, Effluent Line 105-7, electrical work is complete except for work at 107 Inlet House and replacing signal wire conduct between 1608 and 105 Buildings.

105 Pile Building

Lead cable and connections to terminal block on rear face for Technical Division experiment were installed.

The telephone booth was removed from the valve pit for installation in Building 184.

A temporary rectifier unit was made up for standby service for the vertical rod clutches pending receipt of new rectifiers now on order.

F. Hanford

In order to provide clearance for crane work in the railroad tie yard, it was necessary to disconnect the 7.2 KV line feeding the Gravel Pit at Hanford. The line was restored to normal after completion of work.

Considerable work was done on the 7.2 KV line feeding the Hanford Airport.

The 66 KV potential transformer which failed during recent electrical storm has been repaired and is now ready for installation on the Pasco line at Hanford.

The emergency pumps which were installed in the old Hanford Control House during the flood were removed during the month as the river has returned to normal levels.

2. 200 Areas

A. General

The power surge of July 19 caused no damage in the 200 Areas other than burning of numerous light bulbs and relaying of several motors which restarted without difficulty.

[redacted] of the lines made while obtaining the above readings revealed all connections secure and the lines in good condition. However, later in the month a check of the ammeter at the rectifier in the "T" Area indicated a drop in current on the system. A check of the lines revealed a break in the vicinity of the excavation for the piping from 155 diversion box to 241-TX. The break was repaired on July 29, 1948.

On July 19, three of the twelve samples of stainless steel pipe in the 200-W Test Area were removed from the ground for inspection. One of the samples was reburied, for, although there were signs of corrosion, results were not pronounced enough in order to determine definite comparison between the unprotected pipe and the protected pipes. It is estimated that by another three months, results should be conclusive. Sections of the other two pipes that were excavated and soil samples are ready for laboratory analysis. A summary of the observations made at the time of excavation may be found in the report on the cathodic protection experiments dated July 21, 1948, by John F. Kane.

B. 200 East Area

The Rowan control switches that are no longer required at the 273 Building have been removed and sent to the Salvage Yard in Richland.

Electrical Division

Due to the "blackout" and "operating" procedure for the 292-B Building, all outside lights for the 292-B Building and all the lights for the two precipitator buildings were rewired so that they could be controlled from one switch located outside the fenced enclosure. The one control switch controls a relay in each building which in turns controls the lights.

In order to facilitate the checking of instruments in the 222-B Laboratory, three new receptacles were installed in the hallway of the building.

The motor on the air conditioner for the Carpenter Shop failed. An inspection revealed that the insulation on the motor leads had failed. The leads were replaced and the motor returned to service.

The left hand impact wrench on the 221-B Canyon Building failed. A spare impact wrench will be installed as soon as the canyon conditions will permit. The defective wrench will be checked and repaired if possible under the special hazards conditions.

There were two motoair failures in the 221-B Canyon Building. The winding failed on one and a bearing failed on the other motor. The bearing was replaced and the motor returned to service, but due to contamination the other motor will be destroyed.

The coil on the magnetic unloader on No. 2 air compressor in the 271-B Building failed on July 24. The coil was rewound in the 200 East Area Motor Shop and replaced in service.

A bearing failed on the 5 HP air conditioner motor in Building 212-N during the month. A new bearing was installed and the motor returned to service.

The 40/20-HP D-2 centrifuge motor in the 224-B Process Building failed on July 28 at 8:1[illegible] p.m. An inspection showed an open [illegible] winding but due to the contamination conditions this motor cannot be dismantled until a later date. The spare motor in the "B" cell was installed and the equipment returned to service at 3:15 p.m. on July 29.

There were 25 motors repaired in the East Area Motor Shop during the month.

Project C-225, Cathodic Protection - 5-6 Waste Lines, was completed.

Three poles located near the 1704 Building which were blown over during heavy winds were straightened and retamped.

At the request of the Transportation Division Yard Master, a forty foot pole was set at the 274 Building Loading Dock.

Sixteen 2.3 KV poles which were blown over during heavy winds were straightened and retamped.

C. 200 West Area

On July 1, a crane operated by the Transportation Division struck and
7 burned to the ground one phase of the 2300 volt primary feeder supplying

power to the TX Area which was repaired by the Distribution Section. There was no interruption of service to the "T" Plant except for a momentary dip in the lights and several motors tripped off the line. These motors were restarted immediately.

On July 10, a crane struck and broke down a street light circuit in the TX Tank Farm Area. The crane was being loaded onto a railroad flat car by the Morrison-Knudsen Company employees when the accident occurred.

The Safety Engineer for Morrison-Knudsen Company was contacted and the procedure for crane operation near electric lines was discussed in detail.

The line was repaired and returned to service the same day.

The Distribution Section of the Electrical Division installed disconnects in the E8-L11 fence light circuit at the East Gate House on July 2[illegible]. These disconnects were installed for more flexibility in de-energizing the fence light circuit for the pole replacement job.

The Yakima barricade was moved 200 yards east to the original location on July 14. Considerable electrical work was involved and electric heaters are yet to be installed.

Considerable mechanical difficulty is being experienced with the 15 HP agitators in the 221-T Canyon Building. The practice has been to pull replacement units from the "U" Building, install and test in the "T" Building. This method, of course, contaminates the machine and makes repairs very difficult. This procedure has been changed and in the future all replacement units must be tested in the 200 East Area shop before being installed in the Process Buildings.

[redacted]

The tachometer-type T-2 centrifuge in the 221-T Canyon Building was giving erroneous readings. An inspection of this trouble revealed a high resistance contact between the generator and the indicating meter. The high resistance connection was found in the cell connection contacts. These contacts were very badly corroded as are all other metal parts in the cell. The contacts were cleaned and the centrifuge returned to service. A study is being made to determine preventive measures necessary to avoid further trouble.

The evacuation system at the "U" Area is 85 percent complete. This work will be finished the first week in August.

Plant crews provided escort for the movement and operation of all cranes, drag lines, etc. in the general plant area.

Seven hundred series fence lighting circuit in the area that had been damaged by crane on July 10 was repaired.

3. 300 Area

The increase of operating temperature on the "A" type canning furnace in the 313 Material Preparation Building as reported last month has resulted in a shorter life for the heating elements. These now last about two weeks. The subject is being studied.

Tests and adjustments were made on July 3 in an effort to eliminate the hunting tendency of the induction furnace generators in the 314 Building, Melt Plant addition. No noticeable improvement was obtained, and adjustment is in accordance with manufacturers recommendations. The probable cause may be inter-coupling of magnetic circuits.

Various projects are under way with normal progress of construction.

4. 700-1100 Areas

Project C-209, installation of fire alarm equipment in the 703 Building addition, is 95 percent complete. Horns have not as yet been delivered.

At the request of Construction, the size of the new transformer bank serving the Robert Gray Junior High School was increased to provide for additional load. Also, extended secondary and service to the new saw shed.

A transformer bank serving the Construction Pipe Shop located on Benham Avenue was removed at the request of Construction.

At the request of Richland Patrol, a new "Path-O-Safety" light was installed in the safety crossing in front of the Recreation Hall.

At Dormitory T-8, we removed 440 volt service to the air conditioner and replaced same with 220 volt service.

[illegible]

Service was provided to [illegible] Contractors at both Marcus Whitman and Robert Gray Schools.

Lighting service to two hutments in the Labor Yard which had been disconnected during the flood was provided.

Damage to street lighting and fire alarm circuits caused by truck breaking off pole at corner of Perkins and Williams was repaired.

Service was disconnected from the Columbia High School transformer bank and was reconnected underground.

All overhead 66 KV guy lines were extended or shortened in order to provide clearance for the new dual highway being constructed to the 300 Area Barricade.

In order to provide temporary lighting for construction work on the extension of the Sewage Treatment Plant, it was necessary to set the following new poles: seven 50 foot, one 45 foot, two 40 foot and nine anchors. Secondary wires were strung and 26 1000 watt flood lights were mounted. The transformer setting was constructed consisting of one 50 KVA transformer and one 7.5 KVA transformer.

9

During the month, Construction Housing Areas "B" and "E" were inspected and accepted for operation and maintenance by the Electrical Division. The two 7.2 KV express feeders from Station B1-S3 to Hunt Point were also inspected and accepted.

Two 60 foot poles were set for radio antennas at the Richland Patrol Headquarters.

The new radio station WGMB-12 in Richland was installed and cut into service on July 6, 1948.

5. Distribution and Transmission

The services of entire personnel of one crew have been kept busy providing escort for the movement of construction machinery so as to protect overhead lines and personnel. Despite this measure, as will be noted from outage report, equipment has been moved without proper notification or clearance and several outages and near accidents occurred because of disregard of safety rules by Subcontractors.

The final building plans for new line and substation crews headquarters to be located near 251 Substation have been completed and approved.

The following poles were Osmose treated during the month:

	Inspected	Condemned	Treated
200 East Area	88	72	16

This crew was used elsewhere during the rest of the month, cleaning and grading substation yards.

During the month, two hundred [illegible] for design and construction and [illegible] Electrical Distribution.

The following radio equipment was serviced during the month:

Two way mobile sets	104
Two way mobile units overhauled completely	15
Stationary units	5
Stationary units installed	1
Mobile units installed	12
Mobile units removed	10

Radio station WGMB-2 was changed to new location, Yakima barricade.

In the 700 Area, the oil circuit breaker on constant current regulator of 700 series street lighting circuit failed and was replaced with spare.

Power Supply Interruptions

Date	Area	Circuit Affected	Duration	Remarks
		230 KV		
July 1	200-W	2300 volt line E8-X19	3 hrs. 8 min.	Crane knocked phase down

Power Supply Interruptions (Cont'd.)

Date	Area	Circuit Affected	Duration	Remarks
		230 KV		
July 10	100-D	Fence light circuit	2 hrs. 4 min.	Transformer fuse blown
July 19	All	All	34 min.	Severe 230 KV disturbance due to lightning. Grand Coulee dropped 97% load. Critical Y after all areas scrammed.
		66 KV		
July 1	Richland	D1-L5	2 hrs. 20 min.	Ditch cave-in at Lee and Thayer, line down
July 11	Columbia Camp	REA line	5 hrs. 55 min.	Airplane struck line at Yakima River crossing
July 17	Richland	300 series street lights	1 hr. 4 min.	Fixture broken by boys
July 17	Richland	D1-L1 from D1-X1	25 min.	Crane knocked wire [illegible] Motor Room Operator reported that the master [illegible]
July 17	[illegible]	[illegible]	[illegible]	[illegible] by crane
July 18	Hanford [illegible]	Hanford-Taunton Line	1/2 min.	Lightning 21-75 relay, B phase, first zone
July 20	Richland	All street lights, broken pole at Williams and Perkins	39 min.	Construction truck broke pole

6. Telephone Section

The installation of temporary 26 pair neoprene cable for temporary trunk service to "A" Housing Area is now complete and final splicing is awaiting Subcontractor's cable within the "A" Area. This temporary cable will permit installation of approximately 40 percent of telephones requested in "A" Housing Area. Division heads have been consulted relative to priority for actual telephone installations which will be started during the first week of August.

The loading, balancing and splicing of the 27 quad trunk cable between "BY" and White Bluffs is about 25 percent complete.

The 50 pair cable serving the 234-5 Area was installed and placed in service.

The following number of lines and sides were vacant on the Richland telephone switchboard as of July 29, 1948:

Class	Lines Vacant	Sides Vacant
1500 Series	12	28
Resident Numbers	51	344
Office Numbers	36	15

The number of sides vacant on resident numbers will be considerably smaller when people who have moved to the "A" Housing Area are given service.

During the month the following telephones were moved:

	Installed	Removed
All work areas	78	39
Richland	437	373
North Richland	136	57
White Bluffs and 100-H	77	13
Total	728	482

[illegible] completed or in process by Design Section include:

[illegible] Instrument Divisions

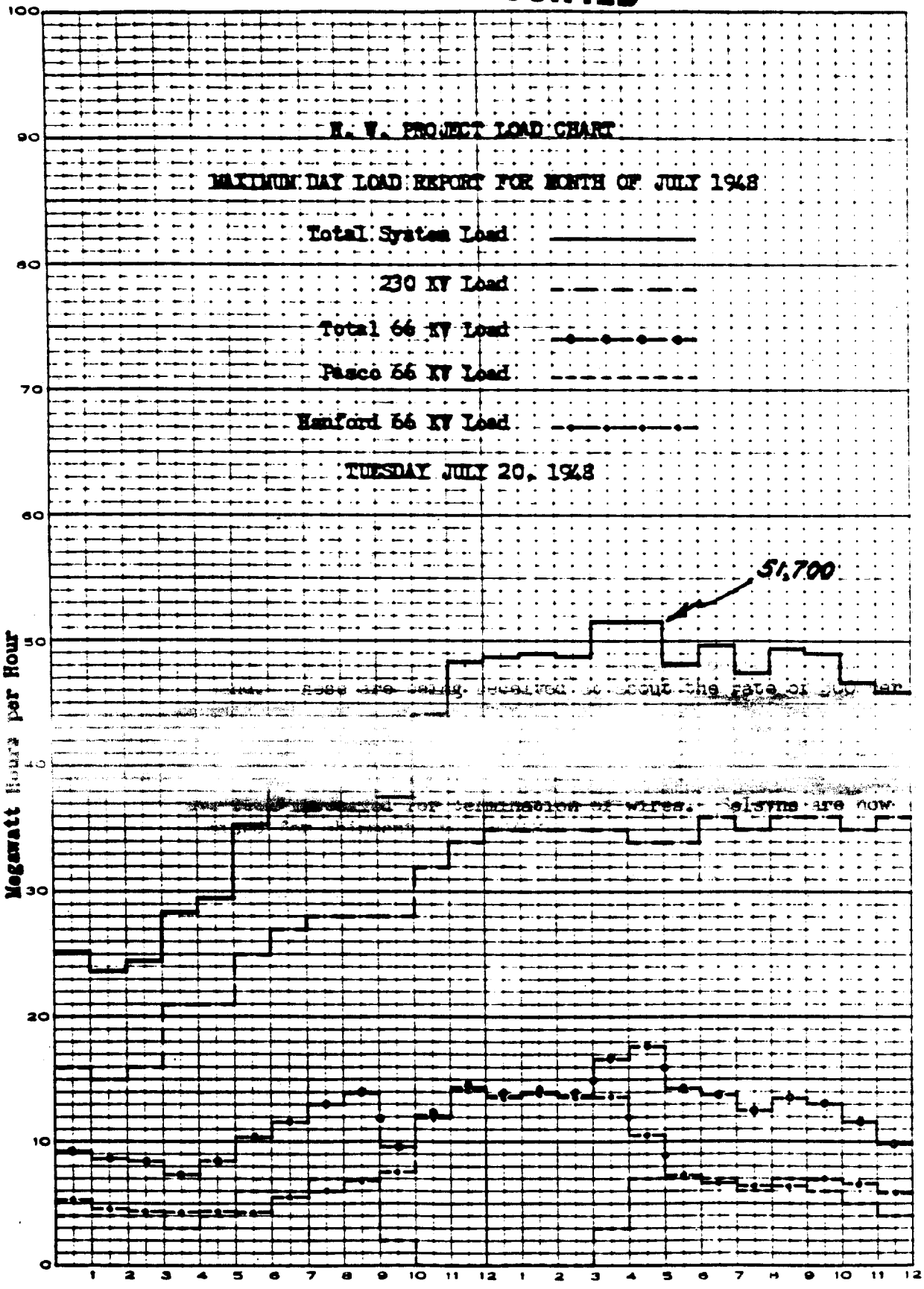
[illegible]make M.S.A. Dials

PLANT STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING JULY 31, 1948

ITEM		ENERGY - KW HRS. June	ENERGY - KW HRS. July	MAX. DEMAND - KW June	MAX. DEMAND - KW July	LOAD FACTOR - % June	LOAD FACTOR - % July
230 KV SYSTEM							
A-2 Out	(100-B)	2,1[illegible]	7,350	10,000	11,600	29.9	85.2
A-4 Out	(100-D)	7,3[illegible]	[illegible],630	12,000	12,500	85.2	82.0
A-6 Out	(100-F)	4,2[illegible]	7,930	11,400	11,500	52.0	83.3
A-8 Out	(200 Areas)	1,9[illegible]	[illegible],910	3,400	3,200	80.1	84.4
TOTAL OUT		15,74[illegible]	[illegible],320	36,800**	38,800**	-	-
MIDWAY IN		16,0[illegible]	[illegible],623	35,200*	36,400*	63.3	90.2
Transm. Loss		31[illegible]	903	-	-	-	-
Per Cent Loss		[illegible].9	[illegible] 1.2	-	-	-	-
66 KV SYSTEM							
B1-S1 Out	(Richland)	1,252	[illegible],314	2,600	2,800	66.8	63.1
B1-S3 Out	"	1,155	[illegible],304	3,300	2,800	48.6	62.6
B1-S2 Out	"	2,232	[illegible],405	4,392	4,566	70.6	70.8
B3-S4 Out	(300 Area)	174	[illegible]85	384	456	62.9	54.5
B3-S5 Out	"	588	[illegible]68	1,280	1,200	63.8	63.6
B1-S4 Out	(North Richland)	1,440	1,[illegible]46	2,707	2,938	73.9	75.3
B7-S10 Out	(White Bluffs)	321	[illegible]02	900	1,147	49.5	47.1
B9-S11			[illegible]14		280	-	6.7
Hanford Out		218	[illegible]39	500	500	60.5	64.2
TOTAL OUT		7,380	[illegible],077	16,063**	16,687**	-	-
Hanford In		3,689	4,[illegible]38	20,000*	18,300*	25.6	33.3
Pasco In		3,691	3,[illegible]46	12,800*	7,600*	40.0	64.5
TOTAL IN		7,380	[illegible]184	32,800**	25,900**	31.3	42.5
Transm. Loss			[illegible]07	-	-	-	-
Per Cent Loss			[illegible] 1.3	-	-	-	-
PROJECT TOTAL			[illegible]	36,800**	38,800**	-	-
230 KV (Item 5)		15,740	[illegible],120	16,063**	16,687**	-	-
66 KV (Item 15)		7,380	[illegible],077	52,863**	55,487**	-	-
TOTAL OUT		23,120	[illegible],197	35,200*	36,400*	63.3	90.2
230 KV (Item 6)		16,051	[illegible],423	32,800**	25,900**	32.3	42.5
66 KV (Item 18)		7,380	[illegible],184	48,300*	51,700	67.4	84.8
TOTAL IN		23,431	[illegible],607	-	-	-	-
Transm. Loss		311	[illegible]10	-	-	-	-
Per Cent Loss		1.3	1.3				

* Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System--98.0
Average Power Factor - 66 KV System--91.1



INSTRUMENT DIVISION

MONTHLY REPORT

JULY, 1948

August 3, 1948

GENERAL

In keeping with the reduction in the design load for the new areas, it is planned to shift certain Instrument Division personnel who have been on assignment with the Design and Construction Divisions back into operations vacancies.

The tempo of the Design, Development and Manufacturing Sections for instruments for the new areas is reaching an all time high. The burden of supply contracts for large blocks of instruments at early delivery dates is left to commercial vendors. Though relieved of shop work in these cases a large amount of supervisory time in following the contracts is required. To minimize this aspect of the problem we have concentrated on complete manufacturing drawings, good product engineering of prototypes and limited manufactured sample lots.

On July 28, 1948, a vendors invitation to bid meeting was held at Hanford for the purpose of obtaining quotations on 60 Four-fold Alpha Hand Checkers and 40 Five-fold Hand and Foot Counters. Representatives of eight manufacturers were present. Bids are due August 13, 1948.

Work Order Summary:

Area	Work on Hand July 1		Work Completed in July		Work on Hand July 31	
	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days
100-B	17	[illegible]	14	[illegible]	5	[illegible]
100-D	[illegible]	263.5	3	[illegible]	17	312.3
100-F	12	123.7	2	338.8	17	121.3
200-E	8	35.7	5	268.3	7	24.7
200-W	15	13.8	5	371.0	16	15.9
300	88	829.0	36	876.2	92	861.4
700	23	29.9	20	136.7	19	27.3
Totals	174	1323.1	85	2412.0	173	1369.3

Organization and Personnel

Number of employees on payroll:

	July
Beginning of Month	196
End of Month	197
Net Increase	1

Reason: One employee added to payroll as Instrument Helper.

100 AREAS (Reference Report No. 10628)

The inner-barricade instrument construction work being carried on by the Division is progressing in a very satisfactory manner. The Construction Divisions schedules for completion will be met.

It has been necessary to operate all 105-B sample room RXG's on 10 x 10^{-11} range due to high chamber background. This does not give sufficient sensitivity. In an effort to correct the condition, all chambers were decontaminated, but the background quickly built up to the former level. The situation is thought to be due to a film formation in the process water tubes and is expected to correct itself during continued operation.

The Flowrator Recorder for the CO_2 addition system in 105-D and the Taylor helium make-up gas pressure recorder have been panel mounted and installed on the wall to the right of CO_2 Rotameters.

Additional range changes are anticipated in view of an announced intention to increase unit atmosphere from 25% to 40% CO_2.

During extreme power fluctuation on July 19, the voltage dropped momentarily and then increased to a point considerably above normal. The effect of this condition as evidenced in the 190-D process water pressure control response was unusual and, in the opinion of the writer, not heretofore experienced on this project. The low voltage was of such short duration that the flywheels of the electric pumps maintained normal water pressure. On the other hand, the high voltage and frequency condition that followed increased the water pressure to slightly above full chart reading, to approximately 405 p.s.i. This obviously was due to sudden increased speed of motor driven pumps. It is to be noted too that the overpressure regulators were likewise of no protective value. The 190 Control Room operator reported that the master controller immediately reduced the control air to zero when [illegible] the high [illegible] the [illegible] pump speed. [illegible] pressure [illegible] power [illegible] that there was no power available to operate the over-pressure regulators.

All 100 Areas units were shutdown as a result of this power fluctuation at 1:53 P.M. Effects of the surge on instrument equipment was felt in the 100-D Area; where fuses blew on rectifiers to temperature monitor system, tube burned out in amplifier to 183 basin level control system and several pilot lights ruined in some Integrons. In the 100-F Area fuses were flown on: Bailey Calculator, 1701 Electrometers and two Health Instrument Counting Rate Meters.

200 AREAS (Reference Report No. HW-10633)

High level radiation was discovered on manometer lines in the operating gallery at Section 3 in Building 221-T. These lines lead to the 3-5L dissolver off-gas scrubber. Daily survey indicated rapid decay until it reached safe limits. Decontamination of instruments on Sections 12 and 13 in Building 221-B reported last month has been held up until all conduits can be sealed.

Two orifice sections for measurement of stack gas flow to an experimental gas scrubber in Building 292-BA were fabricated and calibrated.

200 AREAS (Cont.)

The 30 ton tank scales for the Hydroflouric acid storage tank were overhauled and calibrated prior to refilling of the tank. Calibration of production balances in 231-W has been difficult due to discrepancies between weights used for calibration and those used for weighing. All these weights are being standardized against a set of certified weights by the Standards Section.

Project C-163 -- Waste Line Thermocouples

Three thermocouple assemblies were installed this month. Work is approximately 45% complete.

300 AREA (Reference Report No. HW-10629)

Project C-219 -- Additional Health Instruments

A lot of 20 each, Juno and C.P. Survey Meters, are 50% complete. A revision has been issued to the Technical Associates to cover improved battery boxes on CP meters. Prototype Neutron Meter is completed. Production of sample lot available in September. Four Standard Alpha Counters were completed and delivered. Three BF_3 Neutron Counters are ready for testing. Poppy Cart redesigned for outside vendor fabrication.

A portion of these instrument requirements are being combined with health instrument requirements for the 234-5 project to obtain the advantages of quantity production.

Design Section

Major work completed or in process by Design Section include:

1.	[illegible] Sample Holder	[illegible] Division
2.	[illegible] Spectrometer	[illegible] Division
3.	[illegible] Poppy Frame	[illegible] Instrument Divisions
4.	Revise Perforgraph	Health Instrument Divisions
5.	Remake M.S.A. Dials	Health Instrument Divisions
6.	Redesign 1½" Ion Chamber	Health Instrument Divisions
7.	Redesign Poppy Cart	Health Instrument Divisions
8.	Design Rotameter Stands	Health Instrument Divisions

Development Section

1. Photoelectric Position Indicator for Slug Marking.
2. Canned Slug Counting Device for 100 Areas.
3. Power Level Indicator for 100 Areas.
4. Cover Motion Recorder for 100 Areas.
5. Automatic Temperature Monitor - IBM System Survey.

Cover Motion Recorder for 100 Areas

A preliminary design has been made for a device to monitor and record the motion of the top of a pile for the Technical Division. A prototype pneumatic-electric transmitter and other main parts of the mercury level follow-up system for one end of the mercury line have been fabricated. A recorder and other miscellaneous parts have been ordered for use in the system.

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300 AREA (Cont.)

Alpha Scintillation Counting

Further experimental work with scintillation counting of alpha particles indicates that geometry factors of approximately 30% may be obtained.

Optical Section

Project C-171 — Crane Periscopes

Little progress was made on the Crane Periscope Project C-171. Two parts, the eyepiece tube and collimator tube, are too long for any lathe in the Instrument Division. Previously we have received good service at the 200-W Area Machine Shop, but this month they were not able to finish our pieces because one lathe was out of commission and the other was busy with emergency jobs. We expect it will be another week before we can go ahead on this project.

700 AREA (Reference Report No. HW-10630)

Standards Section

Calibration of optical pyrometers represents a new service. One was compared with our Standards Section pyrometer over the range 1400-3400°F.

New Equipment Received

From Bureau of Standards: Two platinum - platinum, 10% rhodium thermocouples covering the range 0-1458°C. Certified accuracy up to 1100°C is ± 0.5°C, and ± 2°C up to 1458°C. Our first use for these couples will be in connection with the calibration of Building [illegible] chromel alumel thermocouples at [illegible]°C.

Production Report

28 Mica window tubes
38 Thin wall glass tubes

Metal-Glass-Mica Seals

At our request the Schenectady Research Laboratory did develop mechanical features of a Mica Window Tube. The equipment and procedures developed there will be used in our Tube Shop for further tube production. We have delayed entering into this production pending the availability of satisfactory Mica Window Tubes from commercial sources. However, to date we have been unable to procure tubes that meet our specifications and requirements. Approximately $1800 has been spent on tubes ordered for testing purposes from Victoreen, Sylvania, North American Philips, Cyclotron Specialties, Radiation Counter Laboratories and Amperex. Of these the last has the most promising design, but our order for the type needed here, 100-E, has been unfilled for several months.

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DESIGN AND CONSTRUCTION

100 Areas (Reference Report No. HW-10631)

Design

Procurement requisitions for all equipment required for 100-H Area is approximately 95% complete. Items remaining are as follows:

Process Area

1. Main Control Desk Panel.
2. Miscellaneous and Area Monitoring Panels.
3. Gas Dryer and Circulation Panel and Control Equipment.
4. Make-up Gas Panel and Control Equipment.
5. Gas Analysis Panel (The major portion of equipment required for this will be taken from 100-B and 100-D Areas. Some additional pieces must be ordered.)

Power and Water Area

1. Auxiliary Panel (L2) Main Pumping Station Control Room.
2. Tank Room Control Panel.
3. Gauge Panels for 183 and 182 Buildings.
4. Miscellaneous flow manometers, orifices and pressure gauges.

Construction

Building 105-DR

1. Fifteen hundred of the two thousand pressure monitor gauges are on hand. These are being received at about the rate of 300 per week.

2. All instruments with the exception of Selsyn Receivers, have been mounted on the Main Control Desk. Brackets and terminal blocks have been installed for termination of wires. Selsyns are now promised for shipment by 7/30/48.

3. Some 47 H.M. ionization chambers made by General Engineering and Consulting Laboratories in Schenectady have been received. These will be sent to the Health Instrument Divisions calibration group for checking.

4. Ten shim stock ionization chambers for use with the water monitor system have been received. Seven of these showed leaks when tested. All will be returned to vendor for repair.

REDOX (Reference Report No. HW-10632)

Demonstration Unit

A Fischer-Porter Rotatronic flow controller was installed on the 1-A Demonstration Unit organi waste system. The accompanying air motor for the centrifugal pump drive was changed to an electric motor to improve the reproducibility of speed control. Several test runs have been attempted since changing the pump drive, but on each occasion the rotameter float has become jammed by a collection of dirt from the piping system. Further checking has been abandoned until an overall system clean-up is made.

REDOX (Cont.)

Scale-Up Unit

Full time shift coverage by the Instrument group was started in the 321 Building on 7/6/48. This work is scheduled to continue throughout the testing program now in progress. The men are working a 48-hour week on a 7-7-10 schedule.

Exterior work on the Tank Farm instrumentation has been completed and the work order closed out.

Work orders have been received to cover instrument applications and adjustments connected with the installation of a Mixer-Settler Unit in the 321 Building.

Redox-Kellex

Preliminary drawings have been submitted in planning the instrument requirements and panel locations of a typical cell for the 201-R, Redox Test Plant. As it is not permissible to have continuous pipe-runs from the operating gallery to the cells, all controllers, recorders, etc., mounted on the operating panel, will be supplied from transmitters which are located on a sub-panel in the pipe gallery. It was suggested that the ventilation wall, between the operating and pipe galleries, be supplied with windows to permit observation of the equipment located on the sub-panel.

Project 234-5

To meet the operating requirements of the Poppy Survey Instruments a separate instrument supply circuit for the 234-5 Building will be provided.

[illegible] vacuum gages arrived at the White Bluffs Instrument Warehouse and [illegible] inspected per [illegible] routine. Several undesirable features of inferior material and workmanship were revealed. A letter has been written to the Procurement Division citing these complaints and asking them to review the situation with the vendor.

A meeting was held in Detroit on 7/15/48 to review the building ventilation requirements with representatives of several control equipment vendors. Bids are to include designing of system, furnishing of the control equipment and field adjustment after installation.

80

TRANSPORTATION DIVISION

MONTHLY REPORT

JULY 1948

GENERAL

Absenteeism in the Transportation Division for the month of July was 1.05%. This was a decrease of 2.20% over the month of June.

Following is the July Work Order Summary for the Mechanical and Labor Sections.

Groups	Work on hand June 27		Work Completed July 25		Normal Work on hand July 25	
	No.of Orders	Estimated Man Days	No.of Orders	Estimated Man Days	No.of Orders	Estimated Man Days
All Area Labor and Repair	40	545.3	30	2,365.8	38	403.3
700-1100 and Railroad Labor	62	683.8	68	3,336.9	63	796.6
Riverland Railroad Repair	17	130.9	6	222.0	21	174.9
700-1100 Repair	80	339.9	75	2,364.5	71	391.4
Total Labor and Repair	199	1,699.9	179	8,289.2	193	1,766.2

ORGANIZATION AND PERSONNEL

E. E. Gillum was placed in charge of Minor Construction activities and Project Work for the Transportation Division July 1, 1948.

Aaron T. Rosander, Clerk, was upgraded to Truck Foreman effective July 1 and was assigned the Equipment Control Section.

Isaac Moore, Shift Foreman, resigned July 30, 1948 to return to his former position with the Milwaukee Railroad Company.

Force of the Transportation Division decreased by eight and the total force as of July 31 was 738.

Number of employees on payroll		July
Beginning of month		746
End of month		738
Net decrease		8
Terminations	13	
Transferred to other Divisions	3	
Total	16	
New Hires	8	
Net decrease	8	

Force of Morrison-Knudsen, Track Maintenance Subcontractor, was increased by 14 and their total force as of July 31, 1948 was 233.

OPERATIONAL ACTIVITIES

1. Railroad Operations

Railroad operations continued in a routine manner with train movements being effected as scheduled. Commercial tonnage was somewhat above normal as a total of 5,233 cars was handled during July compared with 4,555 in June.

Non-routine work was exceedingly heavy throughout the month as one train crew was engaged in moving aggergate from White Bluffs to 200-West Area while another crew was handling ballast and other material in connection with the Railroad Rehabilitation Program between May Junction and North Richland. Still another work train was used in picking up old rail between May Junction and the 300-Area.

Because of the increase in Construction site switching, it was necessary to assign one train crew to White Bluffs in order to keep cars spotted and the empties pulled and moving in the 100-H Area.

Richland, North Richland, Asphalt Track, Hudson Spur, and vicinity required the services of a full time switcher crew.

Volume of Railroad Operations work necessitated a six day work week for train crews and dispatchers in lieu of additional personnel.

2. Repairs

Alco locomotive 39-3729 was placed in service on July 2 and failed after eight (8) hours of operation. It was necessary to install new pistons and component parts.

The second new Alco locomotive was received in July and is now in the process of being dismantled so that new type pistons can be installed as recommended by the American Locomotive Company before this unit is placed in service. These repairs are being made on a back charge basis.

3. Track Maintenance

Railroad track maintenance continued in a routine manner throughout the Areas by Transportation Division forces and outside the Areas by Subcontractor's forces with the following items of interest.

a. Applied chemical weed treatment to all track in the 100 and 200 Areas.

b. 100-B Area - Relaid one turnout and 1,000 feet of coal track with 100 pound rail. Replaced one set of switch ties and 25% of cross ties on coal track lead.

c. 200-West - Completed 25% of tie renewals in main track between 211-T and coal track turnouts.

d. The Railroad Track Maintenance Subcontractor was engaged in the following work in addition to that of a more routine nature.

1) Rail relay was completed from May Junction to Richland (15 miles) and the May Junction and Prosser Road Line Revision (2 miles).

2) Placing of ballast on Prosser Road Revision was completed and the May Junction Revision is approximately 75% complete.

3) Tie renewals and surfacing were completed from May Junction to Mile Post B-27 (6 miles).

4) Grading on line revision east of 100-B Area is 70% complete. Footings for encasement of 42" export line have been poured.

AUTOMOTIVE OPERATIONS AND REPAIRS

1. Automotive Operations

a. Effective July 6 the procedure for withdrawing vehicles from the 300-Area Motor Pool was changed as outlined in H.W.Instructions Letter No. 92 so that the control of Pool Units will be handled by the 300-Area Transportation Division Representative. It is contemplated that this procedure will effect better utilization of equipment.

b. Area and Village Local bus systems operated during the month as scheduled.

Effective July 15, Village bus routes were changed, extended and expanded as follows: The old Hunt-Van Giesen route was eliminated and two new routes were added. Hunt-Newcomer route [illegible] to serve the Hunt Point District and the [illegible] construction [illegible]. Wilson route was established to serve the north central [illegible] Richland and can be easily extended if the need arises. [illegible] East and West Bentham routes were extended to run on Adams Street and these route names were changed to East and West Adams. West Adams travel direction was reversed to accommodate shoppers at the food market located at Goethals Drive and Comstock Street.

Effective July 1 bus service was established between the Richland Bus Terminal and White Bluffs. This service is for #2 Shift employees to and from work and is in effect five days a week Monday thru Friday.

Effective July 1, shuttle service was established for #2 Shift employees from the 200-West Area Badge House to the 200-West Minor Construction Gate House.

Personnel increases necessitated the assignment of one additional bus to both the 100-B and 200-West Areas.

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c. The extent of automotive equipment usage is indicated by the monthly total mileage of 1,306,704 for all types of vehicles.

d. The extent of Area bus traffic is indicated by the monthly total passenger count of 119,465 and the extent of Village Local bus traffic is indicated by the monthly total passenger count of 64,361.

e. Off-the-Plant special automobile trips (company business and official visitors) totaled 261.

f. Miscellaneous automotive operations services including (a) Motor Pools (b) Inter-Area Shuttle Service (c) Inter-Area Freight, Mail and Express Services (d) Towing and Wrecker Service were rendered during the month in a routine manner.

2. Repairs

The Repairs Section received 192,672 gallons of gasoline, 61,434 gallons of Diesel fuel and 8,064 gallons of kerosene during the month for Project use.

LABOR ACTIVITIES

1. Roads and Streets

Construction of parking lot at Campbell's Food Store required 400 cubic yards of ballast, 170 cubic yards of 3/4" minus rock and 90 tons of pre-mix material.

Parking lot between Swift Boulevard and the 700-Area required 263 tons of pre-mix material and 170 cubic yards of 3/4" minus rock.

Installation of blacktop around the Combined Shops in 700-Area required [illegible] tons of pre-mix material, and [illegible] cubic yards of 3/4" minus rock.

2. Areas

Work in the Areas continued on a routine basis with the following items of interest.

a. 100-B

Excavation has been completed and 300 cubic yards of earth were backfilled on the Process Sewer Line to 107 at 105.

b. 100-F

Project C-238 (Effluent Sewer Line 105-F to 107-F) Hauled and backfilled 1,600 cubic yards of earth on 42" effluent line and 105-F valve pit. Finish graded 1100 feet of trench underneath 42" line. Placed 85 cubic yards of concrete.

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c. <u>200-East</u>

Project C-100 (Precipitator Building (AB)) Approximately 100 cubic yards of earth were hand backfilled on outside lines completing this phase of work.

Project C-105 (Precipitator Building (ABC)) Excavation is 80% complete.

Project C-112 (Additional Underground Waste Tank Facilities) Approximately 15,000 feet of 18" trenching was excavated and backfilled for cathodic protection.

Project C-133 (Special Test Wells) Wells 50-30 and 49-79 were completed at depths of 380 and 290 feet respectively. Wells 47.5-60.5, 25-56 and 40-24 were started during the month and completed at depths of 287, 315, and 120 feet respectively. Wells 60-80, 20-20, 25-70 and 36.5-60.5 were started and have present depths of 90, 120, 170 and 60 feet respectively. Footage on all wells drilled to date totals 12,073.

Project C-225 (5-6 Waste Disposal near 361-B Tank and Dry Well) Approximately 4,000 cubic yards of earth were hauled for backfilling on the tile field. Excavation is 95% complete. Wells 361-B-14, 16, 17, 18, 19 and 20 were started and completed during the month. Each well has a completed depth of 150 feet. Well 361-B-15 was started and has a present depth of 115 feet. Footage on all wells drilled to date totals 1,015.

d. <u>200-West</u>

Project C-163 (Additional Process Waste Storage) Approximately 3,000 cubic yards of earth were excavated for the one line encasement trench from 154-[illegible] diversion box to [illegible] stack. Hauled 8,000 cubic yards of backfilling material for seven line encasements and backfilled 9,000 cubic yards on [illegible] lines with bulldozers and graded 1,200 feet of trench for line encasements and placed 583 cubic yards of concrete in diversion boxes, line encasements, etc.

e. <u>300</u>

Hauled and placed 950 cubic yards of backfill material in the 3707-C and 321 Buildings.

Excavated 300 cubic yards of earth for water line from the 3703 Building to the Area fence and 78 cubic yards for sewer line from the 3745 Building to the Area fence.

Approximately 135 cubic yards of concrete were placed in 321, 3706, 3708 Buildings and the 300 West Nitrate Storage Slab.

f. 700-1100
Rebuilding and revamping of the 1100-Area coal docks required 500 man-hours and is now 95% complete.

Approximately 430 man-hours were expended in flood rehabilitation which included the removing of sand bags from the Sewage Disposal Plant and effluent lines.

EQUIPMENT CONTROL

1. A study of Operations' automotive and construction equipment requirements for the period 1948 through 1952 was made for the Atomic Energy Commission.

2. Eighteen units were transferred to the Design and Construction Division on P.I.T.'s making a grand total of 459 vehicles transferred to date.

3. There are 260 units of equipment presently on order as 24 units were requisitioned during the month. Thirteen units were received on orders placed prior to July 1 and 11 units were received on requisitions placed during the month.

TRAFFIC SECTION

1. Effective July 1, 1948, demurrage debits on cars subject to average agreements can be offset by credits at the ratio of one to one, instead of two credits to one debit. This will reduce demurrage charges on outbound shipments because in the past there have seldom been enough credits to offset debits at a ratio of two to one.

2. The Interstate Commerce Commission extended from 7:00 a.m. July 1 to 7:00 a.m. July 20 the expiration date of Service Order No. 815 (Detention Time on Railway Cars Suspended in the Northwest). The order was issued because of flood conditions in the Pacific Northwest.

3. Motor and Rail Carriers have approved our proposal for a rate of 50 cents per cwt. on Sodium Bichromate, Sodium Nitrite, Ammonium Silicofluoride and Ferrous Ammonium Sulphate from Seattle to Hanford which will effect a saving on shipments of these commodities from the East Coast moving by water to Seattle as follows:

Sodium Bichromate and Sodium Nitrite - 9¢ cwt. - $54.00 per car.
Ammonium Silicofluoride and Ferrous Ammonium Sulphate - 23¢ cwt. - $138.00 per car.

4. Effective July 19, 1948, Eastern Rail Lines increased their passenger fares approximately 10 to 14 per cent.

5. The Interstate Commerce Commission, under their Special Docket No. 209787 (Our Claim O/C 57) authorized and directed the Milwaukee,

Burlington and Northern Pacific Railroads to pay to General Electric Company, Richland, on or before August 29, 1948 the sum of $51,874.96 with interest at the rate of 4% per annum as reparation on account of unreasonable freight charges paid on 1,088 cars of coal which moved from Kleenburn, Wyoming to Hanford, Washington during the period from October 1, 1946 to November 20, 1946.

6. As a result of rate reductions secured from the carriers there was a total savings in freight charges for the month of July amounting to $35,787.96.

[redacted]

7)

97

TECHNICAL DIVISIONS

JULY 1948

August 1, 1948

SUMMARY

Pile Technology Division

The detection of rare earth impurities in unpurified graphite has suggested that these elements may contribute an important part of the absorption. It is now believed that completely pure graphite would show a dih in excess of 1.22. It has been demonstrated that the graphitization process produces a large improvement in quality and that the purification process can be operated with the bars stacked two high in the furnace instead of in a single layer as at present.

The dimensional recovery produced in irradiated graphite by thermal annealing is accompanied by a proportionately smaller recovery of the c axis expansion.

Allocation of graphite for the DR Pile has been completed.

Data from the startup of the B Pile indicate a xenon-free graphite coefficient which is lower than expected. An additional coefficient test at the D Pile has confirmed that there has been no increase in the graphite coefficient as a result of the addition of carbon dioxide. This result is anomalous because an increase in reactivity was observed upon addition of the carbon dioxide.

The high activity of water from the 3 [illegible] has been traced to an

The behavior of light-extruded, lead-dipped slugs in the piles is similar to that of alpha-rolled, lead-dipped slugs, with indications that an even higher degree of preferred crystal orientation is present in the extruded metal.

Segmented discharge of pile tubes as now conceived involves periodic discharge of 75% of the tube, leaving the remaining 25% as a "heel" for re-irradiation. This procedure has all the advantages obtained by two-step irradiation of all slugs, decreases the frequency with which the tubes must be discharged, and simplifies the inauguration of segmented discharge. In preparation for segmented discharge the upstream dummy slugs are currently being omitted from tubes as they are re-loaded.

Evidence accumulates that corrosion of Van Stone flanges is relatively independent of the galvanic action between aluminum and stainless steel. Aluminum inserts between the flange and the nozzle did not inhibit pitting of the flange and were themselves pitted on the side adjacent to the aluminum flange rather than on the side adjacent to the stainless steel nozzle.

Technical Divisions

Separations Technology Division

Calibration of the 16" Redox Scale-Up column and its auxiliaries has been completed and preliminary operation of the unit started. Pilot runs in the small columns with Raschig ring packing have shown that this type of packing eliminates the anomalous mass transfer rates which have been experienced in the past with different types of uranium feed in columns packed with Fenske helices. A comparison of the 2" and 3" columns packed with Raschig rings also has shown no significant scale effects to be present over this limited range. These results indicate that the basic operating characteristics of the 16" column can be established in an abbreviated program such as has been planned. Good progress has been made in carrying out the necessary modifications of the Scale-Up and Demonstration units for installation of both large and small scale mixer-settler equipment as soon as it is received from the vendor. It is expected that this equipment will be delivered during the coming month.

The Research group is carrying out a systematic study of uranium feeds and the anomalous mass transfer rates which have appeared in columns with Fenske packing. The crossover oxidation step is receiving attention, particularly at plutonium concentrations corresponding to full level Hanford feeds, since the behavior at these concentrations is somewhat different from that in low level solutions employed in previous process development work. Studies of ruthenium chemistry continue with emphasis on identification of the ionic species present in process solutions. Other work involves the determination of zirconium distribution ratios under various process conditions and a study of distribution ratios for plutonium (IV) in Redox process streams.

A promising means of controlling active speck contamination in the 200 Areas has been uncovered. Graded sand filters have proved highly effective in removing activity from canyon ventilation air and small scale tests have indicated that decontamination efficiencies of [illegible] can be realized in properly designed units. Design of a full scale sand filter for T Plant has been started and installation will be pushed with all possible speed. Further small scale tests will be carried out in the meantime and extension also is being given to small scale tests with a water scrubber and an electrostatic precipitation unit.

Metallurgy & Control Division

300 Area Plant Assistance personnel continued to supervise the production rolling of uranium rods for Hanford at Ft. Wayne, Ind., and Lockport, N. Y. They also observed a successful trial rolling at Vulcan Crucible Steel, Aliquippa, Pa. on July 23. Bronze dip conditions to assure complete structural transformation of this metal were established for the triple-dip slug canning process. Indications are that the cycle time extension found essential can be relieved when means for more effective slug agitation in the bronze bath are devised. It was found that a simple slug fracture test shows the degree of structural transformation as well as does the more laborious laboratory examination, and equipment to place this fracture test in routine plant use is being assembled.

Two hundred and twenty-nine enriched uranium-aluminum alloy slugs (Special Request 52) were followed through canning and inspection. Using a single-dip Al-Si bonding process, 217 of these slugs proved acceptable for pile loading.

Examination of the 4" lead-dipped, alpha-rolled uranium slug which ruptured in 100-F pile on May 30 was concluded. A pinhole was found in the weld of the

end-cap which had separated from this slug, and this hole communicated with voids in the braze-line between the cap and the can wall. Poor wetting also was visible between the cap and the slug. Process water penetration into direct contact with the uranium evidently had occurred.

Dynamic corrosion tests with various alloys and Redox process solutions were begun, using the special laboratory equipment assembled for this purpose in Building 3706.

Analytical consultation was begun with Prof. H. H. Willard (University of Michigan) on Redox problems, and with Dr. N. H. Nachtrieb (Institute for the Study of Metals, Chicago) on 234-5 Project analyses.

The statistical analysis of blood count data was completed for the Medical Division. This analysis covered differences due to sex, age, seasons of the year, pre-employment location, and subsequent plant area location. Curves were fitted to these data to give the expected blood counts in any normal group of people, and limits computed from these curves can be used to distinguish between normal and abnormal blood analyses.

Effective July 1, responsibility for operation of the 700 Area Classified File was transferred from the Plant Security & Services Division to the Information Group, Metallurgy & Control Division. This move consolidated the 300 and 700 Area technical files and reference activities under a single head.

VISITORS & BUSINESS TRIPS

A conference held here on July 8 and 9 to discuss problems associated with manufacture of graphite for the H Pile and to plan a development program on new types of graphite, was attended by the following visitors:

[illegible] Hamis[illegible] - National Carbon Company
H. G. MacPherson - National Carbon Company
G. H. Fancher - National Carbon Company

Professor W. K. Lewis of the Massachusetts Institute of Technology spent the week of July 12-17 at Hanford consulting on all phases of the Technical program here.

Professor H. H. Willard of the University of Michigan spent July 19-21 with the Analytical Section consulting on Redox analytical problems.

N. H. Nachtrieb, who was at Los Alamos and now is associated with the Institute for the Study of Metals at Chicago, was here July 22-25 in consultation with the Analytical Section on spectrographic methods for the 234-5 project.

Business trips of Technical Divisions personnel during July were as follows:

R. Teats and W. T. Kattner followed the rolling of uranium rods for Hanford at Fort Wayne, Ind., during the period July 6-19. Teats also supervised the Fort Wayne run on July 27-30. The July 26-31 rolling at Lockport, N. Y. was covered by T. S. Jones and R. D. McGreal. On July 23, Jones visited the Vulcan Crucible Steel Company at Aliquippa, Pa., to observe their first attempt to roll uranium billets.

Technical Divisions

R. Ward visited the Battelle Memorial Institute on July 7 and the Argonne National Laboratory on July 8 for discussions of the cooperative programs on uranium metallurgy.

T. Prudich spent July 12 and 13 at Giffels and Vallet, Inc. in Detroit in connection with the design program on the 234-5 Project.

D. W. Pearce spent July 12-15 at Oak Ridge reviewing the metal recovery studies being carried out by the Carbide and Carbon Chemical Corporation and inspecting the "hot" laboratory facilities at Oak Ridge National Laboratories.

Visits have been made to Argonne National Laboratory and to the Standard Oil Development Company at Bayway, N. J. to obtain operational experience with mixer-settler units to be used in Redox processes. J. T. Stringer spent July 12-16 at Chicago observing the work there with the small scale mixer-settler units and J. G. Bradley spent July 19-23 at Bayway working with the full scale unit developed at S.O.D.

J. B. Work visited Schenectady July 20-21 consulting with members of the General Engineering and Consulting Laboratory on their phases of the 234-5 program, and with members of the Knolls Atomic Power Laboratory on stack gas disposal problems. The following week he visited the Los Alamos Scientific Laboratory for discussions of problems associated with DP-West.

B. Weidenbaum spent July 23-24 at the University of California on discussions of plutonium chemistry with members of the Chemistry Department staff and then accompanied J. B. Work to Los Alamos for the discussions there.

A meeting of the Redox Analytical Committee was held at the Knolls Atomic Power Laboratory in Schenectady on July 26. L. L. Burger and D. F. Shepard represented Hanford at this meeting. Burger also spent [illegible] Argonne National Laboratory on the return trip for further discussions of chemical problems in the Redox program.

[illegible] spent July 27-28 at Schenectady visiting various laboratories engaged in nucleonics work and reviewing the progress on construction of the new separations processes research unit for Redox process studies.

R. E. Curtis spent July 29 and 30 at the Schenectady Research Laboratory consulting on analytical problems

ORGANIZATION & PERSONNEL

Effective July 19, D. M. Knott was transferred from the Chemical Research Section to become Administrative Assistant to the Manager, Technical Divisions.

Effective July 29, C. E. Shafer of the Analytical Section and F. B. Quinlan of the Metallurgy Laboratory were assigned to Dr. Knott who is to coordinate their activities as Contact Engineers for the design of new chemistry and metallurgy laboratory facilities planned for the 400 Area.

Effective July 1, responsibility for operation of the 700 Area Classified Files unit was transferred from the Plant Security and Services Division to the Information Group, 300 Technical Division. This transfer, which was made to centralize classified files administration under a single head, involved 24 non-exempt and 2 exempt people.

Technical Divisions

Personnel totals in the Technical Divisions may be summarized as follows:

	June 30	July 31
100 Technical Division		
Pile Physics Section	27	30
Pile Engineering Section	14	16
	41	46
200 Technical Division		
Process Section	19	21
Development Section	94	103
Research Section	21	22
	134	146
300 Technical Division		
300 Area Plant Assistance Group	10	10
Metallurgy Laboratory Section	18	18
Analytical Section	379	404
Statistics Group	9	9
Information Group	19	47
	435	488
Administration	12	13
	622	693

New hires were as follows: Pile Physics added three exempt physicists and one non-exempt clerical employee. Pile Engineering added one exempt engineer (Assignment). The 200 Area Process Section added one exempt chemical engineer. The Redox Development Section added eleven chemical engineers (two exempt and nine non-exempt) and one non-exempt Technical Graduate 3. The Chemical Research Section added one exempt chemist. The Metallurgy Laboratory Section added one non-exempt metallurgist. Analytical Section added sixteen chemists (three exempt and thirteen non-exempt), three non-exempt Technical Graduate 3 employees and sixteen non-exempt laboratory assistants. One weekly computer who had been on leave of absence returned to the Statistics Group and the Information Group added two non-exempt clerical employees. Terminations and miscellaneous transfers (including Files change noted above) accounted for the rest of the changes in personnel. One of the terminations was due to lack of housing.

At month-end there were 8 exempt and 56 non-exempt personnel on the Technical rolls awaiting security clearance for classified work. Most of the latter were laboratorians and analysts in the Analytical Section.

300 AREA PLANT ASSISTANCE

Uranium Melting and Casting

In a discussion held with National Carbon Co. representatives on July 8 at Hanford it was suggested that the oxidation and possibly also the cracking experienced with Type AGR graphite crucibles might be reduced by containing the crucibles in protective cans during burnout. Also, it was noted that use of the more dense Type CS-312 graphite might reduce crucible cracking. Accordingly, protective cans, and Type CS-312 graphite crucibles have been ordered for trial in the melt plant. Thicker walled crucibles (1-11/16" wall) also are to be evaluated. Cast iron molds and molds made from seamless steel tubing (Timken) have been ordered for testing to ascertain whether mold life might be appreciably improved with these types of molds.

Results with pickling cleaned uranium turnings prior to briquetting have indicated that the oxide content on these turnings is reduced from about 2% to a negligible (but still visible) amount. Briquetting and storing in air for 48 hours did not measurably increase the amount of oxide. Briquettes prepared from pickled turnings will be tried in the melt plant in order to determine whether the casting yield can be improved.

Uranium Rolling

About 225 tons of uranium billets were rolled at Lockport and Ft. Wayne during the month under the supervision of 300 Area Plant Assistance personnel.

A test rolling of eight Type B uranium billets (4-1/4" diameter) was made at the [illegible] Crucible Steel Co., [illegible], on July 2. Although only a 12" mill was used (10" and 18" mills are being used at present), no difficulty was encountered in rolling the billets to 1-1/2" nominal diameter rods. A preliminary Metallurgy Laboratory examination of these rods indicated them to be comparable to rods rolled at Lockport and Ft. Wayne.

Uranium Duplexing

Canning of the slugs prepared from duplexed uranium rods under P.T. 314-55-M was completed. This material (1146 slugs) has been sent to the 100-B Area for pile testing.

Uranium Extrusion

P.T. 314-56-M was approved to cover an experimental gamma-phase extrusion run designed to evaluate the effects of extrusion temperature and rapidity of quenching on rod structure and pile behavior.

Slug Canning

An investigation of the effect of slug agitation in the bronze bath (conducted in cooperation with the Metallurgy Laboratory) indicated that the degree of agitation markedly affects the rate at which slugs are heated, and hence the depth of uranium transformation for a given bath time and temperature. With slow agitation

HW-10714-DEL

Technical Divisions

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Two hundred and twenty-nine enriched uranium-aluminum alloy slugs for Special Request No. 52 were received and processed through canning and inspection. This material was canned by a modified Al-Si bonding process, using a single Al-Si bath. Two hundred and nineteen of the canned pieces successfully passed the required 300 Area inspection tests, and 217 pieces were accepted for pile exposure.

A fracture test was developed to facilitate the examination of uranium slugs (and rods) for grain size. This simple test is valuable in determining the depth to which a slug has transformed during heating in the bronze bath, and it has been termed the "TF" test (transformation-fracture). Alpha-rolled slugs that are incompletely transformed contain a shell of coarse grains which are sharply defined from the much finer grains of the as-rolled core. Completely transformed slugs exhibit a [illegible]-grained fracture [illegible] operated hydraulic press (idle at present) is being fitted for the [illegible] for quality control.

METALLURGY LABORATORY

General

Examination of duplexed uranium rods indicated that preferred orientation exists in uranium rods fabricated in the alpha phase whenever sufficient deformation occurred to cause recrystallization. Because simple processing of pure or commercial uranium does not seem to offer any possibility of securing a random orientation in this material when fabricated in the alpha phase, or of securing a fine randomly oriented structure when fabricated in the gamma phase, the approach to the grain size-orientation problem that now seems most expedient is the addition of small amounts of alloying elements to uranium in order to change its grain growth characteristics. During the month a visit was made to the Battelle Memorial Institute to assist in arranging a program of cooperative study to attain these ends. Agreement was reached that the alloying elements would be selected according to interest and availability, and that both Battelle and Hanford would study the behavior of the alloys obtained with 0.01, 0.1 and 1 percent additions of each element.

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Project Requests were initiated for (1) mock-up facilities for hot-work in the 200-N Area and (2) temporary 300 Area melting and fabrication facilities, both as urgently required for the effective study of uranium metallurgy.

Alpha Rolled Uranium

Preliminary work indicated that a short time anneal following the machining operation alleviated the formation of columnar grains around the periphery of alpha rolled uranium slugs during triple-dip canning operation. However, further work carried out on slugs annealed after machining gave inconsistent results. These attempts were aimed primarily at evaluating the effect of low temperature anneals, and rates of rise to annealing temperatures.

Routine examination of plant production slug samples for structural transformation after triple-dip canning was continued.

Examination of Irradiated Uranium

Examination of the slug that ruptured in the 100-F pile on May 30 was concluded. Photographs of the slug and of the welded end-cap were taken using several types of optical systems. The cause of the failure of the slug presumably was a small hole in the cap weld, which allowed penetration of water through the visibly faulty braze line and into direct contact with the uranium metal. Incomplete bonding of the end-cap to the uranium also was obvious from visual examination.

Crystallography (X-Ray)

[illegible] Research Division.

The new spectrometer arrived, and was assembled, adjusted, and calibrated.

Tests for the degree of randomness of orientation about the longitudinal axis were made by testing for significant differences in reflection intensity on different radii on a number of wafers cut from a four-inch slug of alpha rolled unannealed metal having a grain size of about 700 grains/mm. A new sample holder was designed and built to allow accurate positioning of the sample in order to obtain reproducible results. With this set-up, no significant differences in reflection intensity for the (002), (021), and (110) lines for the different directions was noted. It was shown that this particular slug was randomly oriented around the direction of rolling; i.e., the slug may be rotated through any angle around the longitudinal axis, and, although different areas coming under observation will show different intensities, these differences are not repetitive in any way that would indicate any particular orientation around that axis.

An integrating sample holder has been designed and prints were completed. Using the experience gained on a limited number of tests, a change of design is contemplated in order to hold the sample more rigidly in the focus plane of the spectrometer.

Dilatometric Studies

Tests were made on an electrical-mechanical system connected to the dilatometer for the purpose of continuously recording expansion data versus temperature. The results of these tests on aluminum and copper indicate this system will be sufficiently accurate for all immediately planned experiments.

Redox Corrosion Tests

Redox dynamic corrosion tests were begun with T-309 SCb, T-347, T-316 ELC, and T-318 stainless steels in 1AX, 1AF, and 1AS($Al(NO_3)_3$)flowsheet process solutions. A ninety-six hour exposure of the parent metal, welded, and welded-heat-treated samples showed no significant weight loss. Redox program decisions have resulted in the discontinuation of all NH_4NO_3 flowsheet tests. Also, all hydrazine reducing solutions are to be replaced by sulfamic acid solutions; the latter are not yet available.

Welding rods for 18-8 and 25-12 alloy steels were obtained from Eutetic Welding Alloys, Inc. and were tested by preparing welded samples of T-304, T-309, and T-347 with both types of rod and exposing these samples to a boiling solution of 15% HNO_3-2% HF for 45 hours. The T-309 and T-304 samples showed corrosion due to carbide precipitation; the T-347 samples were unaffected.

Thermal Analysis of Al-Si

The accuracy of the Brown Electronic and the L & N Micromax instruments for the determination of silicon in the Al-Si baths of the slug canning line was checked in the laboratory. According to the results obtained, the Brown Electronic is the best instrument for this purpose.

Corrosion of Test Pipe in 100 Area Process Water

Two sections of pipe were removed by the Pile Engineering Section after a 7-months test using 100 Area process water. These sections, examined for degree of corrosion and type of material used, were two elbows used in conjunction with a stainless steel line; one had been exposed to water at 50°C, the other to water at 90°C. An examination of the microstructures revealed that the elbows were partially [illegible] from which had been galvanized. Corrosion of the [illegible] elbow from the 90°C line. However, was badly discolored with rust and contained several pits of different depths.

ANALYTICAL LABORATORIES [illegible]

General

Good progress was made on contractual arrangements for regular consultation with Dr. N. H. Nachtrieb on 234-5 Project spectrochemical analyses. He visited here July 22-25, under special letter approval of the A.E.C.

Work Volume Statistics

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

	June		July	
	Samples	Determinations	Samples	Determinations
Routine Control - 200	2080	3562	2133	3685
Routine Control - 300	1411	7786	1351	7094
Water Control - 100, 700	10793	21557	13154	24705
Redox Control	2025	7493	1776	6449
Process Reagents	948	1675	956	1788
Essential Materials	128	684	145	671
Special Samples	1588	3307	2336	3938
Totals	18973	46064	21851	48330

200 Area Process Control

Routine measurements of the geometry of the methane proportional alpha counting instruments (accepted value 50.50%) in the 200 Area Control Laboratories were as follows:

Laboratory	Ave. Geometry (%)	No. Tests
B Plant (222-B)	50.52	130
T Plant (222-T)	50.51	90
Isolation Bldg. (231)	50.50	70

The precision of the analytical results on the canyon starting solution (8-1-MR), the Isolation Bldg. starting solution (P-1), and the final product solution (AT), may be summarized as follows:

	June		July	
Sample	Precision (±%)	No. Out of Control	Precision (±%)	No. Out of Control
8-1-MR	1.46	14	1.44	*
P-1	1.79	3	1.85	*
AT	1.34	8	1.72**	*

* A change in the method of computing statistics on this tabulation places the number out of control on a cumulative basis (dating from Jan. 1), hence the number out of control in July is not indicated. A separate report is to be issued monthly to all interested parties, detailing the situation with respect to the precision of all three of these critical analyses.

** The poor AT precision in July resulted from change of two operators on this shift analyzing two different samples, instead of one chemist analyzing a single sample. This change was made in conjunction with the statistical study of material balance control now in progress.

The standard iron solution used in the Isolation Bldg. Laboratory to check the chemical titration of plutonium was analyzed a total of 127 times during the month. There were 59, 46, and 22 results inside ± 1%, ± 2% and outside ± 2% of the assay value, respectively. The average precision for duplicate titrations was ± 2.33% as compared to ± 2.39% for June. A summary of the results follows:

Assay Value	Group Ave.	% Diff	No. Determinations	Precision (±%) Single	Duplicate
12.68	12.72	+ 0.2	24	4.32	3.04
14.84	14.77	- 0.5	24	2.57	1.82
11.51	11.60	+ 0.8	26	3.44	2.43
10.76	10.91	+ 1.4	30	4.03	2.85
16.48	16.28	- 1.2	23	2.16	1.53

The synthetic 8-1-MR was analyzed 19 times in the B & T Plant Control Laboratory (222-B). The standard precipitation was used with the percent recovery based on 2.077×10^6 c/m/ml. The results were:

Month	Ave. Results ($\times 10^6$)	No. Assays	% Recovery
June	2.026	7	97.5
July	2.035	19	98.0

300 Area and Essential Material Control

The spectrochemical laboratory began operations on a two-shift schedule on July 26, to provide control for P Division operations in the 300 Area.

Graphite Analysis

Two irradiated graphite samples were received for determination of rare earth elements. The samples were wet ashed with perchloric acid in the presence of a vanadium catalyst. Radiochemical techniques were employed to separate the rare earth fractions from the residue. Evidence of at least two beta activities, one of about 1.0 MEV and the other of about 2.2 MEV, was obtained and a 0.2 MEV gamma-ray was observed. Decay data indicated at least two components; one with a half-life of approximately nine hours, and a second with a half-life between two and five days. Two additional samples were analyzed and the original results were verified except that the 0.2 MEV gamma-ray was not detected. In this second series, a 1.0 MEV gamma-ray and a Kx-ray characteristic of the rare earths was observed. Further work on this problem is in progress.

Redox Process Control

At month end, 164 people were assigned to the Redox Control Laboratories, as follows: 67 in Bldg. 3706, 57 in Bldg. 222-T (200-W Area), and 40 in training for this work in the 100 Area laboratories.

Analytical Development - Redox

The oxine procedure for the determination of aluminum nitrate was found to be satisfactory when the ratio of uranium nitrate to aluminum nitrate was three or less, but erratic results were obtained when this ratio was exceeded. The precision of the method was improved by adding a known amount of aluminum to those samples having a ratio greater than this limit. In this way, the co-precipitation of uranium was minimized. This basic procedure is not satisfactory in the presence of iron and chromium, and other methods are being investigated.

A study of the fluorimetric method for the determination of uranium indicated that the maximum deviation of individual results from the mean was 16% in the range of 0.06 to 1.2 micrograms of metal. The calibration of the instrument was constant throughout these experiments. Investigation indicates tha a polarographic method for the determination of uranium will be feasible. Preliminary results imply that a lower limit of 0.1 g/l can be reached. The effects of various interferences are now being determined. Laboratory work connected with the calibration of the X-ray photometer for the determination of uranium has been completed. The data have been submitted to the Statistics Group for analysis.

Quantitative measurements were made of the beta and gamma radiation emanating from uranyl nitrate hexahydrate.

Previously developed methods for the determination of mesityl oxide, organic acids and oxidizing power in hexone were tested and found to be adequate.

Analytical Development - Miscellaneous

Work on the determination of the alkali metals by means of the flame photometer is in progress. To date, the lower limit for the detection of sodium in water appears to be 0.1 ppm, and for calcium 1.0 ppm.

Special Hazard Control

A test of the exhaust characteristics of the Hanford stainless steel hood indicates that a minimum face air velocity of 125-150 ft/min. must be maintained for safe operation.

Efforts to decrease the number of instances of personnel contamination occurring in 222-B and 222-T Laboratories, due to faulty operation of the air stirrers used for sample dilution, include: (a) reduction of the air pressure used to about 8 psi, (b) investigation of electric type stirrers, and (c) compulsory use of face shields.

STATISTICAL STUDIES

Blood Count Data

The statistical analysis of blood count data submitted by the Medical Division has been completed. The [illegible] blood counts, hemoglobin, neutrophils, and lymphocytes from all pre-employment examinations during 1944 and 1945 were included, together with corresponding subsequent periodic blood analyses. The data were analyzed to study differences due to sex, seasons of the year, age, previous pre-employment location, and subsequent plant area location. Pearson Type III curves were fitted to the data to give the expected distribution of blood counts in any normal group of people. Limits computed from these fitted curves can be used to distinguish between normal and abnormal blood analyses.

During this analysis of blood count data, an improved technique for the statistical analysis of non-orthogonal data was developed. A paper was submitted to the Institute of Mathematical Statistics at the Berkeley meeting in June relative to this improved statistical metho... The new technique is now being used in other Hanford problems.

Chemical Research Data

In addition to the viscosity computations previously reported, assistance is now being given the Chemical Research Division in the analysis of the physical data obtained from stock solutions having varying UNH, HNO_3, and $Al(NO_3)_3 \cdot 9H_2O$ content. The relationship between density and viscosity is also being studied.

This work is to be extended to the equilibrated aqueous and hexone solutions obtained from the stock solutions by repeated contacts with hexone. From other data submitted by the Chemical Research Division, it has been found that the logarithm of the mole-fraction of H_2O soluble in hexone increases linearly with the temperature. The best fitting linear relationship was determined.

Health Instrument Data

At the request of the Physics Group of the H.I. Development Division, a report of an investigation of the need for more extensive control of the hand and foot counters used at the Hanford Works was reviewed. Many of the control methods used were based on the studies of radio assay precision and accuracy control developed for use in the Analytical Section of the Technical Divisions. A method for determining the minimum counting time necessary to detect any given amount of contamination with a predetermined background was discussed.

New Problems

A number of new requests have been made of the Statistics Group. These include: (1) evaluation of data from the new proportional beta counter; (2) determination of a new calibration curve for the G.E. X-ray photometer; (3) analysis of X-ray diffraction data; (4) analysis of routine Van Stone inspection data from 100-B Area; (5) study of machining yield and inspection rejects in P.T. 313-55-M, and a pile loading plan for slugs fabricated in this test; (6) determination of analytical errors associated with 200 Area waste solutions; and (7) new studies for the Chemical Research Division.

LIBRARY AND FILES

Plant Library

Work on the acquisition, cataloging and circulation of books proceeded routinely. Two outstanding additions to the Library's book collection during the period were a long run of "British Chemical Abstracts" and another of the famous German journal "Berichte der Deutschen Chemischen Gesellschaft." Full library cataloging, including the preparation of complete "holdings" cards for all the bound periodicals in the Technical Library, was finally completed after some months of work and the index cards incorporated into the Library catalog.

Implementing a policy regarding MDDC's outlined in the April report, all copies of these reports in the Library files are being stapled in manila folders and supplied with pockets, charge cards, and date slips as is standard in library usage. This task is about half completed. In addition, a convenient reading file of MDDC reports is being developed in the Library by incorporating non-circulating reference copies of these reports in spring-backed binders for easy shelving with the Library books.

Abstracting and indexing of the Hanford technical reports is proceeding routinely, as is their reproduction by the Office Services Unit. In response to request,

arrangements have been completed to supply a set of these index cards as they are prepared to the local Atomic Energy Commission office.

Two issues of the INFORMATION BULLETIN were published during the month in order to get the publication on a current basis. These issues reflected one major change, in that only books which had been completely cataloged and were available for circulation were listed. It was found that the earlier practice of listing the books as received delayed the cataloging process since many were requested before the cataloging had been completed.

Library statistics were as follows:

	June	July
Number of books on order received	237	254
Number of books fully cataloged	317	300
Number of bound periodicals processed but not fully cataloged	10	408
Pamphlets added to pamphlet file	354	122
Miscellaneous material received, processed, and routed (includes maps, photostats, patents, etc.)	44	31
Books and periodicals circulated	[illegible]	[illegible]
Reference services rendered	[illegible]	

Present book collection is as follows:

	Main Library	W-10 Branch	Total
Number of books	2779	1023	3802
Number of bound periodicals	2073	89	2162

Classified Files

Effective July 1, responsibility for the operation of the 700 Area Classified Files Unit was transferred from the Plant Security and Services Division to the Information Group, 300 Technical Division. This consolidation places the closely related 300 Area and 700 Area Classified Files under centralized supervision, and will implement the strengthening of the 300 Area Classified File as a Technical Reference Center.

Key staff personnel from the 300 and 700 Area Classified Files attended classes for two weeks on approved file procedures sponsored at Hanford Works by the Records Management Branch of the Atomic Energy Commission in Washington, D.C.

The general knowledge gained from these classes should prove applicable to specific Files problems.

Work on the receipt and issuance of documents proceeded routinely in both files, and the work statistics were as follows:

	June (300 File Only)	July 300	July 700	July Total
Documents routed	3140	3036	5537	8573
Documents issued	1187	1591	2554	4145
Reference Services rendered	3427	4200	3190	7390

Office Services statistics were as follows:

Ditto masters run	752	711
Mimeograph stencils run	189	345
Ditto master copies prepared	36,240	27,474
Mimeographed copies prepared	12,448	14,089

PILE PHYSICS

Graphite Quality

An experimental purification heat, in which two layers of bars were processed instead of the usual single layer, was of high quality throughout according to Test Pile results. If the quality of further heats processed in this way remains consistently high a considerable increase in production rate can be achieved.

Radiochemical analyses of graphite samples after brief pile exposures indicate the presence of rare earth impurities in unpurified graphite. Purified samples showed less rare earth activity by a factor of 600. Individual elements have not been completely identified but, since several of the rare earths have large neutron cross sections, their removal may produce an important part of the quality improvement obtained from purification. Chemical analysis of a very high quality bar, dih 1.07, indicated that it still contained 0.14 ppm of boron, 6 ppm of vanadium and 50 ppm of ash. Removal of the boron would raise the dih to 1.22. This indicates that pure graphite would have a dih value in excess of this number.

Comparative functional tests on gas baked and graphitized bars prepared from the same KC raw materials indicate that graphitization increases the dih values from -15.0 to the normal values of 0.10 obtained for unpurified bars. The particle size of the coke did not affect the purity gains achieved by graphitization.

The quality of regular production purified graphite continues high. The quality of unpurified KS material dropped during the month. The shortage of White Zone material for the DR Pile was alleviated by the discovery that eight hundred bars of surplus graphite from 1944 production were of quality suitable for this purpose.

Graphite Monitoring - Production Test 105-1-P

Measurements on the annealing of small samples of exposed graphite indicate that the physical length recovery is greater than the c-axis recovery as indicated by X-ray data. For example, samples exposed 664 MD/CT recovered 60% of their length expansion during a five hour anneal at 500°C. but only 48% of their c-axis expansion. For an exposure of 1112 MD/CT the length recovery dropped to 48% while the c-axis recovery was 29%. Thermal conductivity recovery was 45% for the 664 MD/CT samples but had dropped to 10% for the 1112 MD/CT exposure. Electrical conductivity recovery was 20% at all exposures.

Annealing for two hours at 500°C. produced nearly the same c-axis recovery as the five hour anneal. At 100°C., annealing times as long as 121 hours produced only small and erratic recoveries.

Poison Column Strength - Production Test 105-207-P

At the startup of B Pile the strength of a pair of temporary poison columns was determined by measuring the period of the pile following their discharge. The computed value was in reasonable agreement with the observed value. It was also determined that there is no important discrepancy in the currently accepted values for the relative poisoning powers of lead-cadmium, lithium fluoride, and bismuth columns.

Xenon-Free Power Coefficients - Production Test 105-206-P

Preliminary analysis of the data obtained during the startup of B Pile indicates that the graphite coefficient, when no xenon is present, is lower than would have been expected from previous measurements of this type. Further analysis is in progress. However, the [illegible] during the test may introduce considerable uncertainty in the results.

Power Coefficient Test - Production Test 105-188-P [illegible]

An additional test at the D Pile has confirmed the previously reported conclusion that there has been no increase in the graphite coefficient of the D Pile beyond the value measured just before the first addition of carbon dioxide to the pile atmosphere. This result is puzzling since the graphite temperatures increased and a reactivity gain was observed when the carbon dioxide was added.

A value of 0.33 ih/MW for the over-all coefficient of the B Pile has been determined from normal operating data. The last measured value of this coefficient prior to the shutdown in March 194[illegible] was 0.38 ih/MW. The two values are in agreement within the precision of the measurements.

General

Radioactive decay measurements have established that the high activity of water from the B Pile is due to Mn^{56}. Abnormal quantities of manganese dioxide have been found in the water pipes and storage tanks. This may have accumulated when reduced flow rates were maintained during the long shutdown.

Samples of high purity aluminum, exposed briefly in a pile were found to have only 5% as much activity of 2.6 hour half-life as 2S aluminum. The 14.8 hour activity was reduced to 25% of that of 2S. In many cases the activity of samples

exposed in the E and B Test Holes would be materially reduced by using this high purity aluminum for capsules.

Tests in the Test Pile indicated that aluminum cans colored by an electrolytic-aniline dye process had no larger neutron absorption cross section than uncolored cans.

Reactivity

At month end the reactivity status of the three operating piles was as follows:

	B Pile	D Pile	F Pile
In rods	32 inhours	65 inhours	70 inhours
In xenon	526	503	519
In over-all coefficient	-105	-135	-127
Total cold, clean reactivity	738	845	782

The D Pile gained 33 inhours and the F Pile 16 inhours during the month. The F gains and one-half of the D gains were due to the loading of Special Request 52, a U^{235} - aluminum alloy.

Status of Special Irradiations

The status of the Special Request program on July 31 is given below. Those items which were active during the month are marked with an asterisk. Items listed as completed last month will receive no further mention. The number under P.T. indicates the Production Test, series 105-P. The letter suffix after a tube denotes the pile. Under Quantity the number of pieces, if given, will indicate that the material has been received. Under "Tube and Pile" the initials BTHD, BTHF, DTHF mean the piece is charged into the "B" test hole at the D or F Pile or into the "D" test hole at the F Pile. The suffix T will denote a tentative schedule which may be changed. The abbreviations ORNL and ANL after the request number refer to Oak Ridge National Laboratories and Argonne National Laboratories respectively; KAPL refers to the Knolls Atomic Power Laboratory, UCRL refers to the Radiation Laboratories at the University of California.

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube& Pile	Dis-charged	Shipped	P.T.	ih ab-sorbed
3-3(ORNL)	Thorium	20 slugs	120 days	12/2/47	2082F	5/12/48		49F	
		20 slugs	120 days	12/2/47	1579F	5/12/48			
		18 slugs	120 days	12/8/47	3274D	5/4/48			
		11 slugs	120 days	1/8/48	2066D	6/6/48			
		11 slugs	120 days	1/8/48	2666D	6/6/48			
		27 slugs	120 days	1/8/48	2682D	6/6/48			
		16 slugs	120 days	1/8/48	3169D	6/6/48			
		13 slugs	120 days	3/2/48	1579D	6/29/48			

Technical Divisions

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube& Pile	Dis-charged	Shipped	P.T.	ih ab-sorbed
*12-B(UCRL)	Pu^{239}	1 slug	1 year	5/25/48	1769D	--	--	200	5**
		**Tube 1769D also contains 1 pc. SR-64, 4 pcs. SR-63, UCRL-100-105, 1 pc. SR ANL-111, and 2 cobalt slugs.							
13-5(ORNL)	Be_3N_2	30 slugs	6 mo.	11/4/47	2374D	5/12/48	--	70D	
		30 slugs	6 mo.	11/4/47	1569F	5/12/48	--		
		19 slugs	6 mo.	2/2/48	1569D	8/6/48T	--		12
		19 slugs	6 mo.	1/18/48	2374D	6/29/48	--		
		53 slugs	6 mo.	5/12/48	2374F	--	--		21
		53 slugs	6 mo.	5/12/48	1569F	--	--		21
		38 slugs	6 mo.	6/6/48	3169D	--	--		17
15-16(ANL)	LiF	11 slugs	3-4 wks.	4/11/48	3179F	5/12/48	--	55F	
		11 slugs	3-4 wks.	4/11/48	3169F	5/12/48	--		
		11 slugs	3-4 wks.	4/11/48	2682F	5/12/48			
		18 slugs	3-4 wks.	4/11/48	3179D	5/10/48			
		15 slugs	3-4 wks.	5/4/48	3274D	6/6/48			
		11 slugs	3-4 wks.	5/12/48	3179F	6/6/48			
		11 slugs	3-4 wks.	5/12/48	3169F	6/6/48			
		17 slugs	3-4 wks.	5/12/48	1579F	6/6/48			
		15 slugs	3-4 wks.	5/10/48	3179D	6/6/48			
*		11 slugs	3-4 wks.	6/6/48	3179F	7/6/48			
*		11 slugs	3-4 wks.	6/6/48	3169F	7/6/48			
*		17 slugs	3-4 wks.	6/6/48	1579F	7/6/48			
15-17(ANL)	LiF	11 slugs	3-4 wks.	6/6/48	2066D	6/29/48		55F	
		11 slugs	3-4 wks.	6/6/48	2666D	[illegible]			
		19 slugs	3-4 wks.	6/6/48	2682D	[illegible]			
		19 slugs	3-4 wks.	6/6/48	3179D	[illegible]			
		11 slugs	3-4 wks.	6/6/48	3274D	6/29/48			
		30 slugs	3-4 wks.	7/1/48	2066D	8/4/48-T			30
		30 slugs	3-4 wks.	7/1/48	2682B	8/4/48-T			30
		39 slugs	3-4 wks.	7/1/48	3179B	8/4/48-T			37
		39 slugs	3-4 wks.	7/1/48	3169B	8/4/48-T			37
		39 slugs	3-4 wks.	7/1/48	1579B	8/4/48-T			37
*15-18(ANL)	LiF	10 slugs	3-4 wks.	6/29/48	2066D	7/19/48		55F	
*		12 slugs	3-4 wks.	6/29/48	2666D	7/19/48			
*		15 slugs	3-4 wks.	6/29/48	2682D	7/19/48			
*		22 slugs	3-4 wks.	6/29/48	3179D	7/19/48			
*		22 slugs	3-4 wks.	6/29/48	3274D	7/19/48			
*		19 slugs	3-4 wks.	6/29/48	1579D	7/19/48			
*		35 slugs	3-4 wks.	6/29/48	2374D	7/19/48			
*		39 slugs	3-4 wks.	7/1/48	2374B	8/4/48-T			37
*		39 slugs	3-4 wks.	7/1/48	1569B	8/4/48-T			37
*		17 slugs	3-4 wks.	7/6/48	3179F	7/27/48			
*		6 slugs	3-4 wks.	7/6/48	3169F	7/27/48			
*		17 slugs	3-4 wks.	7/6/48	1579F	7/27/48			
*		24 slugs	3-4 wks.	7/19/48	1579D				25
*		10 slugs	3-4 wks.	7/19/48	2066D				15

Technical Divisions

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih ab sorbe
*15-18(ANL)	LiF	12 slugs	3-4 wks.	7/19/48	2666D				16
*		35 slugs	3-4 wks.	7/19/48	2374D				35
*		23 slugs	3-4 wks.	7/19/48	2682D				25
*		22 slugs	3-4 wks.	7/19/48	3179D				24
*		22 slugs	3-4 wks.	7/19/48	3274D				24
*		17 slugs	3-4 wks.	7/27/48	3179F				21
*		6 slugs	3-4 wks.	7/27/48	3169F				11
*		17 slugs	3-4 wks.	7/27/46	1579F				21
*28-3(ORNL)	Iron	1 casing	2 mos.	4/27/48	BTHD	6/29/48	7/6/48	87B	
28-4(ORNL)	Iron	1 casing	2 mos.	6/29/48	BTHD			87B	0
28-5(ORNL)	Iron Enriched	1 casing	Indef.	4/4/48	BTHD			87C	0
28-6(ORNL)	Iron Enriched	1 casing	6 mos.	4/4/48	BTHD			87C	0
29-5-10(ORNL)	P_2O_5	6 casings	60 days					96B	
*40-4(KAPL)	Pu	3 slugs	4 mos.	1/18/48	3177D	5/25/48	7/6/48	148	
40-5(KAPL)	Pu	3 slugs	4 mos.	5/25/48	3177D			148	5
47 (ANL)	BeO	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	1/14/48	127	
			1-30 da.	Has not been rec'd.					
			1-90 da.	12/23/47	2666F	4/4/48	4/14/48		
			1-180 da.	Has not been					
48 (ANL)	BeO	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	1/14/48	128	
			1-30 da.	8/6/48-T	--	--	--		
			1-90 da.	12/23/47	2666F	4/4/48	4/14/48		
			1-180 da.	8/5/48-T	--	--	--		
49(ANL)	Graphite-U Oxide	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	2/11/48	129	
			1-30 da.	Has not been rec'd.					
			1-90 da.	12/23/47	2666F	4/4/48	5/3/48		
			1-180 da.	Has not been rec'd.					
*52(ORNL)	Al-U^{235} Alloy	229 slugs	100 da.	7/27/48	100F	--	--		
				7/30/48	100D	--	--	208	0
*55(ORNL)	Stainless Steel	4 slugs	6 mo.	2/16/48	1774D	7/19/48		130	
					1666D	7/19/48			
*56(ORNL)	Be-Cu Alloy	2 slugs	6 mo.	1/27/48	1368F	7/27/48		136	0
*57(ORNL)	$CaCO_3$	3 casings	6 mo.	1/27/48	BTHF	7/27/48		137	0
*58(ORNL)	Zinc	1 casing	6 mo.	1/27/48	BTHF	7/27/48		138	0
59(ORNL)	Antimony	1 casing	6 mo.	1/27/48	BTHF			139	0

Technical Divisions

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube& Pile	Dis-charged	Shipped	P.T.	ih ab sorbe
60(ORNL)	KCl	7 casings	1-2 wks.	2/16/48	BTHD	3/9/48	4/14/48	140	
			1-1 mo.	2/16/48	BTHD	4/4/48	4/14/48		
			1-3 mo.	3/2/48	BTHD	6/29/48		140	
			1-6 mo.	2/16/48	BTHD				
			3-1 yr.	2/16/48	BTHD				
61(ORNL)	Co_3O_4	1 casing	6 mo.	1/27/48	BTHF			141	0
*62(ORNL)	Al-U^{235} Stainless Be, U, Al	10 slugs	5-1 mo.	7 pcs. 2/16/48	1774D 3179D	4 pcs. 3/15/48	2 pcs. 4/14/48	145	
			5-5 mo.	1 pc. 4/25/48	2382F	3 pcs. 7/19/48	2 pcs. 5/3/48		
*63(ORNL)	Al-U^{235} Alloy	21 slugs	7-3 mo.	4/11/48	1671D	7/15/48		146	
			7-6 mo.	4/25/48	2382F				5
			7-12 mo.(4)	5/25/48	1769D				
64(ORNL)	Cu-Au Alloy	5 slugs	1-15 da.	4/11/48	2382F	4/25/48	5/3/48	142	
			1-30 da.	2/16/48	3179D	3/15/48	5/3/48		
			1-60 da.						
*			1-150 da.	2/16/48	1774D	7/19/48			
			1-300 da.	5/25/48	1769D				
66(ORNL)	U^{234}	2 casings	2-4 mo.	1 casing 3/9/48	BTHD	5/10/48	5/19/48	160	
67-76(ORNL)	Charged 2 samples of 68 and one of each of the other requests on 4/[illegible]8.								
79([illegible])	U[illegible]	Experiment being carried out by J. [illegible] Lambert.							
80(ORNL)	HgO	2 casings	6 mo.					163	
81(ORNL)	Zn	3 casings	1 yr.	4/25/48	DTHF			164	0
82(ORNL)	Ni	1 casing	1 yr.	4/25/48	DTHF			165	0
		1 casing	1 yr.	5/12/48	DTHF				0
83(ORNL)	TiO_2	1 casing	6 mo.	4/25/48	DTHF			166	0
84(ORNL)	AgNO	1 casing	1 y.	4/25/48	DTHF			167	0
85(ORNL)	Se	1 casing	1 yr.					181	0
86(ORNL)	$Tl(NO_3)_3$	1 casing	1 yr.					181	
87(ORNL)	WO_3	1 casing	6 mo.	4/25/48	DTHF			181	0
88(ORNL)	Sn	1 casing	1 yr.	4/25/48	DTHF			181	0
89(ORNL)	Cd	1 casing	6 mo.	4/25/48	DTHF			181	0

Technical Divisions

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube& Pile	Discharged	Shipped	P.T.	ih absorbe
ANL-100	Be	5 casings	6-12 mo.	3/24/48	BTHF			176	0
ANL-101	U^{238}	1 receptacle	4-6 mo.	8/48-T					
ANL-103	Rare earth oxides	1 casing	3 mo.	5/12/48	DTHF			186	
ANL-104	Gd	1 casing	3 mo.	5/12/48	DTHF			187	
*ANL-106	Graphite	2 casings	1 mo.	5/10/48	BTHF	6/29/48	7/6/48	199	
ANL-107	Bi	1 slug	6 mo.	8/48-T					
ANL-110	PuO_2	1 slug	6 mo.	8/48-T					
ANL-111	PuO_2	1 slug	1 yr.	5/25/48	1769D			200	
UCRL-100	Pu	1 slug	1½-5 yrs.	5/25/48	1769D			200	
UCRL-101	Pu	1 slug	1½-5 yrs.	5/25/48	1769D			200	
UCRL-102	Pu	1 slug	1½-5 yrs.	5/25/48	1769D			200	
UCRL-103	Am	1 slug	2 yrs.	5/25/48	1769D			200	
UCRL-104	Pu	1 slug	1-3 yrs.	5/25/48	1769D			200	
UCRL-105	Am	1 slug	2 yrs.	5/25/48	1769D			200	
ORNL-102	Zr	1 slug	6 mo.	8/48-T				204	
HW-100	Cu	1 casing	1 wk.	8/48-T				205	

The following requests have been approved but the samples have not been received:

ANL-105, ANL-108, ANL-109, ANL-112, ANL-113, ANL-114, ORNL-100, ORNL-101, ORNL-103, ORNL-104, ORNL-105, UCRL-106.

PILE ENGINEERING

Corrosion and Blistering of Slugs

Six tubes containing alpha-extruded, lead-dipped slugs were discharged at about 65% of normal exposure. These slugs were free of surface distortion (blistering), but the effects of length decrease, diameter increase, and warp were even more pronounced than for alpha-rolled slugs, suggesting an even higher degree of preferred crystal orientation in the extruded slugs.

Weight measurements on corrosion test slugs retained in the B Pile during the two year shut-down show that the corrosion rate of slugs in a shut-down pile is practically zero (less than 0.005 mils/mo.).

Equipment is being assembled for the experimental annealing at 500°C. of blistered slugs which have cooled for two years. Results of this study will contribute to our knowledge of the mechanism of slug distortion during irradiation.

Corrosion of Van Stone Flanges

Inspection of test Van Stone flanges on the front of the D Pile has shown that no reduction in corrosion occurs when the pressed asbestos gasket is replaced with neoprene. Also, it was found that zinc slugs in contact with the flange offer no detectable protection.

Eleven flanges in contact with nozzles having a 3/16-inch aluminum insert covering the stainless steel next to the flange showed approximately the same average corrosion as the controls. The corrosion, on the average, was less where six of these were installed without gaskets than where the five had been installed with pressed asbestos gaskets. Two inserts showed pitting next to the gasket, indicating that pockets of stagnation are a prime factor in causing corrosion. No pitting was observed at the junction between the aluminum insert and the stainless steel nozzle.

Aluminum solder has been found unsatisfactory for Van Stone flange repair due to its high susceptibility to corrosion.

Graphite Expansion

The concentration of carbon dioxide in the D Pile atmosphere was maintained at 25% during the month. The over-all expansion of the D Pile has continued at the greatly reduced rate observed since January.

One of the two new electric heaters, obtained for pile graphite annealing experiments, was heated without difficulty to 450°C. in a graphite mock-up.

The installation of magnetic strain gauges, for use in monitoring stresses in the top biological shield, was begun at the D Pile.

Segmented Discharge

Segmented discharge as now conceived calls for the periodic discharge of 75% of the slugs in a tube. The slugs in the upstream end of the tube are left as a "heel" for re-irradiation in the downstream end of the tube. This sytem has several advantages over the old system of discharging 50% of the tube, chief of which are the reduced frequency with which the tube must be approached for discharge and the greater ease with which segmented discharge may be initiated. A detailed discussion has been presented in Document HW-31262.

The present piles are being prepared for segmented discharge by using a six-inch stainless steel slug attached to the front end cup in place of the usual front dummy charge during regular discharge of process tubes. This procedure effects immediate savings in consumption of expendable dummy slugs, but it will be many months before all tubes are ready for segmented discharge. Studies are in progress regarding the time and equipment requirements involved in removal of upstream dummy slugs from the front end of tubes.

Beta Experiment

Irradiation of the second beta slug has continued without incident.

Assistance to New Construction

Allocation of graphite for the DR Pile is complete.

The sizes of the graphite zones for the H Pile have been changed in conformity with the expected receipts of purified graphite. In addition, the shape of the zones has been changed to obtain more effective utilization of the high quality graphite. The change to zones approximating an oblate spheroid in place of the simpler rectangular parallelepiped is expected to gain an additional 50 to 100 inhours of reactivity.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Production Test 221-T-13, Reduction of Process Volumes, has progressed satisfactorily through tests at T Plant with first and second cycle process volumes reduced to 70% of those of recent standards. A single run with these volumes reduced to 60% of standard resulted in an increased first cycle by-product loss. The present program will be directed toward reducing the frequency of occurrence of incomplete solution of the first and second cycle product precipitates and the determination of optimum washing conditions in the by-product sections with process volumes adjusted to 70% of the recent standard. Preliminary indications are that reductions of approximately 23% and 26% in the neutralized volume of the first and second cycle wastes respectively will be achieved under these conditions.

Runs are being processed at B Plant with the first and second cycle volumes adjusted to 80% of recent standards. Operations have been normal, as was the case at T Plant for this stage of the test.

Partial charges of lead dipped slugs have been processed. No difficulties were experienced in dissolving or in extraction.

Concentration Buildings

Runs have been processed through the Concentration Building without incident at T Plant under all phases of Production Test 221-T-13 started to date. Waste losses and decontamination have not been adversely affected.

REDOX DEVELOPMENT

Demonstration Apparatus

Studies in the Demonstration IA Columns during the month have been devoted to reproducing in the 2- and 3-inch Columns, the operational and chemical conditions which may possibly be employed for study of the 16-inch Scale-Up IA Column. In conforming to the anticipated Scale-Up flow sheet the following conditions were maintained:

(1) Simple-column operation (extraction section only).
(2) Capacity maintained at 100% of flow sheet.
(3) IAS scrub equivalent to 1.3M $Al(NO_3)_3$.
(4) IAF dichromate omitted.
(5) IAX prepared from water-washed raw Shell Hexone, or
(6) IAX prepared from ICW recycle hexone.

It was the purpose of the studies to compare the behavior of feeds prepared from dissolver metal, UO_3, and uranium recovered from process (ICU) employing 1/4 x 1/4-inch and 1/2 x 17/32-inch stainless steel Raschig ring packing. The pertinent data from a series of 2-inch IA runs are listed below.

DEMONSTRATION UNIT RUNS : TWO - INCH IA COLUMN

Run No.	Duration Hours	Feed Source	U Waste Losses, % of Feed U	H.E.T.S., Ft. (Extrac. Section)
25	38	Canned U	0.05	0.97
26	38	UO_3	0.03	0.97
27	26	Recovered U(1)	0.03	1.07
28	27	Recovered U(2)	0.10	1.02

(1) IAF prepared from ICU processed from Run 25. IAX prepared from ICW processed from Run 25.

(2) IAF prepared from ICU processed from Run 26. IAX prepared from ICW processed from Run 26.

It is apparent from the above that uranium mass transfer is independent of feed source. Based on the above series, it was decided that the cycle of operations characterized by Runs 26 and 28 would be employed during study of the 16-inch Scale-Up IA Column.

One study has been completed in the 3-inch IA Column employing the conical Elgin-type IAX distributor (66 holes, 0.04" i.d.). The conventional NH_4NO_3 flow sheet (55% capacity) was tested using the 3/16-inch Fenske packing. The distributor did not reduce waste losses below the 20-25% obtained prior to the installation of this multi-point distributor. Following this run, 1/4 x 1/4-inch Raschig rings were installed and a two-run series similar to Nos. 25 and 26 above was conducted. The pertinent results are indicated in the following summary.

DEMONSTRATION UNIT RUNS : THREE-INCH IA COLUMN

Run No.	Duration Hours	Feed Source	U Waste Losses % of Feed U	H.E.T.S., Ft. (Extrac. Section)
6(1)	57	Canned U	23.8	4.9
7(2)	38	UO_3	<0.5	1.0-1.2
8(2)	42	Canned U	<0.5	1.0-1.2

(1) Study conducted with Fenske helices at 55% of flow sheet throughputs. Conventional NH_4NO_3 system.

(2) Conditions as described for Run Nos. 25 and 26 above.

It appears from the above series that uranium H.E.T.S. does not increase in going from a 2- to 3-inch column diameter and that uranium transfer is not a function of feed source. To allow a decision as to the packing size to be studied in the 16-inch Scale-Up Column, 1/2-inch Raschig rings are now under test in the 3-inch IA Column.

Recovery of uranium in the 5-inch IC Column proceeded routinely.

Technical Divisions

Revisions or additions to the Demonstration Unit during the month have comprised the following.

1. Installation of two 55 gallon MCH displacement pots for the 3-inch IA feed system.
2. Installation of samplers for organic phase removal above the aqueous-solvent interface during simple-column operation.
3. Completion and final calibration of the 6-foot x 4-inch auxiliary Pyrex head tanks.
4. Experimental installation of a single mercury seal on the IAS 2-inch surge pot.

Six drums of sodium urenate slurry (395# uranium) have been transferred to the "P" Division for subsequent recovery. Processing of waste solutions proceeded in a routine manner. Greater difficulty, however, is being encountered in the precipitation and centrifugation of uranium in wastes containing $Al(NO_3)_3$.

Equipment Development

During the month, the 1-inch, 3-stage UNH Horizontal Extractor was dismantled and the feed and receiver system revised to accommodate the first of two 21-stage S.O.D. 1/100th scale mixer-settler units. The Horizontal Extractor data are being processed for formal presentation. Early studies with the HNO_3-NH_4NO_3-Hexone system have been summarized in Document HW-10481 dated July 1, 1948.

Testing of the G.E. Turbine Pump No. 1 with water was concluded after 1008 hours. Conditions during this period were maintained at 3450 Rpm and 25 psig. During this time, the shut-off pressure decreased from 59.3 to 47.8 psig. and the 25 psig. flow rate decreased from 1.54 to 1.32 Gpm. Bearing leakage leveled off at 110 ml./min. after 860 hours. All potential wearing surfaces indicated severe abrasion and spalling.

The dynamic corrosion testing equipment was placed in operation during the month. Studies with 309 SCb, 316 ELC, 316 Cb, and 347 stainless steels indicated no change in weight or appearance after 96 hours in IAX, IAF, and IAS solutions. Provisions are currently being made to direct the study specifically toward the $Al(NO_3)_3$ flow sheet and eliminate those solutions prepared on the basis of the NH_4NO_3 flow sheet. Static testing of aluminum and SAE 1020 steel in neutralized IAW (ph = 10 - 11) solutions resulted in excessive pitting. Studies are being devised for testing 304 and 347 stainless steels in $Al(NO_3)_3$ wastes only partially neutralized (ph = 2) and completely neutralized (ph = 11).

Flame sprayed polyethylene indicates good mechanical stability in IAX and 60% HNO_3 for thicknesses greater than 1/16-inch. There appears to be some evidence of solution penetration into the coating. This would undoubtedly render the surface difficult to decontaminate. Amercoat 77 has been resistant to hexone for 45 days but attacked by 60% HNO_3.

Scale-Up Studies

Scale-Up construction items are essentially complete and activity is now being devoted to rendering the equipment suitable for study. All tanks and lines have been flushed and all flow devices calibrated with water. Further calibrations with 8M NH_4NO_3 and hexone are now in progress. All equipment

functioned satisfactorily during flushing with the exception of two defective pump bearings. Two agitator ball races required additional machining to eliminate vibration.

During the month steps were taken to modify a floor-level portion of C Cell (Bldg. 321) for incorporation of a 10-stage full-scale S.O.D. mixer-settler unit. Steel work is being erected for future extension of the balcony-level catwalk to provide space for later mixer-settler models. The S.O.D. unit, when installed, will function with present Scale-Up auxiliaries and in parallel with the present 16-inch IA Column.

Process Laboratory

To date, a total of 26 materials have been examined in the laboratory for application as filter aids for IA metal solution clarification. Three of these show promise: (1) Johns Manville Co. Standard Super Cel, (2) Alcoa hydrated alumina, and (3) Filtrol Corporation Super Filtrol FO. These materials when supported on a Type E sintered stainless steel filter increase the photometric clarity from 60% to at least 95% at flow rates and pressure drops compatible with expected plant operating conditions. Semi-works studies with these materials are to be conducted in the experimental filtration test stand.

During the month, equilibrium data for the lower six stages of the IA extraction section have been procured under the chemical conditions to be employed in the forthcoming Scale-Up program, i.e. $Al(NO_3)_3$ salting agent, omission of feed dichromate, and the use of IAX prepared from recycle ICW. Distillation studies with a ICU-IAW composite revealed that excess HNO_3 may be removed overhead to allow subsequent IAFS (combined feed and scrub) make-up. The feasibility of employing Al for HNO_3 neutralization was also established.

Flash points of hexone-saturated IAW streams were in the range of 100-105°C under closed cup conditions. Water entrainment in the hexone phase in the scrub section appears to be greater when $Al(NO_3)_3$ is employed than when NH_4NO_3 is used. Document HW-10137 describing freezing points for the system UNH-HNO_3-NH_4NO_3-H_2O was issued July 7.

REDOX RESEARCH

Hexone Studies

In the June report attention was called to the increase in absorption at 231 mμ on pretreatment of raw hexone. Absorption at this wave length is characteristic of mesityl oxide, a hexone impurity, but presumably of other alpha, beta unsaturated ketones as well. It has been shown that this increase is not due to condensation of hexone to form a mesityl oxide homologue as was formerly suspected since very little increase in adsorption at 231 mμ is observed on pretreatment of distilled hexone or a second pretreatment of previously pretreated hexone. It also appears that reaction of the mesityl oxide present in raw hexone is not involved since no increase in absorption was observed on pretreatment of distilled hexone spiked with mesityl oxide. The increase in absorption occurs during either the acid dichromate treatment or the first caustic wash and the adsorption is not appreciably changed by subsequent steps of the pretreatment procedure. Efforts to identify the reacting impurity and

the reaction product causing the enhanced adsorption are in progress.

In the May report compositions and temperatures of hexone-water azeotropes at pressures ranging from 49 to 752 mm. were presented. From these data the mol fractions of hexone and water and hence their partial pressures have been computed. The Statistics Group has found the data to be accurately expressed by the following linear functions.

(1) $\log_{10} P = 8.7578 - 2120.8/T$
$r = 0.9995$

(2) $\log_{10} P_{H_2O} = 8.7942 - 2205.9/T$
$r = 0.9999$

(3) $\log_{10} P_{Hexone} = 7.9649 - 1991.1/T$
$r = -0.9998$

where P = vapor pressure of the azeotrope (mm Hg)

P_{H_2O} = partial pressure of water

P_{Hexone} = partial pressure of hexone

r = linear correlation coefficient

T = °K

These equations should be accurate within ±1mm. or ±1 % considerably outside of the experimental region.

Experimental data on the solubilities of hexone in water and water in hexone, previously reported in Redox Technical Data Study #6 (HW-9851), were submitted to the Statistics Group for analysis and correlation. Various equations for representation of the experimental data have been tested but none are completely satisfactory. The best representation of the water in hexone data is given by the equation:

$$\log N_{H_2O} = -1.13756 + .005193t$$

where N_{H_2O} is mole fraction of H_2O and t the temperature in degrees Centrigrade.

Solubilities computed from this curve are perhaps slightly more accurate than those taken directly from the experimental curve. The best equation found for the hexone in water data is:

$$\log N_{Hexone} = -2.2618 - 0.01159t + 0.0001295t^2 - 0.0000003024t$$

This equation gives somewhat less accurate value than those taken directly from the experimental curve. The values of either equation in regions beyond the experimental ranges (0-133°, hexone in water; 0-94°, water in hexone) is questionable.

Effect of Feed Solutions on Stage Heights

During the month of July five runs were made in the experimental column. The results show the previously observed differences in stage heights for uranium

transfer when using IAFS prepared from jacketed slugs versus those prepared from unjacketed slugs or crystalline UNH. The absence of dichromate did not affect the high IAW losses observed when using IAF solutions prepared from crystalline UNH. The use of $Al(NO_3)_3$ in lieu of HN_4NO_3 showed no beneficial results when using crystalline UNH. Other variables are being systematically studied.

Crossover Oxidation

The crossover oxidation outlined in the June 1 ANL flowsheet and several alternate crossover methods have been tested at the production plant concentration of plutonium-ca. 0.4 g Pu(III)/l. Plutonium valence states were followed spectrophotometrically.

Using 0.02 M $Na_2Cr_2O_7$ (ANL flowsheet) at room temperature, oxidation of Pu(III) to (IV) occurred immediately but oxidation of (IV) to (VI) proceeded very slowly, with a half-time of ca. 28 hours over the first few hours and thereafter with a half-time of ca. 80 hours. Saturation with hexone catalyzed the reaction less than expected, giving a half-time of ca. 17 hours. Addition of 0.01 M Mn(II) to a hexone-free solution resulted in oxidation of one-third of the plutonium within the first minutes. The remainder was oxidized to the (VI) state with a half-time of nine hours.

In all of the above systems oxidation of (IV) to (VI) was much slower than indicated by previous work at other sites using tracer concentrations of plutonium. This behavior should allow advantageous use of the (IV) state in Column IIA, provided the oxidation of Ce(III) and Ru is also slow. This point has not been checked.

Several other crossover methods, aimed at elimination of the (III) state with a minimum degree of oxidation of Ce and Ru to the more solvent-soluble states, were studied. Heating an acidified IBP solution for four hours at 92°C gave a mixture of about 20% (III) and 80% (IV) and most of the sulfamic acid was hydrolyzed. The method was abandoned. Addition of 0.05 M H_2O_2 to the acidified IBP solution gave 91% (IV) and 9% (VI) after two hours at room temperature. The excess H_2O_2 is destroyed by Fe(III) catalysis and the sulfamic acid did not appear to be appreciably affected. Favorable distribution coefficients for Ce and Ru would be expected under these conditions. However, on repeating the experiment with a hexone-saturated solution, an intense orange color was produced in both the test solution and the plutonium-free blank. A small amount of red solid separated from the blank on 24 hours standing. These hexone reaction products are being investigated. Addition to the IBP solution of a two-fold excess of $(NH_4)_2Ce(NO_3)_6$ over that required to oxidize the Fe(II) oxidized the plutonium rapidly and quantitatively to Pu(VI). Subsequent addition of a slight excess of H_2O_2 to reduce Ce(IV) reduced ca. 30% of the Pu(VI) to Pu(IV).

Physical Properties of Redox Solutions

A final report (HW-10580) has been issued on the freezing points of the system:

$$Al(NO_3)_3 - UNH - HNO_3 - H_2O.$$

Density data for both aqueous and hexone solutions have been analyzed by the

Statistics Group and equations obtained relating density and composition. The data were reduced to a single equation for the entire range of aqueous compositions and to several equations covering narrow ranges of composition corresponding to different streams of the June, 1948, Redox Flowsheet. These equations are as follows:

1. Aqueous. 0-2 M UNH, 0-1 M HNO_3, 0-1.5 M $Al(NO_3)_3$

$$d\ 25/4 = 1.0012 + 0.3177\ M_{UNH} + 0.03096\ M_{HNO_3} + 0.1553\ M_{Al(NO_3)_3}$$

Mean deviation of d = 0.0025

2. Aqueous. 0.5-1.0 M UNH, 0.15-0.30 M HNO_3, 0.5-1.0 M $Al(NO_3)_3$

$$d\ 25/4 = 1.0036 + 0.3194\ M_{UNH} + 0.0328\ M_{HNO_3} + 0.1519\ M_{Al(NO_3)_3}$$

Mean deviation of d = 0.0018

3. Aqueous, hexone saturated. 0-0.1 M UNH, 0.3-1.0 M HNO_3, 0.5-1.0 M $Al(NO_3)_3$

$$d\ 25/4 = 0.9987 + 0.2988\ M_{UNH} + 0.0321\ M_{HNO_3} + 0.1561\ M_{Al(NO_3)_3}$$

Mean deviation of d = 0.0012

4. Hexone, water saturated. 0-1.4 M UNH, 0-1.0 M HNO_3, 0-0.4 g/l $Al(NO_3)_3 \cdot 9I$

$$d\ 25/4 = 0.7999 + 0.3491\ M_{UNH} + 0.04382\ M_{HNO_3}$$

Correlations of data for hexone solubilities (25°) in aqueous HNO_3 - $Al(NO_3)_3$ - UNH solutions show that hexone solubility increases with HNO_3 concentration, decreases with $Al(NO_3)_3$ concentration and is nearly independent of UNH concentration. Experimental determination of the temperature dependence of hexone solubility in such solutions is in progress.

Apparent molar volumes of HNO_3, UNH and $Al(NO_3)_3$ in aqueous and hexone solutions are being computed.

Ruthenium Chemistry

It has been reported from this and other sites that ruthenium is volatilized on distillation from nitric acid solutions. Using a ruthenium chloride solution as starting material and successive portions of concentrated nitric acid this has been re-confirmed. On the other hand, in another experiment, using the same treatment except that the normal distillation apparatus was replaced by an open porcelain crucible and heat was applied to the top of the solution by use of an infrared lamp, no appreciable volatilization occurred. Whether this behavior represents creeping or liquid entrainment in the distillation apparatus rather than true volatility or a difference in chemical properties under the different conditions of heating and evaporation cannot be decided on the basis of the available data.

Adsorption of Ru and Pu tracers from simulated dissolver solutions with and without 0.1 M dichromate present has been studied, using activated charcoal, activated alumina, the cation exchangers Duolite C-3 and Dowex 50 and the anion exchangers Duolite A-2 and Amberlite IR-4B as adsorbers. In general, the data give no

reliable clues as to the ionic species of ruthenium in the solution. None of the adsorbers tested appear to be of any value for decontamination from ruthenium in dissolver solution.

Zirconium Chemistry

Further studies on the adsorption of zirconium from simulated process solutions by glass have shown that 2 M UNH, 0.6 M $SO_4^=$, 4 M NH_4NO_3 or 1 M $Al(NO_3)_3$ have very little effect on percent adsorption at a given pH and zirconium concentration Adsorption from a plant dissolver solution containing H_2SO_4 was tested by diluting to a pH of 1.3 and contacting with three consecutive portions of glass wool. Accumulative decontamination factors for zirconium were 60, 310 and 1550. Over the three contacts the decontamination factor for gross gammas was ca. 8.0. Adsorption of zirconium by 150 mesh pyrex powder in 0.25 M HNO_3 solution was determined as a function of zirconium concentration and found to fit the Langmuir adsorption equation.

The distribution of trace concentrations of zirconium between an aqueous salt solution containing potassium dichromate and distilled hexone was found to increase in favor of the hexone phase as a function of time. There appeared to be little difference in this trend when mesityl oxide was added to this particular hexone. The increased distribution of zirconium into the hexone phase with time seemed to be less pronounced when the hexone was pretreated with a ferrous nitrate solution.

Dependence of Pu(VI) Distribution Ratios on Pu(VI) Concentration

Further investigation of the dependence of Pu(VI) distribution ratios on Pu(VI) concentration observed when using pretreated hexone has shown that the effect is not due to the mesityl oxide present in pretreated hexone.

Variability of Pu(IV) Distribution Ratios

The increase in the distribution ratio of Pu(IV) (aq./hex.) with time of contacting of dichromate-free aqueous-hexone systems is being studied. Using simulated 1A feed plate compositions except for the absence of dichromate E_h^a was observed to rise from an initial value of 3.2 to nine or more in a period of two hours when using vigorous stirring, or in forty-eight hours when using continuous mild shaking. Variation of the mesityl oxide content of the hexone phase from 0.01 to 0.04 percent by volume caused no variation in the trend of the data. Removal of the "oxidizing impurity" present in the hexone by adsorption on alumina was similarly found to have little effect on the variation of the distribution ratio. However, addition of $K_2Cr_2O_7$ to the extent of 10^{-4} M to an aged system (E_h^a = 9.55) restored E_h^a to 3.3 within 15 minutes, indicating a possible reduction of Pu(IV) to Pu(III) in the absence of $Cr_2O_7^=$. Measurements of the absorption spectra of these solutions confirmed this reduction. The addition of 10 g/l of 4-methyl, 3-oxime pentanone-2, an intermediate in the reaction of nitrous acid with hexone, was also observed to prevent the increase of E_h^a with time of contacting.

STACK GAS DISPOSAL

Graded sand filters, designed to remove activity from the Canyon ventilation

air have been tested at B Plant. Laboratory determinations of activity collected on C.W.S. type 6 filters before and after filtration of Canyon ventilation air through 30 mesh Ottawa sand indicated the decontamination efficiency of this sand filter to be approximately 85% to 99.7% at air velocities of 10 feet to 1 foot per minute, respectively. Similar tests with a filter charged with 30-40 mesh sand from White Bluffs resulted in decontamination efficiencies of approximately 99.9% of air velocities throughout the same range. Tests with a filter charged with 16-20 mesh sand from White Bluffs, however, indicated decontamination efficiencies (based on instrument surveys of the filter papers) of approximately 85% to 98% at air velocities of 10 to 2 feet per minute, respectively. The pressure across the sand filters (approximately 20 inches of sand) at an air velocity of 10 feet per minute was 1.5 inches of water for the 16-20 mesh sand from White Bluffs, 3.5 inches for the 30 mesh Ottawa sand, and 5.0 inches for the 30-40 mesh White Bluffs sand.

Design of a full scale sand filter for T Plant has been started. Use will be made of the duct-work and other facilities which were designed and in the process of fabrication for the plant scale scrubber installation which has been cancelled in view of the tests reported below.

Tests of the small scrubber, designed for the decontamination of Canyon ventilation air, indicated a decontamination efficiency of approximately 70% to 80% of an air flow rate of 10 CFM and a water rate of 2 gpm. An efficiency of approximately 97% was obtained under these flow conditions, however, with the injection of steam into the scrubber. With steam injection 80% of the activity was removed at an air flow of 20 CFM. This unit is being tested further.

A single test was made with a standard 15 CFM C.W.S. filter. An efficiency in excess of 99% was indicated after 114 hours of operation at flow rates of 5 to 7 CFM.

Solvent Wash

One short test run was made with the electrostatic precipitation unit. Efficient decontamination was indicated at the design flow rate of 20 CFM and potentials of 43 to 44 KV. Work on the sand filters has postponed further tests of this unit.

Liquids

Activity in the B Plant Canyon ventilation air remained at a level higher than that experienced previous to the removal of the filters between the process cells and the ventilation tunnel. At T Plant the activity in the Canyon ventilation air remained at a comparatively low level and dropped significantly at the end of the month coincident with the low operational level in this Canyon.

MEDICAL DIVISION

JULY 1948

GENERAL

The Medical Division roll increased by fourteen. Four physicians and one dentist were added to the staff. Additions were to gradually round out our requirements to care for the increasing population.

Following attendance at Camp G.E., Dr. Norwood visited the installations at K. A. P. L. in Schenectady, A. E. C. Washington office, Oak Ridge and Chicago. A new tolerance level of 0.3 rep per week has been accepted at both Oak Ridge and Chicago for whole body exposure to beta or gamma rays.

Dr. Jacobson and Dr. Allen at Chicago report favorably on the treatment of radiation damage in animals with toluidine blue and protamine, and Dr. Schubert reports favorable results in the increased elimination of plutonium from the bodies of mice. The bulk of the medical biological research work at both Chicago and Oak Ridge is concerned with fundamental cellular changes including genetics. Disaster planning was farther ahead at this project than in Chicago, Oak Ridge or Knolls.

Beryllium toxicity is receiving increasing attention, the air tolerance for the oxide and the metal being set at .14 micrograms per cubic foot. A critically ill Argonne National Laboratories employee is being treated for what is thought to be beryllium poisoning following small exposure.

Absenteeism due to sickness was 0.90%, a new low.

Employee physical examinations increased to 6,776. Three-fourths of these were done at North Richland. First aid treatments in the fourteen stations increased to a high of 20,252, approximately 780 per day.

Influenza

Twenty-two major and forty-five submajor injuries were treated, a considerable increase. Of these, three majors and five submajors were sustained by [redacted] employees.

Tetanus

The health topic was "Appendicitis".

The average daily hospital census was 81, which is little different from June, and is surprisingly low considering the population served. The average stay of these patients remains low at 5.5 days.

Clinic visits also remained about constant at 267 per day. 27% of these were seen at the North Richland medical center. Dental clinic visits reached a high of 3,230.

MEDICAL DIVISION

JULY 1948

Plant Medical Division

Physical Examinations	June 1948	July 1948	Year to date
Pre-employment	469	301	2896
Annual	382	270	667
Sub-contractors & Food Handlers	2399	2827	22255
Rechecks	579	478	4318
Interval Rechecks (Area)	608	660	5309
Terminations & Transfers	1678	2192	5306
Army & Government	29	48	160
Assist to A & H Ins., Clinic, etc	0	0	0
Total	6144	6776	40911
Laboratory Examinations			
Clinical Laboratory			
Pre-employment, terminations, transfers	15142	16288	117049
Annual	2305	1777	4175
Rechecks (Area)	3291	3139	27026
First Aid	48	43	250
Plant Visitors	0	0	12
Clinic	2534	2885	17315
Hospital	2860	3167	20904
Public Health (Inc. food handlers)	881	805	4976
Total	27061	28104	191707
X-Ray			
Pre-employment, terminations, transfers	2540	2689	20652
Annual	384	303	699
First Aid	296	347	1806
Clinic	337	315	2097
Hospital	238	174	1512
Public Health (Inc. food handlers)	252	179	1319
Total	4044	4007	28085
Electrocardiographs			
Industrial	149	137	325
Clinic	15	15	72
Hospital	16	17	119
Total	180	169	516
Allergy			
Skin Tests	17	39	249

MEDICAL DIVISION

JULY 1948

First Aid Treatments	June 1948	July 1948	Year to date
Occupational Treatments	3378	3750	18688
Occupational Retreatments	9537	10207	54935
Welfare Treatments	5664	6295	40236
Total	18579	20252	113859

Absenteeism Investigation Report

Total number calls requested	5	13	170
Total number calls made	5	13	170
Number absent due to illness in family	0	0	1
Number not at home when call was made	0	1	3

General

Examinations increased from 6,144 in June to 6,776 in July, of which 5,039 were done at North Richland. First aid treatments increased from 18,579 in June to 20,252 in July.

Major injuries increased as follows over June:

	June	July
General Electric	1	3
Atkinson-Jones	8	17
Morrison-Knudsen	2	1
J. L. Hudson	0	1
Total	11	22

Sub-major injuries decreased as follows:

General Electric	6	5
Atkinson-Jones	32	38
Morrison-Knudsen	6	2
Nettleton-Sound	4	0
Total	48	45

The health topic for the month dealt with "Appendicitis". Material was distributed throughout the plant on this subject and discussions held.

3 Absenteeism was as follows:

Total absenteeism weekly employees all causes	2.60%
Total absenteeism weekly employees sickness only	.90%
Total days lost by male employees due to sickness	728
Total days lost by female employees due to sickness	460
Total days lost due to sickness	1188

MEDICAL DIVISION

JULY 1948

Village Medical Division

Clinic Section	Men	Women	Children	June 1948	July 1948	Year to date
First Visits	895	717	379	1760	1991	9810
Retreatments	2218	2613	956	5753	5787	37490
Total				7513	7778	47300

Clinic Visits

Medical	1648	1751	8658
Pediatrics	698	757	5018
Surgical	897	763	5622
Gynecological	526	501	3226
Obstetric (New)	86	103	576
Obstetric (Recheck)	663	684	4454
Venereal Disease	584	629	4804
Ear, Nose & Throat	338	349	2307
Eye	289	278	1983
Visits handled by nurses (hypo, dressings)	1009	1147	5367
Night clinic visits	775	816	5285
Total	7513	7778	47300
Total clinic visits per day	250	251	222
Seen in Well-baby Clinic	265	267	1513

Home Visits

Doctors	291	194	1589
Nurses	318	113	1176
Total	609	307	2765

Kadlec Hospital Section

Census

Admissions	483	452	3419
Discharges:			
Surgical	124	105	829
Medical	83	90	686
Obstetric & Gynecologic	100	122	668
Eye, Ear, Nose & Throat	53	33	440
Pediatrics:			
Children	32	22	343
Newborn	71	75	433
Total Discharges	463	447	3409
Patient Days	2470	2512	18742
Average Stay	5.3	5.5	5.4
Average Daily Census	82.3	81.0	88.1
Discharged against advice	3	7	20
One-day cases	84	61	548

MEDICAL DIVISION

JULY 1948

Operations	June 1948	July 1948	Year to date
Transfusions	42	52	244
Eye, Ear, Nose & Throat	43	16	200
Dental	1	0	5
Casts	21	16	128
Minors	51	59	412
Majors	53	42	317
Vital Statistics			
Deaths	2	4	21
Deliveries	82	71	436
Stillborn	0	1	4
Physiotherapy Treatments			
Clinic	110	125	883
Hospital	45	56	446
Industrial:			
Plant	310	345	2862
Personal	50	50	344
Total	515	576	4535
Pharmacy			
Number of prescriptions filled	3238	3373	20217
Patient Meals			
Regular	3003	3308	24366
Lights	22	67	348
Softs	1346	999	11094
Surgical Liquids	115	87	625
Tonsils & Adenoids	115	39	580
Specials	889	1062	4990
Liquids	195	230	2761
Total	5685	5792	44764
Cafeteria Meals			
Noon	2565	2430	17312
Night	391	396	2324
Total	2956	2826	19636
Nursing Personnel			
First Aid Nurses	48	54	
Clinic Nurses	17	17	
Public Health Nurses	15	15	
Hospital General Nurses	85	83	
Aides & Orderlies	60	61	
Total	225	230	

5

MEDICAL DIVISION

JULY 1948

General

During July there was a slight decrease in hospital admissions; however, the average daily census showed little change, being 82 in June and 81 in July.

Clinic visits increased by about 3%. Since the first of the year, clinic visits have increased by over 40%. Four clinical doctors were added to the staff. The increase is due to expanding operations of the North Richland Hospital.

Public Health Section

Administration	June 1948	July 1948	Year to date
Newspaper Articles	22	16	119
Committee Meetings	5	1	19
Attendance	20	4	105
Staff Meetings	8	2	21
Lectures & Talks	0	4	35
Attendance	0	40	2166
Conferences	6	1	68
Attendance	39	9	206
Radio Broadcasts	0	0	3

Immunizations

Cholera	3	0	3
Diphtheria	74	36	1514
Influenza	0	0	29
Rocky Mt. Spotted Fever	16	1	43
Schick Test	0	0	1
Smallpox	21	2	553
Tetanus	1	2	25
Typhoid	493	137	651
Whooping Cough	0	4	128
Total	608	192	2947

Social Service

The Social Service Section continued to work out a more effective and closer cooperation with the American Red Cross and the County Welfare office. In July, for the first time, payment of medical and hospital bills by the county office was approved for patients treated in Richland who were in need of assistance.

Twenty-seven new cases were admitted during July, which added to the cases carried over from June, made a total of 199. Eighty-three cases were closed, leaving the case load at 116 as of July 31st.

MEDICAL DIVISION

JULY 1948

	June 1948	July 1948	Year to date
Sanitation Inspections	438	382	1545
Bacteriological Laboratory			
Treated Water Samples	427	287	1656
Milk Samples (Inc. cream & ice cream)	149	148	1067
Other Bacteriological Tests	418	509	2641
Total	994	944	5364
Communicable Diseases			
Chickenpox	7	10	89
German Measles	13	5	72
Gonorrhea	31	11	116
Impetigo	0	0	7
Influenza	0	0	65
Measles	108	73	733
Meningococcic Meningitis	0	0	1
Mumps	49	19	975
Pediculosis	2	0	4
Pinkeye	0	0	8
Ringworm	0	0	1
Scabies	2	0	33
Scarlet Fever	3	3	18
Syphilis	23	21	152
Thrush	2	0	2
Tuberculosis	0	4	7
Vincent's Infection	3	1	5
Whooping Cough	2	1	46
Malaria	0	1	1
Food Poisoning	0	7	7
Total	245	156	2342
Total No. Nursing Field Visits	1280	1086	10336

General

During the month there was a marked decline in communicable and morbidity control visits.

The Social Service Section continued to work out a more effective and closer cooperation with the American Red Cross and the County Welfare Office. In July, for the first time, payment of medical and hospital bills by the county office was approved for patients treated in Richland who were in need of such assistance.

Progress is being made toward the completion of physical alterations requested by this department in #2 cafeteria at North Richland. It is not officially known whether #1 cafeteria is going to be abandoned or completely renovated in order that minimum sanitary standards can be maintained.

7

P. H. General (Continued)

Field inspections of the barracks and trailer camp facilities reveal satisfactory operation from a sanitary standpoint.

Recent inspections of milk producers supplying the pasteurization plant resulted in the elimination of three producers for failure to comply with recommended sanitary standards. Bacteriological tests of milk received in Richland were satisfactory during the month.

Despite the recent flood, the control of flies and mosquitoes has been maintained. Factors aiding in this accomplishment were the procurement of new equipment and the efforts of personnel engaged in the program. Assistance was also rendered to nearby communities without the need for additional personnel.

Dental Section	June 1948	July 1948	Year to date
Patients Treated	2986	3230	19698

General

One dentist was added to the staff during July, making a total of thirteen. The total number of patients treated was 8% higher than for any previous month, and a peak day was reached on July 27th when 175 patients were treated.

[illegible] dosage rate	[illegible]		
[illegible] gamma dosage rate	[illegible]		
[illegible] total dosage rate	[illegible]		
[illegible] integrated dose in 24 hrs.	[illegible]		
[illegible] integrated dose in 24 hrs.	[illegible]	[illegible]	[illegible]
[illegible] integrated dose in 24 hrs.	[illegible]	[illegible]	[illegible]

MEDICAL DIVISION PERSONNEL SUMMARY

July 31, 1948

AREAS	Physicians	Dentists	Nurses	Aides & Orderlies	Technicians	Office Workers	Others
100-DR			3				
100-H			1				
234-5			2				
White Bluffs			3				
Pasco			1				
101			1				
3000	13	2	17	6	9	38	13
100-B			)			)	
100-D			5		2*	1	
100-F			)			)	
200-E			3		2*	2	
200-W			)			)	
300			2		2**	1	
Plant General	7		16				
700-1100	24	11	112	55	28	87	65
Total	44	13	169	61	39	129	78

Number of employees on payroll:

Beginning of month	519
End of month	533
Net increase	14

* One day per week.
** Two days per week.

HEALTH INSTRUMENT DIVISIONS

JULY 1948

Summary

The force increased by thirteen. There was one Class I Special Hazards incident, with no serious consequence involved. All personnel exposures were within limits.

In the Operational Division, work loads and survey findings were normal. No unusual or unexpected situations developed during the startup of the 100-B Pile. Several air samples in the Metal Fabrication Area again indicated overtolerance uranium concentrations.

In the Control and Development Section, samples of water, air and vegetation showed the normal pattern for environmental hazard. The bioassay program showed two resample results above the warning limit for the plutonium excretion test. These two will be re-sampled and carefully checked again. Uranium content of three samples exceeded 10 ug U/liter. Biological monitoring of animals and fish proceeded without special incident.

HEALTH INSTRUMENT DIVISIONS

JULY 1948

Organization

The composition and distribution of the force as of 7/30/48 was as follows:

	100-B	100-D	100-F	200-W	200-E	300	700	P.G.	Total
Supervisors	1	1	3	9	4	13	9	0	40
Engineers	4	4	5	9	15	9	0	0	46
Clerical	0	0	1	1	0	2	4	0	8
Others	8	12	15	49	30	55	8	7	184
Total	13	17	24	68	49	79	21	7	278

Number of Employees on Payroll	July
Beginning of Month	*265
End of Month	278
Net Increase	13

The net increase resulted from the addition of 17 people, the termination of one engineer, one technical graduate B, one helper and one office helper, and the removal from the roll of one general clerk C. The additions to the roll were (Operational Division) four technical graduates B, nine general clerks C, and one stenc-typist D and (Development Division) one laboratory assistant C and one laboratory assistant D. One engineer returned from leave of absence.

Reorganization of the Health Instrument Division into three Divisions was announced [redacted] newly created Biology Division.

General

Evidence was obtained in this period which further substantiates the belief that the number of detectable active particles deposited on the ground in the 200 West and 200 East Areas is increasing. In July, approximately 200 million and 300 million such particles fell in the East and West Areas, respectively, This is more than double the total deposition reported last month.

One Class I Special Hazard Incident Investigation was held. The off-standard practice involved failure to follow Special Work Permit recommendations.

*Incorrectly reported as 268 last month.

Health Instrument Divisions

An anomalous situation was explained satisfactorily when it was determined that 294 badge results, between 100 and 500 mrep, in the DR Area were due to radiation background at the Gatehouse from the nearby 100-D Area burial trench. A badge result of .2 rep, also in DR, was caused by a radium dial watch carried in the same pocket as the badge.

There was no actual high exposure in the routine pencil and badge program.

[redacted] ere a gear was removed from the agitator for repair. [redacted] aximum exposure te of 2 rep per hour was reported.

[redacted] the 3 Plant, several 13-4 samples with dosage rates above 2 rep per hour during transfer required special handling. While trombone decontamination was attempted in one case, an operator inadvertently touched the trombone with his glove, which was immediately removed and showed [redacted] dosage rate of [redacted].

OPERATIONAL DIVISION

100 Areas

General Statistics

	June				July				1948
	B	D	F	Total	B	D	F	Total	To Date
Special Work Permits	335	614	1250	2199	460	561	938	1959	13,763
Routine & Spec. Surveys	61	350	363	774	718	458	462	1638	6,149
107 Effluent Surveys	0	70	35	105	119	81	95	295	1,010
*Air Monitoring Samples					94	60	77	231	

*Included with Routine and Special Surveys until July 1948

Retention Basin Effluent

The activity of the water leaving the Retention Basin was as follows:

		100-B	100-D	100-F
Power level	(MW)	0-275	275	275
Average beta dosage rate	(mrep/hr)	0.7	1.1	1.1
Average gamma dosage rate	(mr/hr)	2.2	1.9	2.0
Average total dosage rate	(mrep/hr)	2.9	3.0	3.1
Average integrated dose in 24 hrs.	(mrep)	70	71	75
Maximum integrated dose in 24 hrs.	(mrep)	94	84	84
Maximum integrated dose in 24 hrs.	(mrep)	94	115	84

With only one side of the 100-B Area Retention Basin in operation, effluent water readings approached tolerance when the power level reached 180 MW. Both sides of the basin were put into operation and readings at 275 MW were well within limits. After a few weeks of operation both gamma and beta readings leveled off to values about equal to 100-D and 100-F.

Effluent water readings at the 100-D Retention Basin reached 4.9 mrep/hr for a short time during a Pile purge when only one basin was in operation. The second basin was placed in operation and the condition corrected.

Leaks in the effluent line in the 100-F Area about 250 feet west of the Retention Basin showed readings as high as 65 mrep/hr. Seepage of process water was observed along the bank of the river and one sample obtained about 50 feet from shore showed a concentration of 0.085 μc/liter. Work on the new effluent line from the Pile Building to the Retention Basin continued during the month with moderate exposure to personnel.

100-B Area

The pile was placed in operation on July 1, and the power level raised slowly to 275 MW. Various control surveys were made periodically during the start-up period.

The PC tube used to measure criticality during pile start-ups was installed in the inlet side of process tube 0453 instead of in one of the ion chamber tunnels. Although shielding was installed prior to start-up, surveys at low power levels revealed a crescent shaped gamma beam emerging from the end of the tube and additional shielding was required. Fast and slow neutron fluxes were not appreciable at the end of the tube but significant scatter was observed between the shielding and the face of the pile.

High levels of neutrons and gamma radiation were detected at several points on the experimental level. Radiographs at the "E" experimental hole showed a 5/8 inch beam emerging from the hole. Intensities at 100 MW were 5 roentgens per hour for gamma and 4 rem per hour for fast neutrons. The beam was well columnated across the level and was only 2½ inches in diameter on the inner instrument room roof. Adequate shielding was provided during the next shutdown. Larger beams of much lower intensities were observed at the "A" and "D" experimental holes but supplementary shielding was not necessary. Fast and slow neutrons totaling 65 mrem per hour at 100 MW were detected in the vicinity of the "B" experimental hole and were probably derived from the empty water line for that hole. Additional shielding reduced these fluxes to about 30 mrem per hour at 275 MW. Surveys of the vertical T-section plates gave evidence of fast neutrons.

[illegible] Martindale cans were surveyed with a [illegible] probe. Several gas leaks over the face of the pile were located and effectively sealed. One leak is evident in the vicinity of tube 0453 but has not been definitely located. Gas activity was apparent at several locations in the work area, on the [illegible] elevator, and in the [illegible] tunnels. Several gas leaks around the stop-plugs above the cushion chamber were successfully sealed. Gas activity at the top of the pile fluctuated through a rather definite cycle of about 40 minutes. This effect was noticed only at low power levels.

Unusual activity was detected at the drains in the sample rooms and transfer area, and at the rear of the storage area. Air samples showed a beta concentration as high as 4.8×10^{-5} microcuries per liter and decay studies indicated a short half-life. Water seals were installed but were only partly successful in correcting the condition. High air samples were also obtained in the machinery room and the inner instrument room.

The papoose cutter was removed from the storage area basin and buried. Low level alpha contamination was observed on parts of this equipment.

The trenches at the burial grounds have been filled to overflowing and will probably require mounding to reduce the exposure rates below the

tolerable level. The burial ground at present is located some distance from the Pile Building and should be abandoned in favor of a better location.

100-D Area

Special samples were removed from the "B" experimental hole without difficulty or spread of contamination. Technical Division personnel borescoped the "A" experimental hole thimble and momentarily encountered a dosage-rate of 6 roentgens per hour as the instrument was moved into and out of the thimble. Contamination levels were maintained at a very low level and total exposures to personnel were small.

Maintenance work to the vertical safety rods and thimbles was the cause of high exposure rates and gross spread of contamination. During rod-buffing operations and the removal of rust from the vertical thimbles, dosage-rates as high as 12 roentgens per hour were obtained on rod tips and as high as 10 roentgens per hour on water precipitators. Personnel were exposed for a few seconds to dosage-rates of 2.5 roentgens per hour but total exposures were maintained below 50 mr. Contamination was prevalent over all areas at the top of the pile and several articles of personal clothing had to be confiscated. Air sample results were generally low, but respiratory protection was required.

Investigation into the large number of badge readings at 100-DR revealed that all badges are in a low radiation field while stored in the racks at the badge house. Surveys indicated the source of this radiation was the 100-D burial grounds located about 100 yards away, and the trench was backfilled. Surveys at the badge house showed the radiation level was reduced. Film servicing will not show if the condition was corrected until next month.

General Statistics

Film surveys in the beam at the top, far edge of the pile showed a dosage-rate, due to a beam, of about 400 mr per hour. A steel plate (8" x 8" x 2") was mounted directly in the beam to estimate the neutron scatter which could be expected if a shield were installed over the beam. Preliminary results indicated that very little scatter would result from such a shield. Neutron surveys in the beam showed no significant change over the last month.

During a routine test of the vertical safety rods on July 21, one of the rods became stuck and entrance had to be made to the intermediate winch level with the pile operating. Exposure-rates were very low.

Returned casks and cask boxes continued to show alpha contamination in nearly every case. Contamination was usually confined to the lids of the casks and to the inside of the boxes, but small amounts were present on the outside of the boxes in some cases.

100-F Area

Maintenance work to the vertical safety rods and thimbles was continued during all shutdowns. High dosage-rates were encountered while rust was removed from the thimbles, but total individual exposures did not exceed tolerance. Widespread contamination was apparent over all of the surfaces at the top of the pile including the rods themselves, but air samples were all less than 5 x 10^{-7} microcuries per liter. During a scram on July 19, two rods became stuck and special maintenance work was required at moderate exposure levels.

The removal of samples from the experimental holes produced high radiation levels and some spread of contamination. Individual samples gave dosage-rates as high as 600 mr per hour at six feet and personnel occasionally was replaced to avoid overexposure. Contamination observed on the hair, hands and personal clothing of one man and on the hands of another was easily removed by washing. Other contamination in this vicinity was effectively controlled and was not spread outside of the far side area. During the removal of a sample from the "B" experimental hole, a beam of 27 roentgens per hour was reported.

Technical Division personnel made attenuation studies on control rod samples using a beam of neutrons from the "B" experimental hole. Survey readings showed a gamma intensity of 11 roentgens per hour and a fast neutron reading of 3.9 rem per hr in the beam, but exposures to personnel were very low.

During burial operations, radiation levels at the edge of the burial trench reached a maximum of 1 roentgen per hour on at least two occasions and decontamination was required. On another occasion, personnel were exposed briefly to a field of 1.2 roentgens per hour when sections of a process tube could not be removed from the burial cart in the normal manner. An unusually high reading was found on one bucket of dummies as it was brought near the surface of the water. Investigation revealed the presence of an active metal piece. No unusual personnel exposure occurred.

The fixed monitors placed in the beam from the step arrangement of the biological shield at the top, far edge of the pile showed a marked rise in activity following the shutdown on July 27. These monitors have always shown slight permanent increases in activity after each shutdown, but the increase this time was much larger than usual. Readings at the reference point on the 50 foot far roof were also much higher, having increased from 8 mr/hr to 14 mr/hr.

Surveys made on the equipment used to clean the Retention Basin revealed most items to be contaminated. Attempts to decontaminate were effective but not complete and most items had to be restricted permanently. A

sandy mound on the edge of the trench which received the sediment from the Basin showed a reading of 40,000 c/m. Readings on the bottom of the trench were greater than 100,000 c/m. Contaminated areas were covered with dirt.

200 Areas, T and B Plants

General Statistics

	June			July			1948
	T	B	Total	T	B	Total	To Date
Special Work Permits	417	406	823	340	476	816	5206
Routine & Special Surveys	277	339	616	371	288	659	4242
Air Monitoring Samples	447	495	942	497	586	1083	6294
Thyroid Checks	169	93	262	177	116	293	2228

Canyon Buildings

In the T Plant, an air sample taken during the removal of a jet from Section 14 showed a result of 1.5×10^{-6} μc f.p./liter and 1.7×10^{-9} μg Pu/cc. There was no personnel entry to the Canyon during this period. The 9-1 agitator was removed and placed in the old 14-1 tank stored in Cell 18R, where a gear was removed from the agitator for repair. A maximum exposure rate of 2 rep per hour was reported.

In the B Plant several 13-4 samples with dosage rates above 2 rep per hour during transfer required special handling. While trombone decontamination was attempted in one case, an operator inadvertently touched the trombone with his glove, which was immediately removed and showed a surface dosage rate of 4.3 rep per hour. The finger ring result indicated no significant exposure. A centrifuge and two agitators were removed to the burial ground in a special box on a flatcar with a maximum exposure-rate of 250 mrep/hr recorded. During canyon work eight air samples were significant, the high result was 1.1×10^{-5} μc f.p./liter and 5.8×10^{-10} μg Pu/cc during observed jetting of wash water in Section 8. Additional contamination was noted in electrical and instrument equipment in the Operating Gallery, and analysis of a smear showed about 90% of the fission product activity to be due to ruthenium.

Control Laboratories

In the T Plant, bench contamination and hand contamination of 23,000 d/m Pu occurred when a stirrer was used which had an oversize length platinum wire. The skin was decontaminated successfully within two hours.

In the B Plant, a total of 345 items, not regulated with respect to handling, was found contaminated on surveys by Technical and Health Instrument Division personnel. In addition, 86 contaminated floor locations were reported. Forty-two cases of fission product and seven cases of product hand contamination were reported, and all were successfully reduced.

Difficulties during stirring of a sample, caused hair, skin, and clothing contamination, but no over-exposure was indicated. This incident was investigated as Class I, No. 90. Two small waste cartons in Room 7 showed dosage-rates of 14.5 rep per hour surface with 500 mr/hr at 2 inches, and 34.2 rep per hour surface with 1.2 roentgens per hour at 2 inches. Finger film results for the employee who had handled the cartons without tongs showed 15 mrep.

A leak was noted in the vent line of the sewer line from the decontamination sinks to the dry well, when material backed up to the leak. It was indicated that the well now has slow drainage.

Concentration Buildings

In the B Plant, spread of contamination indicated a leak at the E-2 manhole cover gasket. The gasket was replaced and the area was decontaminated without incident.

Stack Areas

In the B Plant, from July 25 to July 29, the dosage-rate at the west wall of the Fan House increased from 28 to 60 mr/hr and the inspection plate on the #2 fan showed a maximum of 4.2 roentgens per hour at two inches. This increase was attributed to material dissolved on July 20, which had a shorter than normal cooling period. S Division personnel operated the sample line filters in the Stack Monitor Building in order to determine the feasibility of reduced water flow rate through the dissolver scrubbers. Filter papers removed have shown a maximum of 24 rep per hour surface, and were handled with tongs in a maximum exposure-rate of 1 rep per hour. The 292-A-B Building now contains a precipitator which was operated for about 1½ hours, a sand filter column which had considerable use, and a berl-saddle vertical packed column scrubber which was used only briefly. The sand filter indicated the greater efficiency. Removed filter papers showed a surface dosage-rate of 8 rep per hour with 120 mr/hr at 2 inches, and were handled with maximum exposure-rate of 520 mrep/hr reported.

Waste Disposal Areas

In the T Plant, new waste lines were welded to existing ones in a maximum exposure-rate of 3 roentgens per hour. Dirt samples from

excavations in sub-contractor zones have shown no detectable contamination.

In the B Plant, jetting of the second cycle waste supernatant from the 104-B tank to the second cycle crib in the Tank Farm area was started. Samples from the sub-crib laterals in the H.I. test shaft were normal. Sludge on a measuring stick used in the 104-B tank showed 4000 c/m.

North Areas

Technical Division personnel continued photographing of a ruptured slug in the 212-N Building. A maximum exposure-rate of 1 roentgen per hour at ten feet was reported. Renovation of the cutting box for further use is in progress. General level over the open box was 4 rep per hour at about two feet, but work was done remotely with a maximum exposure-rate of 750 mrep/hr reported. Several air samples have shown slightly greater than 2 x 10^{-6} µc f.p./liter, and Chemox masks are worn around the open cutting box.

General

In the T Plant, a total of 6500 Martindale pads was surveyed with a GM probe and no contamination was detected. A total of 2130 pads was surveyed with film, and on the completed results available, 48 confirmed particles were found on 660 pads.

In the B Plant, 8257 Martindale pads were surveyed with a GM probe, five of which showed detectable contamination. Apparently all five were worn by female employees as indicated by lipstick stains. The maximum contamination of 6000 c/m was on a mask strap, presumably from handling with a contaminated glove. Completed film surveys of 12,345 pads during the period of 6/1/48 through 7/16/48 showed 720 confirmed particles.

All thyroid checks were below the conservative warning level.

The Isolation Building

Air Monitoring

There were 340 spot air samples taken, of which four exceeded 10^{-11} µg Pu/cc. Masks were worn in three cases of significant concentration, and the maximum sample showed 10^{-10} µg Pu/cc when a greenhouse panel was open in Cell 3. A sample of 3.5 x 10^{-11} µg Pu/cc was obtained while slurping a sample in Cell 6C when masks were not worn.

Twenty-eight Little Sucker samples had as the high result 1.2 x 10^{-11} µg Pu/cc obtained in Room 35. Fourteen samples of the 903 exhaust system air had as the high result, 3 x 10^{-12} µg Pu/cc.

Surface Contamination

A total of 375 items, not regulated with respect to handling, was found contaminated on surveys by Technical, Health Instrument, and S Division personnel. There were 10 items above 20,000 d/m and two above 80,000 d/m reported. In addition, a total of 32 contaminated floor locations was reported, 21 in the laboratories, 8 in the operating cells, and 3 in the corridors. The maximum spot was 0.1 μg Pu in Room 35. There were 20 cases of product hand contamination, all of which were successfully cleaned. All instances were low level, except two of about 2.8 μg Pu and about 0.4 μg Pu respectively. Both of these cases resulted from handling an item which was not regulated, but was found contaminated.

Special Work

The damper unit in the 903 system was replaced without contamination spread.

A break in the sanitary water line outside the building near the sump tank was followed carefully, but no contamination was found in the vicinity of the break. Water samples were taken from the building for analysis.

Gamma Radiation

[illegible] for 48 hour alpha and 24 hour beta scores.

P. R. Container	7.5 mr/hr (maximum)
Process Hood	2.5 mr/hr (maximum)
S. C.	5 mr/hr (maximum)

The 300 Area

General Statistics

	June	July	1948 To Date
Special Work Permits	252	297	1883
Routine & Special Surveys	110	106	1001
Air Monitoring Samples	93	103	775

Metal Fabrication Plant

Fifteen out of thirty air samples taken were above the tolerance concentration as summarized below:

Location	No. Taken	No. Above 1.5×10^{-4} µg U/cc	Maximum Concentration µg U/cc
Chip Recovery	7	3	*9.7×10^{-4}
Slug Recovery	3	1	**1.8×10^{-4}
Machining Area	4	2	***4.8×10^{-4}
Oxide Burner	1	0	---
Extruder Building	5	2	#9.4×10^{-4}
Melt Plant	10	7	##1.5×10^{-3}

*at brickett press
**at HNO_3 pickling tank
***at operator's position
#during rod weighing
##in Furnace Room

Special process material containing U-235 was received and canned in special pieces. Special containers were used to keep the number of slugs stored in one place to less then thirty. No contamination was encountered and exposure-rates were less than for natural uranium.

305 Building

A special run of dyed canned pieces was made in the pile at the normal power level. Radiation levels were similar to those obtained with regular pieces as to activity.

Technical Building

[illegible] of Columbia River water were taken with one sample [illegible] showing a trace amount of [illegible] later with the new [illegible]. An air sample taken in front of the [illegible] showed 2×10^{-11} µg Pu/cc, but [illegible] were not significant. All other samples were below 2×10^{-11} µg Pu/cc.

Laundry Decontamination and Hand Counting

A total of 134,290 items was monitored in the Plant Laundry, including 57,998 alpha checks. Included were 24,757 coveralls, 53,272 gloves, 34,112 overshoes, and 6,254 slacks and jackets.

Forty-one spot air samples and 44 Big Sucker air samples were taken in the Laundry, and had as a high result 2.2×10^{-10} µg/cc (calculated as Plutonium), taken behind washer #2 during the processing of 300 Area clothing. This concentration was probably due to Uranium, and calculated as such, showed 2.2×10^{-5} µg U/cc.

Plant General

Frames exposed in the 200 East and 200 West Areas for the month of June indicated a deposition of 2×10^{8} particles and 3×10^{8} particles

respectively.

The sand in a 100 foot square area was dyed and catch boxes installed at the north, south and west edges of this area. All showed visual evidence of dyed sand. The amount of sand collected on each shelf was as follows:

Shelf Height above Ground	North	South	West
One foot	64.88 g	15.58 g	4.33 g
Three feet	14.80 g	1.95 g	3.00 g
Five feet	4.3 g	2.65 g	trace

The larger quantity collected on the north side was probably due to the high velocity southerly winds.

Films of air sample filters in the areas indicated average monthly inhalation rates varying from 3 at the Isolation Building Gatehouse to 44 at the B Plant gate. In construction sites the averages were 5 per month in TX, 5 at 241 B-Y, and 2 south of U Plant. Off-plant surveys indicated about 3 particles breathed per month in Benton City and 2 in Richland.

Three filters, analyzed for total activity at the H. I. Methods Laboratory, showed the following results:

T Plant Gatehouse	9.4×10^{-8} μc/ft^3
B Plant Gatehouse	1.1×10^{-7} μc/ft^3
[illegible]	8.7×10^{-8} μc/ft^3

Eighty-eight frames located throughout the reservation showed the high particle deposition rate north of the 200 Areas. This, like results inside the 200 Areas, was upwind as to prevailing wind directions. High velocity winds, however were from the southerly quadrant.

Health Instrument Divisions

PERSONNEL METERS

Pencils	100-B	100-B	E&N 200	200-W	300	Total	1948 To Date
Total Pencils read	9,951	10,153	29,938	42,686	38,333	145,828	916,396
No. of Single Readings (100 to 280 mr)	49	155	50	79	168	462	3,037
No. of Paired Readings (100 to 280 mr)	1	2	0	0	0	5	27
No. of Single Readings (Over 280 mr)	123	168	85	131	485	1,213	5,806
No. of Paired Readings (Over 280 mr)	6	12	1	0	5	28	88
Paired Readings Lost	1	0	2	0	1	6	37

No significant pencil result was confirmed by the badge result. Investigation of lost readings showed no possibility of an overexposure.

Health Instrument Divisions

Badge Resume, Construction Areas

	105-DR	241-TX	384	Total	1948 To Date
Badges Processed	13,609	7,645	141	21,395	104,439
No. of readings (100 to 500 mrep)	294	11	0	305	477
No. of readings (Over 500 mrep)	1	0	0	1	70
Lost Readings	9	8	0	17	72

The one result of over 500 mrep in the DR Area was investigated and found to be due to a radium dial watch carried in the same pocket as the badge.

The 294 results between 100 and 500 mrep in the DR Area was attributed to the radiation background at the DR Gatehouse from the 100-D Area burial trench. The trench was backfilled.

Lost readings were due to:

Badge lost in area	8
Badge dropped in liquid	3
Lost in processing	2
Damaged Film	2
Exposed to x-ray	2

*Shielded portion read 0

H.R.I.

Badges	100-B	100-D	100-F	200-E	200-N	200-W	300	Total
Badges Processed	1,740	2,116	2,350	1,587	393	3,273	8,087	19,546
No. of readings (100 to 500 mrep)	3	7	12	15	7	9	230	283
No. of readings (Over 500 mrep)	0	0	8	0	0	0	1	9
Lost readings	3	3	3	0	2	1	3	15

Total 1948 badges to date, operations	164,476
Total 1948 badges to date, construction	104,439
Grand Total	268,915

Lost readings were accounted for as follows:

Badge lost in area	4
Stuck film	3
Lost in Processing	4

Health Instrument Divisions

Badge dropped in liquid	3
Exposed to x-ray	1*

*Shielded protion read 0

Investigation of lost readings where required showed no possibility of an overexposure.

The eight results in the 100-F Area of over 500 mrep were for a two-week period and were all below 1 roentgen. The men involved were on the same work which was done under S.W.P. procedure and daily exposures were estimated at about 50 mrep.

In addition 2,877 items of non-routine nature were processed, 1948 total to date 10,522.

There were 31,831 alpha hand checks and 38,662 beta hand checks recorded. About 0.44% of the alpha and about 0.22% of the beta scores were above the warning level.

Most of the high scores were recorded in the 300 Area. Where decontamination was attempted it failed in 8 cases of alpha and 4 cases of beta contamination, all in the 300 Area. No attempt at reduction was recorded for 48 high alpha and 29 high beta scores. [illegible] study has been made.

[illegible] Control

[illegible] were made on the following samples at the request of the Health Instrument and Technical Divisions:

CONTROL AND DEVELOPMENT DIVISION

Water Monitoring

Two hundred and fifty five 500 ml samples of drinking water were taken during the month. All alpha analyses were run by ether extraction thus eliminating the uncertainty and low values due to self-absorption. Almost all sources indicated traces of alpha activity with the new process in the levels expected from natural activity. The maximum alpha contamination of 381 dis/min/liter was found in 300 Area well #2. This well has shown increased readings during the last part of the month and averaged 203 dis/min/liter. The other wells averaged from 49 dis/min/liter to 110 dis/min/liter. The results were in general confirmed by fluorophotometer analysis. The Richland wells on the new alpha procedure averaged between 7 and 12 dis/min/liter, Benton City averaged 18 dis/min/liter and other wells gave comparable results. The results in Richland, 3000 Area, and White Bluffs were confirmed as uranium by routine fluorophotometer measurements. Twenty-one 11.7 liter samples of drinking water confirmed the results on the smaller samples. No sample of drinking water gave a value of beta activity as high as 5×10^{-5} uc/liter.

Eleven test well samples were taken. Slightly positive values of 6-7 dis/min/liter were found by the new process in Spring-139, Snively Ranch, and Rattlesnake Spring. No sample had as much as 5×10^{-5} uc/liter of beta activity. [illegible] Fifty-nine samples of Columbia River water were taken with one sample from 181-F showing an extract amount of 9 dis/min/liter with the new process. No other samples had as much as 6 dis/min/liter of alpha activity. The maximum beta activity was 7.5×10^{-6} uc/liter from a Hanford sample. Twelve samples of Yakima River water were taken with no positive result for either alpha or beta activity.

Atmospheric Monitoring

The integrons and "C" Chambers indicated average dosage-rates as follows:

Location	Integrons (mrep/24 hours)		C Chambers (mrep/24 hours)	
	June	July	June	July
100-B	0.2	0.2	0.3	0.3
100-D	0.8	1.3	0.3	0.4
100-F	0.9	0.9	0.3	0.4
200-W	0.7	0.4	0.3	0.3
200-E	1.1	0.4	0.5	0.5
Riverland	3.3	4.3	---	---
Hanford	0.4	0.4	---	---

Location	Integrons (mrep/24 hours) June	Integrons (mrep/24 hours) July	C Chambers (mrep/24 hours) June	C Chambers (mrep/24 hours) July
300 Area	1.4	0.3	0.5	0.4
700 Area	<0.1	0.4	---	---
Kennewick	<0.1	0.2	---	---
Pasco	0.2	0.5	---	---
Benton City	0.9	0.8	---	---

Detachable chamber readings in Hanford, TX, DR, and White Bluffs were 0.60, 0.5, 0.6, and 0.7 mrep/24 hours respectively. The maximum eight hour reading on a CI unit was 2.4×10^{-7} uc/liter at Gable Mountain. The highest average concentration was 3×10^{-9} μc/liter at the 200 East Area. Air filters at Hanford, White Bluffs, and 105 DR gave average readings of 1.4×10^{-10}, 8×10^{-11}, and 1.1×10^{-10} μc/liter respectively. Fifty rain samples were collected. The maximum rain sample was 0.026 μc/liter from the 200 West Area. The maximum off-area rain sample was 1.6×10^{-4} μc/liter from Benton City.

Land and Vegetation Contamination

The average vegetation contamination was as follows:

Location	Average for June	uc I^{131} per kg. July Maximum	uc I^{131} per kg. July Average
North of 200 Areas	<0.04	0.13	0.04
Near the 200 Areas	0.07	0.51	0.07
South of 200 Areas	<0.04	0.12	0.04
Richland	<0.04	0.09	<0.04
Pasco	<0.04	0.07	<0.04
Kennewick	<0.04	0.07	<0.04
Benton City	<0.04	0.06	<0.04
Richland "Y"	<0.04	0.04	<0.04
Hanford	0.04	0.11	<0.04

Seventy samples from Benton Gap gave a maximum value of 0.13 μc/kg and an average of 0.06 μc/kg. Twenty-six samples from Goose Egg Hill gave an average of 0.06 μc/kg and a maximum of 0.15 μc/kg. A survey of Wahluke Plateau on 7/10/48 gave an average of 0.05 μc/kg which is significantly higher than the previous survey on 5/8/48. A second survey on 7/24/48 gave an average of 0.04 μc/kg which essentially confirms the increase. Thirty-nine analyses were run by the new caustic extraction procedure on 5 grams. Spiked samples indicate about a 50% yield. All values from samples outside of the vicinity of the 200 Areas agve less than 5×10^{-3} μcI^{131}/kg. One sample from 200 West indicated 2.5×10^{-2} uc I^{131}/kg.

Geology

Wells 361-B-1, 3 and 4 continue to give positive indications of beta activity following the trends indicated last month. Results for alpha activity in those wells is not quite so well defined with considerable variation being observed in individual samples. Maximum value observed was about 280 dis/min/liter in sample from Well 361-B-1 taken late in June.

Six of the nine wells scheduled for drilling near the 5-6 crib and tile field have been completed and another has been drilled to a depth of about 120 feet. Drilling should be completed during the first week in August.

Liquid samples are being taken daily from the lateral in the H. I. shaft during jetting into the second cycle crib from the 104-B tank. Results of all samples will be reported next month. Samples will also be taken from the stub blanks upon completion of the jetting operation.

Twelve of the 25 wells scheduled on the extended Project C-133 have been completed. Completion of all wells should be accomplished by about September 1. Results of the drilling to date indicate a well defined channel south of Gable Mountain succeeded by a basalt ridge beneath the 200 East Area which, in places, extends above the water table. Southwest of this, and probably directly beneath the 200 West Area, is a presumed second channel which probably trends south from a point between Gable Butte and the Yakima Range to Route 11 A then turns southeastward and passes along the extreme north edge of Cold Creek Valley to the Yakima River at the Horn. The wells yet to be drilled will explore this second channel. These two channels are presumably in origin. Channels cut in the Ringold sediments and filled with later gravels have not as yet been delineated.

Meteorology

July, 1948, was the coolest July on record in this locality. The mean temperature was 72.8 which was 3.7 degrees below the normal. The coolest July recorded at Hanford during the 31-year period from 1912 to 1942 inclusive was 73.0 in 1932.

The temperature record for July, 1948, was also featured by the fact that no 100-degree readings were recorded. The highest was 98 which occurred on both the 17th and 31st. During the 31-year Hanford record, there was not a single July month in which the temperature failed to reach or exceed the 100-degree mark at least once.

Precipitation for July, 1948, totaled 0.40. Although this was roughly three times the normal July amount, it was well within the extreme of 0.90 recorded at Hanford in July of 1916.

There were no severe storms during July this year. It was on the 10th of this month in 1947 that a high wind and duststorm did much damage on the Project, particularly in Richland. A miniature replica of this storm occurred again on the 14th. At Building 622, the high wind records set on July 10, 1947, have since been exceeded several times. In Richland, however, this storm remains as the most destructive of the city's Project history.

Production Forecasts - Ninety-two were made. The average accuracy was 85.2%

Twenty-four hour Forecasts - Sixty-two were made. The average accuracy was 81.0%

Special Forecasts - Fifteen were made. Most of these were wind and thunderstorm warnings to the Electrical Division. Ten were right and 5 were wrong for a percentage of 66.7.

Bioassay

Four hundred and ninety-two urine samples were analyzed for plutonium. Fifty resamples were taken this month; thirty-seven because of low values on spiked samples accompanying the set, eight because of very high results from the set of samples, and five because of random high results. Eight of these have been resampled and one was found to contain more than 0.65 d/m. Of previous resamples all but six have been completed and one increased more than 0.65 d/m. A special check of these two cases is being made.

Eighty-one urine samples, forty-four water samples, and twenty-one hexone samples were run on the fluorophotometer. A program of increased sampling frequency for personnel in the Metal Fabrication Area has been outlined and should start this month. Twenty-one samples were run from the Metal Fabrication Area this month and three indicated greater than 10 µg U/liter, while of fifty-six samples run from personnel in the rest of the Plant only three showed as high as 2 µg/liter.

Methods Development

A new standard solution of uranium was made and calibrated by gravimetric analysis in order to check the one now in use. Considerable time has been spent in calibrating I^{131} spike solutions and assisting in the new vegetation analysis. New source holders for the RAD standards have been designed and ordered and special holders for

stainless steel plates have been designed. Back scatter measurements with P^{32} indicate 29% with aluminum backing on the first shelf and 20% on the fifth shelf. An investigation into the effect of absorber, source, and counter geometry on absorption curves is being made. One exposure of the nuclear particle film to plutonium indicates a possible gain in sensitivity in bioassay measurements if a method can be worked out to plate the plutonium on a small plate.

A total of eight samples from the scrubber on the dissolver in the T Plant were taken from two dissolvings. This rough estimate of the total activity in the scrubber solution gave 1.3 curies on one run and 5.3 curies on another. During these periods the total activity up the stack was estimated at 1.1 curies. A panel mounted filter-scrubber unit for routine monitoring of the stack was designed.

Another attempt is being made to purify lanthanum nitrate of the actinium contamination by a resin column method. Results to date are not favorable. Samples of pile gas from 105-B indicated 2.1 x 10^{-4} μc/liter as $C^{14}O_2$ and 7.7 x 10^{-6} μc/liter as $C^{14}O$ before startup and 9.9 x 10^{-3} μc/liter as $C^{14}O_2$ and 7.7 x 10^{-4} μc/liter as $C^{14}O$ after the unit had been running several days. Techniques for measuring the size of individual small particles on the order of 1-5 microns have been worked out. Particles less than 5 microns have been found on filters from the exhaust system but as yet no measurement of the activity has been made.

[redacted] laboratory work also remains to be done [redacted] samples collected last winter and spring.

Methods Control

[redacted] the collection of fish from the Columbia River for activity studies [redacted] Analyses were made on the following samples at the request of the Health Instrument and Technical Divisions: [redacted] Hanford. A very small amount of activity, on the order of .005 micro[redacted]

1. Seven air samples for total alpha and beta determination
2. Forty-nine air samples for total alpha and beta and active particle determination
3. One ruthenium analysis on a filter paper
4. One grid used for collecting activity
5. One sample of dirt for fission product analysis
6. One smear for ruthenium and total beta analysis

Fifteen additional air filters containing plutonium were analyzed and the ratio of true count to total count determined. These values along with the eighteen from last month gave an average ratio of 1.52 with a standard deviation of 0.19. The clothing contaminated with an alpha emitter was examined by chemical analysis and by decay of the daughter products. The evidence indicates that actinium is definitely the contaminant. An analysis of dirt from the NE corner of the 105-F Building showed Fe^{59}. Samples taken from the 107-B

Basin before startup gave 3 μc/kg of dried material. Analyses indicate that approximately 70% of the activity carried with iron and approximately 20% with calcium. Some investigations into the possible source are underway.

The fluorophotometer in Building 222-U was used for water samples this month. Checks between this instrument and the one in the Bioassay group are satisfactory. Effective June 30, all water samples have been run by an other extraction procedure to eliminate crud. Attempts are being made to use the caustic extraction of vegetation on a routine scale. This program, along with the determination of long lived activity in vegetation, has been limited, however, by lack of manpower. A total of 4476 measurements was made on samples along with 653 control checks on instruments. In addition 12 absorption curves, 573 decay points, and 653 control checks were made.

Physics

The backlog of microscope work has been completed and all exposed neutron films have been read. Four films were exposed at various points on the 100-F pile in December 1947. The highest value obtained was 300 ± 50% neutrons per second per square centimeter near the "B" experimental hole. Several high resolution plates, two impregnated with uranium nitrate and one in contact with a uranium-238 foil were exposed to a total flux of about 10^{10} neutrons per square centimeter. Fifty fields were examined on each of the three slides, but no recognized fission tracks were observed.

The studies with the new extrapolation chamber are continuing. There are still unresolved difficulties connected with the variations in the ion current as the sign of potential on the accelerating electrode is changed.

Instrument Development

One portable poppy was returned to operation by cleaning all parts of the high voltage system. A case which provides for sealing the high voltage system from dust is nearly completed.

A study of 2" x 7" poppy probes indicated that two high voltage wires spaced 3/4 inch apart and ½ inch from the probe sides was worthy of field test. Such a probe gave about 20% geometry at 2300 volts with a plateau of about 150 volts using the 3745 poppy. Much of this work has been hindered by insulator failures under current humidity conditions. The importance of clean, smooth insulator surfaces completely free from machine marks is emphasized by these troubles.

Low voltage thin wall glass G.M. tubes have been found reliable up to about 30,000 c/m. The memory observed when testing with a Berkeley scaler is less marked when using a Higinbotham or Offner, probably because of the greater sensitivity of the former.

Health Instrument Divisions

The contaminated Polonium-Beryllium source was washed in solvent, lacquered and cased in an aluminum capsule, the outside of which gave 24 ± 7 d/m on a smear. Technical Division is now using the source for test purposes.

Preliminary work is being done on a more sensitive D. C. amplifier to permit reducing ion chamber volume.

Development of a nylon window, argon flow proportional beta probe for hand counters has been started.

A proportional alpha hand probe with nylon front and back screens has been given to the Instrument Division for testing in a four-fold alpha hand counter.

The prototype of the C. P. probe survey meter has been given to the Instrument Division for use in connection with Project C-219.

Calibrations

The routine calibrations were:

	Number of Calibrations	
	June	July
RADIUM CALIBRATIONS		
Fixed Instruments		
Gamma	480	568
Portable Instruments		
Alpha	53	43
Beta	94	82
Gamma	429	414
X-Ray	0	0
Neutron	3	0
Total	579	539
Personnel Meters		
Beta	861	1,107
Gamma	9,560	9,110
X-Ray	9,155	9,165
Neutron	---	---
Total	18,776	19,382
GRAND TOTAL	19,835	20,489

BIOLOGY DIVISION

Zoology

1. Chronic Toxicology of I^{131} in Stock Animals

A four year old ewe was sacrificed after a 43-day period of feeding 10 μc/day. The thyroid weighed 5.6 g. and was apparently histologically normal. Activities in μc/kg. of tissues assayed are listed in order of specific activities:

(1)	Thyroid	800	(5)	Lung	0.06	(9)	Spleen	0.02
(2)	Feces	0.1	(6)	Liver	0.04	(10)	Pancreas	0.02
(3)	Kidney	0.1	(7)	Ovary	0.04	(11)	Bone	0.008
(4)	Blood	0.07	(8)	Adrenal	0.04	(12)	Muscle	0.006

Chloroform intoxication following a bloodletting operation caused the death of one control ewe. It was of interest to note the size of its thyroid, which weighed 14 g.

The second in a series of pilot experiments for the animal farm was initiated on August 2nd. Two 2-year old ewes are being used, one serving as the control, the other being fed 10 μc/day.

The 3 and 5 μc which have been fed daily to five young rabbits have been changed to 1 μc/day for three animals and 10 μc/day for the remaining two.

Two hens are being fed water containing 0.4 μc/litor. This concentration approximates the old tolerance amount for feed and water combined.

2. Biological Monitoring

Biological Specimens Monitored

Animals and Tissues Assayed	Location Collected and Activities (μc/kg)
Jack rabbit	Between 200-E and 200-W
Thyroid[1]	4
Lung[2]	1×10^{-3}
Jack rabbit	S.E. quadrant of 200-E
Thyroid[1]	7
Lung[2]	4×10^{-3}
Bull snake	200-E
Muscle[3]	0.1
Badger	200-E
Soft tissue	$<8 \times 10^{-3}$

Ducks, domestic	100-F, River
Thyroids	0.2
Other tissues	<0.02
Raven	Wahluke Slope
Thyroid	0.5
Other tissue	$1\text{-}7 \times 10^{-2}$
Killdeer	200-N, near ditch
Thyroid	1
Bone	0.3
Duck	200-N, R ditch
Soft tissue	~ 0.03 av.
Whole bone	0.2
Bone shaft	0.3
Spongy bone & marrow	<0.04
Algae	200-N, R ditch
β activity	20
α activity	15 d/m/g.
Water	200-N, R ditch
β activity	$\sim 5 \times 10^{-4}$
α activity	0 d/m/g.

1. Thyroid activities are about 20-30 times less than those found in equivalent specimens 18-24 months ago, presumably due to increased cooling of slugs.

Special Absence Allowance Requests

2. Data on activity in lungs of animals captured in this vicinity are being gathered routinely in attempts to determine the presence of hot specks.

3. Decay data indicate activity is due to I^{131}.

4. A half-life comparable with that of Sr^{89} is suggested by decay data and deposition. Additionally, 1-2 d/m/g α activity was found in most tissues.

Aquatic Biology

1. Effect of Pile Effluent Water on Aquatic Life

The monitoring and associated tests in which chinook salmon have been subjected to retention basin water, to area effluent water diluted with from 5 to 250 parts of river water, to dichromate at a strength of 2 p.p.m., to pre-pile process water, and to ferric sulfate sludge were terminated on July 27. These studies were begun in November, 1947 with eggs which were partially developed. In general, the deleterious effects of pile

effluent water is due to chemicals, and the radioactivity present contributes only slightly if at all. A summary report will be prepared.

One of the six groups of young trout fry propagated from adult rainbow trout which have been held in retention basin water are being reared in a 1:50 dilution of area effluent water.

2. Biological Chains

A population of snails have been held in retention basin water for several weeks and are now to be used as a radioactive food source for small shiners.

Crayfish and small carp are being separately exposed to retention basin water and will later be used as active food for young trout.

Algae, insect larvae, and associated lower forms of aquatic life growing in 25 per cent retention basin water will soon be suitable as food for small minnows or carp which are being held in reserve for this test.

3. Radiobiological Survey

A progress report on the amounts of radioactivity accumulated by organisms living on the bottom of the river is nearing completion. As soon as this is finished, extensive field sampling will be resumed. A considerable amount of laboratory work also remains to be done on samples collected last winter and spring.

Routine collection of fish from the Columbia River for activity studies has been resumed on a bi-weekly basis. On July 13th, four adult blueback salmon were captured in the net at Hanford. A very small amount of activity, on the order of .005 micro-curies per kilogram, was found in the tissues counted.

ACCOUNTING DIVISIONS

JULY 1948

GENERAL

During July, further efforts were extended towards working out the problems in connection with the decentralization of the Accounting Divisions. The following organization announcements were issued during the month:

J. P. Holmes, Assistant to Department Comptroller
P. D. Lee, Accountant, Design and Construction Divisions, Hanford Works
C. E. Reed, Accountant, Manufacturing Division, Hanford Works
K. L. Robertson, Accountant, General Division

H. A. Root was appointed Community Accountant, Richland, Washington, in May, effective July 1, 1948.

During the month the "Proposed Cost Control System" for Hanford Works manufacturing and contributing services divisions was completed by T. R. Evans, and was presented to the divisions affected and to the Atomic Energy Commission. It is expected that the system will be made effective on September 1, 1948.

During the latter part of July representatives of the auditing firm of Touche, Niven, Bailey and Smart completed a "Proposed Accounting System for Richland Village and Kadlec Hospital Activities" and issued a report dated August 2, 1948.

As a result of Salary Rate Revision for non-exempt employees, effective July 19, 1948, as announced by H. W. Instruction Letter No. 94, it was necessary that a greatly increased volume of work be processed during the month by the Weekly Payroll Division.

Government reimbursements are current. Following is comparison of unreimbursed charges as of July 31, 1948 with June 30, 1948.

	June 30, 1948	July 31, 1948
Billed on Public Vouchers	$ 5 289 709	$ 7 802 026
Submitted on Pre-Billing Audit Vouchers	3 288 586	3 136 086
Unbilled	3 269 362	4 483 001
	$11 847 657	$15 441 113

STATISTICS

Employees and Payrolls	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	8 658	1 737	6 921
Additions and transfers in	282	43	239
Removals and transfers out	(278)	(32)	(246)
Transfers from Monthly to Weekly Payroll	--	--	--
Transfers from Weekly to Monthly Payroll	--	29	(29)
Employees on payroll at month end	8 662	1 777	6 885
Gross amount of payroll - July (4 weeks)	$2 937 914	$840 985	$2 096 929
Gross amount of payroll - June (5 weeks)	$3 312 408	$805 173	$2 507 235
Annual going rate of payroll - July	$38 414 028	$10 083 900	$28 330 128
Annual going rate of payroll - June	$36 512 519	$ 9 715 377	$26 797 142
Average salary rate per hour - July	$1.864	$2.542	$1.693
Average salary rate per hour - June	$1.820	$2.515	$1.648

Overtime payments

Weekly Payroll	June	July
Number	14 153	12 240
Amount	$273 337	$243 673
Monthly Payroll	$ 50 480	$ 63 189

Number of changes in Salary Rates and Job Classifications and transfers between Divisions: 813 | 7 943*

*Includes 6 955 Revisions of non-exempt salary classifications effective 7/19/48

Employee Plans

Pension Plan

	June	July
Number participating at beginning of month	4 615	4 754
New participants and transfers in	174	217
Removals and transfers out	(35)	(44)
Number participating at month end	4 754	4 927
% of eligible employees participating	97.4%	97.2%

Employees Retired	July	Total to Date
Number	1	28
Aggregate Annual Pensions including Supplemental Payments	$408	$4 831
Amounts contributed by employees retired	$131	$1 335

Group Life Insurance

	June	July
Number participating at beginning of month	5 540	5 594
New participants and transfers in	142	169
Cancellations	(18)	(21)
Removals and transfers out	(70)	(81)
Number participating at month end	5 594	5 661
% of eligible employees participating	74.2%	74.2%

Accounting Divisions

Employee Plans (continued)		
Insurance Claims	July	Total to Date
Number of deaths	--	13
Amount of Insurance	--	$73 023
Amount contributed by employees	--	$ 603

Group Disability Insurance - Personal	June	July
Number participating at beginning of month	6 684	6 785
New participants and transfers in	192	236
Cancellations	(7)	(9)
Removals and transfers out	(84)	(95)
	6 785	6 917
% of eligible employees participating	90.6%	90.6%

Group Disability Insurance - Dependent		
Number participating at beginning of month	4 079	4 131
Additions and transfers in	99	62
Cancellations	(10)	(11)
Removals and transfers out	(37)	(41)
Number participating at month end	4 131	4 141

Group Disability Insurance - Claims		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	80	69
Daily Hospital Expense Benefits	79	64
Special Hospital Services	77	62
Surgical Operations Benefits	50	38
Dependent Benefits Paid		
Daily Hospital Expense Benefits	104	92
Special Hospital Services	107	97
Amount of claims paid by insurance company:		
Employee Benefits	$8 474	$8 798
Dependent Benefits	$3 814	$3 505
Total	$11 288	$12 303

Group Disability Insurance - Premiums		
Personal - Employee Portion	$11 559	$11 755
- Company Portion	7 021	7 117
- Total	$18 580	$18 872
Dependent - Employee Portion	$ 3 717	$ 3 888
- Company Portion	404	302
- Total	$ 4 121	$ 4 190
Grand Total	$22 701	$23 062

Annuity Certificates (For du Pont Service)	July	Total to Date
Number issued	2	52

Employee Plans (Continued)

U. S. Savings Bonds	June	July
Number participating at beginning of month	3 450	3 701
New authorizations	310	198
Voluntary cancellations	(43)	(83)
Removals and transfers out	(16)	(28)
Number participating at month end	3 701	3 788
% participating	42.5%	43.7%
Bonds issued - maturity value	$222 175	$208 525
- number	5 786	5 246
Refunds issued	39	76
Revisions in authorization	278	107

Suggestion Awards	July	Total to Date
Number of Awards	--	155
Total amount of Awards	--	$1 585

Security Slogan Awards		
Number of Awards	--	7
Total amount of Awards	--	$175

Employee Sales Plan	July		
	Total	Major Appliances	Traffic Appliances
Certificates issued	446	79	367
Certificates voided	36	8	28

Salary Checks Deposited	June	July
Weekly	1 037	1 029
Monthly	830	830
Total	1 867	1 859

Special Absence Allowance Requests		
Number Submitted to Pension Board	5	7

Absenteeism (Weekly Paid Employees)	1947	1948
January 1 to July 31	1.77%	2.29%

Accounting Divisions

Subcontractors' Payrolls Number of Subcontractors' Employees on Payroll At End of Month	June	July	
Cost-Plus-A-Fixed-Fee Subcontractors			
Guy F. Atkinson Company and J. A. Jones Construction Company	9 704	9 490	
Sub-subcontractors			
Newbery-Neon Electric Company	723	604	
Urban, Smyth & Warren Company	1 057	1 080	
*Newport, Kern & Kibbe	13	20	
*Mehring & Hanson	33	0	
*V. S. Jenkins	24	0	
*Graysport Construction Company	130	101	
*E. L. Knight Electric Company	13	0	
*Pioneer Sand & Gravel Company	0	3	
*Rust Engineering Company	7	8	
The Kellex Corporation	456	431	
Giffels & Vallet, Inc.	179	191	
National Carbon Company	274	275	
C. C. Moore & Company, Engineers	63	147	
J. A. Terteling & Sons, Inc.	587	910	
Sub-subcontractors			
*Graysport Construction Co.	33	0	
*Estep Electrical Co.	9	7	
*J. P. Head Plumbing Co.	25	22	
Morrison-Knudsen Co., (Tank Farm)	770	544	
Sub-subcontractors			
Trowbridge & Flynn Electric Company	17	10	
Morrison-Knudsen Co., (Track Maintenance)	232	218	
Mc Neil Construction Company	568	929	
Sub-subcontractors			
*Holert Electrical	10	21	
*Arnold & Jeffers	27	59	
*Fox Metal Products	6	12	
Lump Sum Subcontractors			
C. C. Moore & Company, Engineers	3	5	
John L. Hudson	5	1	
J. Gordon Turnbull	80	75	**
Curtis Gravel Company	8	14	
DeWitt C. Griffin & Associates	3	1	
A. C. Grant	0	10	
Strasser Drilling Co.	4	1	
Kelly Wells Co., Inc.	4	3	
A.B.C. Roofing	0	7	
D. L. Cooney	0	52	
Nettleton, Baldwin, Sound Construction Co.	564	818	
Sub-subcontractors			
Curtis Sand & Gravel Co.	27	35	
Paul Thorgaard Plumbing	72	57	
Chris Berg	30	52	
Holert Electrical Co.	13	11	

Subcontractors' Payrolls (Continued)	June	July
Pacific Roofing	13	35
Central Service	8	7
Charles Swanson	9	26
Taylor Bros.	7	13
Builder's Insurance Co.	3	4
X-Ray Products Co.	1	0
Total	15 814	16 309

* Lump Sum Sub-subcontractor operating under a Cost-Plus-A-Fixed-Fee Subcontractor

** Estimated

SUMMARY OF PAYROLL REIMBURSEMENTS TO SUBCONTRACTORS

Subcontractor	Payrolls		Taxes & Welfare Plans (Employer's Portion)	
	This Month	Total To Date	This Month	Total To Date
Atkinson-Jones	$4 116 288.43	$26 439 635.51	$379 556.93	$ 853 677.80
Newbery-Neon	391 989.36	1 967 212.84	32 650.06	59 716.80
Urban, Smyth and Warren	541 129.59	3 245 301.00	52 360.57	100 750.72
Morrison-Knudsen	321 116.26	1 863 032.96	40 535.34	59 890.92
Trowbridge & Flynn	10 943.35	60 800.70	1 185.55	2 003.85
J. A. Terteling	257 979.91	711 632.17	17 655.43	19 107.43
C. C. Moore	27 432.28	82 297.26	.00	.00
Mc Neil	243 856.68	466 477.02	8 242.48	8 242.48
Kellex	223 603.02	773 593.74	10 238.62	37 301.49
National Carbon	737.00	8 619.00	.00	120.00
Giffels & Vallet	89 151.04	404 965.96	.00	.00
Totals	$6 224 226.92	$36 023 568.16	$542 424.98	$1 140 811.49

Accounting Divisions

Subcontractors' Payrolls (Continued)

Subcontractor		SUBCONTRACTOR'S PAYROLLS AUDITED			
		Period Covered		Gross Amount	
		This Month	Total to Date	This Month	Total to Date
Atkinson-Jones		6/12/48 to 7/10/48	7/25/47 to 7/10/48	$4 152 464.57	$25 140 610.29
Newbery-Neon		6/12/48 to 7/10/48	10/7/47 to 7/10/48	388 679.49	1 836 984.11
Urban, Smyth and Warren		6/12/48 to 7/10/48	10/8/47 to 7/10/48	545 729.34	3 070 938.40
Morrison-Knudsen		6/20/48 to 7/24/48	12/4/47 to 7/24/48	313 117.69	1 865 262.26
Trowbridge & Flynn		6/20/48 to 7/24/48	1/14/48 to 7/24/48	8 365.87	60 847.85
J. A. Terteling		6/21/48 to 7/25/48	3/1/48 to 7/25/48	255 959.50	730 731.96
C. C. Moore		6/24/48 to 7/21/48	12/17/47 to 7/21/48	30 472.12	92 098.59
Mc Neil		6/28/48 to 7/25/48	4/23/48 to 7/25/48	244 102.80	469 100.77
Kellex	(1)	5/15/48 to 6/30/48	9/15/47 to 6/30/48	223 603.02	773 593.74
National Carbon	(1)	7/1/48 to 7/31/48	8/1/47 to 7/31/48	737.00	8 619.00
Giffels & Vallet	(1)	6/19/48 to 7/3/48	10/2/47 to 7/3/48	89 864.59	412 560.69
Total				$6 253 095.99	$34 461 347.66

(1) Audited by Atomic Energy Commission

Accounting Divisions

General Accounting

Payments made to Subcontractors thru July 31, 1948

	Contract No.	Commitment To Date	Amount Paid To Date	Amount Withheld 7-31-48
Morrison-Knudsen Co., Inc.	G-110	$1 807 394.25	$1 807 394.25	Retainer Pd.
X-Ray Products Corp.	G-115	59 238.40	59 238.40	Retainer Pd.
Atkinson-Jones CPFF	G-133	63 830 458.93		
Payrolls			32 666 294.67	$ 478 450.41
Other (1)			22 877 371.08	-0-
Lone Pine Roofing Co.	G-134	52 875.13	52 875.13	Retainer Pd.
National Carbon Co., Inc.CPFF	G-135	1 873 000.00		
Payrolls			8 739.00	-0-
Other (2)			2 112 266.74	-0-
Graybar Electric Co.	G-136	422 981.00	87 785.50	-0-
G. A. Pehrson and Associates	G-137	18 700.00	15 895.00	-0-
John S. Villesvik	G-138	3 013.50	3 013.50	-0-
H. Brandt Gessel and Associates	G-139	10 766.50	10 517.00	249.50
DeWitt C. Griffin and Associates	G-141	205 524.00	191 642.55	11 983.95
John L. Hudson and Associates	G-142	4 974 789.63	4 970 305.27	-0-
Catlow Transport Co.	G-143	313 640.92	313 640.92	Retainer Pd.
Northwest Hauling Co.	G-144	155 403.07	155 403.07	Retainer Pd.
Sperry Products Co.	G-147	1 875.00	1 875.00	-0-
The Kellex Corporation CPFF	G-148	1 434 246.36		
Payrolls			810 895.23	-0-
Other (3)			760 296.09	-0-
Catlow Transport Co.	G-149	25 426.00	25 426.00	Retainer Pd.
J. Gordon Turnbull, Inc. Graham, Anderson, Probst and White as Joint Venturers	G-150	529 413.00	-0-	-0-
Giffels and Vallet, Inc. CPFF	G-151	492 395.64		
Payrolls			404 965.96	7 594.73
Other (4)			109 050.87	-0-
Fixed Fee		270 000.00	63 860.40	7 095.60
D. A. Whitley Co.	G-152	27 046.76	27 046.76	-0-
Roy L. Bair Co.	G-153	34 447.00	34 447.00	-0-
Sturm Elevator Co.	G-155	4 145.00	4 145.00	-0-
C. C. Moore and Co., Engineers	G-157			
Payrolls CPFF		92 098.59	82 297.26	9 801.33
Lump Sum		304 287.00	92 523.87	10 280.43
Sturm Elevator Co.	G-158	2 218.00	2 218.00	-0-
Curtis Sand and Gravel Co.	G-159	305 000.00	64 550.14	7 172.24
Morrison-Knudsen Co., Inc.CPFF	G-160			
Payrolls		2 958 793.67	1 985 728.43	2 276.45
Other			861 518.19	-0-
Fixed Fee		95 000.00	59 850.00	6 650.00
J. A. Terteling and Sons,Inc. (5)	G-161	450 000.00	200 000.00	-0-
Haughton Elevator Co.	G-165	338 304.00	-0-	-0-
Chicago Bridge and Iron Co.	G-166	35 454.00	35 454.00	Retainer Pd.
Great Lakes Carbon Corp.	G-167	300 970.56	300 970.56	-0-

General Accounting

Payments made to Subcontractors thru July 31, 1948 (continued)

	Contract No.	Commitment To Date	Amount Paid To Date	Amount Withheld 7-31-48
Nettleton-Baldwin-Anderson and Sound Construction Co.	G-172	$9 727 481.00	$1 098 052.74	$ 122 005.86
J. A. Terteling and Sons, Inc. CPFF	G-173	1 402 363.21		
Payrolls			730 739.60	19 099.79
Other			152 253.39	-0-
X-Ray Products Corporation	G-175	129 000.00	121 115.53	6 450.00
Morrison-Knudsen Co., Inc. CPFF	G-178	1 159 359.93		
Costs (Track Maintenance)			1 159 359.93	-0-
Fixed Fee (6)		41 590.00	35 155.00	6 435.00
Combustion Engineering Co.	G-182	715 827.00	-0-	-0-
Link Belt Company	G-183	223 527.00	-0-	-0-
Pacific Telephone and Telegraph Co. CPFF	G-186	14 444.90	13 844.90	-0-
Graysport Construction Co.	G-187	20 500.00	18 450.00	2 050.00
McNeil Construction Co. CPFF	G-190	1 725 861.08		
Payrolls			474 719.50	2 623.75
Other			107 606.05	-0-
R. J. Strasser Co.	G-191	11 590.20	-0-	-0-
Pittsburgh Des Moines Steel Co.	G-195	17 650.00	-0-	-0-
Don L. Cooney, Inc.	G-210	192 781.00	-0-	-0-
Scott Buttner Electric Co.	G-211	133 187.00	-0-	-0-
		$96 944 068.23	$75 170 797.48	$700 219.04

(1) Amount Paid includes Provisional Reimbursement in the amount of $19 716 773.16 of which $19 265 126.89 was liquidated by audited Atkinson-Jones billings.

(2) Amount Paid includes $1 000 000.00 in advances.

(3) Amount Paid includes $500 000.00 in advances.

(4) Amount Paid includes $50 000.00 in advances.

(5) Amount of Commitment estimated.

(6) Amount withheld includes $2 640.00 withheld by du Pont Company prior to September 1, 1946.

Construction Commitments and Expenditures	Commitments	Expenditures
July 1, 1947 thru June 30, 1948	$ 115 254 543.00	$ 78 255 587.00
July 1, 1947 thru July 31, 1948	$ 124 810 327.00	$ 88 187 776.00

Accounting Divisions

General Accounting

	June	July
Amount of Accounts Payable Vouchers Entered		
General Electric	$12 463 959.08	$13 736.813.55
du Pont	103.59	668.42
Total	$12 464 062.67	$13 737 481.97
Amount of Checks Issued		
General Electric	$12 519 542.00	$14 303 623.11
du Pont	1 152.31	605.50
Total	$12 520 694.31	$14 304 228.61
Number of Checks Issued		
General Electric	3 882	4 171
du Pont	6	2
Total	3 888	4 173
Public Vouchers (1034) Submitted to AEC		
Vouchers not reimbursed at beginning of month	$ 8 020 563.12	$ 5 289 708.60
Vouchers submitted for reimbursement during month	16 221 511.14	15 709 081.33
	24 242 074.26	20 998 789.93
Vouchers reimbursed during month	18 952 365.66	13 176 764.12
Vouchers not reimbursed at end of month	$ 5 289 708.60	$ 7 822 025.81
Public Vouchers (1034) Submitted to AEC		
Number of vouchers not reimbursed at beginning of month	182	130
Number submitted during month	478	496
	660	626
Number reimbursed during month	530	418
Number of vouchers not reimbursed at end of month	130	208
Public Vouchers not Submitted to AEC		
Pre-Audit Vouchers (1035) Issued	$ 3 288 586.28	$ 3 136 086.06
Pre-Audit Vouchers (1035) not Issued	3 315 812.65	4 483 001.19
Total	$ 6 604 398.93	$ 7 619 087.25
Number of Pre-Audit Vouchers Issued Awaiting AEC Approval	112	62

Accounting Divisions

General Accounting

Cash Receipts - General Electric	June	July
Accounts Receivable		
U. S. Government	$18 952 365.66	$13 176 764.12
Rents	81 887.39	114 385.49
Hospital	59 472.94	56 397.30
Telephone	5 532.67	6 827.42
Miscellaneous	2 421.56	6 873.71
Employee Sales	1 781.09	2 993.39
Bus Fares	9 201.20	9 383.50
Educational Program	204.65	-0-
Sale of Furniture	9 741.40	881.69
All Other	18 645.53	12 530.30
Total	$19 141 254.09	$13 387 036.92

Cash Receipts - du Pont		
U. S. Government	$3 025.23	$93 558.17
Hospital	60.00	47.50
Vendor's Refunds	45.78	-0-
	$3 131.01	$93 605.67

Cash Advance and Expense Accounts		
Cash Advance Balance at end of month	$38 556.12	$49 518.07
Cash Advance Balances Outstanding over one month	3 272.10	6 253.73
Traveling and Living Expenses		
Paid Employees	$53 245.48	$44 683.24
Billed to Government	52 574.77	44 515.26
Balance in Variation Account at end of month	14 093.65 Cr	13 925.67 Cr

Accounting Divisions

General Accounting

Hospital Accounting	June	July
Accounts Receivable Balance at Beginning of Month	$47 897.57	$47 640.21
Total Invoices During Month	82 111.53	83 072.81
Total	$130 009.10	$130 713.02
Less Cash Received and Payroll Deductions	82 368.89	76 625.37
Accounts Receivable Balance at end of month	$ 47 640.21	$ 54 087.65

Property		
Number of Transfer Notices Received	464	382
Number of Items Affected	1 482	2 338
Number of Receiving Reports Classified	10 003	10 498
Number of Receiving Reports Vouchered	1 248	1 202
Number of Items Tagged at beginning of month	189 841	123 438
Number of Items Tagged this Month - Metal	1 801	2 108
Number of Tagged Items dropped from record	(68 204)	(33 123)
Total Tagged Items Recorded	123 438	92 423
Number of Items Recorded in Quantity only		
At beginning of month	104 004	12 545
Items added to record during month	24 972	8 535 *
Dropped from record during month	(116 431)	(8 004)
Total Items Recorded in Quantity	12 545	13 076
Total Items on Record	135 983	105 499

* Includes adjustment of 7,915 in Quantity figures.

PERSONNEL AND ORGANIZATION	June	July
Number of employees		
On Payroll at beginning of month	265	279
Removals and transfers out	(10)	(22)
Additions and transfers in	24	18
Number at end of month	279	275
Net increase (or decrease) during month	14	(4)
% of terminations and transfers out	3.8%	8.0%
% of absenteeism	3.0%	1.6%

Reasons for decrease of 4 in number of Accounting Division employees during July are as follows:

General: One employee (C. E. Reed) assigned to Manufacturing Division.
One employee (P. D. Lee) transferred from Locke Inc. and assigned to Design & Construction Divisions.

General Accounting: Net increase of eleven employees.

Eleven new hires
One (B. M. Dobbs) transferred from Syracuse
One transfer from Employee and Community Relations Division
One transfer from Service and Security Division
One transfer to Electrical Division
One transfer to Medical Division
One termination

Weekly Payroll: Net increase of two employees

Three new hires
One transferred to Technical Division

Subcontractors' Payroll: All employees, 15 in number, to Construction Accounting

Cost: Decreased by one termination

Injuries:	June	July
Major	0	0
Sub-major	0	0
Minor	4	4

PERSONNEL AND ORGANIZATION (continued)

Number of Accounting Division employees and open employment requests as of August 1, 1948 were as follows:

	Number of Employees			Open Employment Requests			
				Replacements			
	Non-Exempt	Exempt	Total	For Employees Removed	For Employees Leaving	Additions	Total
General	3	4	7	0	0	0	0
General Accounting	139	13	152	1	0	7	8
Weekly Payroll	60	6	66	1	1	3	5
Monthly Payroll	10	2	12	0	0	0	0
Cost	31	5	36	0	0	1	1
Methods	0	2	2	0	0	0	0
Total	243	32	275	2	1	11	14

Open replacements may be summarized as follows:

Steno and Typist	B	1
General Clerk	E	1
Office Machine Operators	B	3
General Clerk	D	6
General Clerk	A	2
Clerical Working Leader		1
Total		14

SECTIONAL ACTIVITIES

Cost

A proposal for a revised Community cost accounting procedure was submitted by representatives of Touche, Niven, Bailey, and Smart. Preliminary review of the proposal indicated that information required for proposed reports and cost control could be obtained with less detail than incorporated in their proposal. Further study of this possibility was started, with the aim of beginning the revised procedure September 1, 1948, and re-costing July and August Community reports, in accordance with revised report form.

The Manufacturing Divisions proposal for revising Instructions Letter No. 30 (Work Order Procedure) was reviewed and Cost Section's suggestions written into the procedure.

The proposed cost accounting system for Manufacturing and General Divisions as prepared by T. R. Evans was submitted to the Divisions affected. As a result of review by the Divisions, considerable work was required in revising the proposal to fit the cost control requirements of various Divisions.

General Accounting

Accounts Payable

The number of accounts payable vouchers entered during July increased over previous months as did the amount of money involved. Vouchers entered totaled $13 736 813 and accounts payable disbursements totaled $14 303 623.

Vouchers in process in the Accounts Payable Section at the end of July numbered 1,737 and totaled $2 380 518.

Provisional reimbursements continued to be made to Atkinson-Jones. In July these payments totaled $1 316 355. The balance of $547 591 in the A-J Advance Account is lower than it has been at any time since provisional reimbursements were begun. This was due to a decreased amount of advances made, together with the submission of work for approval in better condition.

Accounts Receivable

Rent

Charges during July for rents amounted to $451 836. Collections in the form of cash receipts amounted to $114 385 and by payroll deductions $243 842.

Only a small number of additional living facilities were made available. New leases received totaled 276 and cancellations numbered 139. Dormitory rooms, barracks, and trailer spaces reflected little change.

General Accounting

U. S. Government

Charges to the U. S. Government represent billings of approved contract disbursements amounted to $15 709 081. The non-reimbursed balance due from the government of $7 882 026 does not include any items billed prior to the last three days of the month.

Telephone

Telephone charges amounted to $18 106 which included billings for 2,395 telephones and approximately 18,500 toll calls.

Hospital Accounting

In July arrangements were made with the Washington State Welfare Department whereby payments for services rendered by the Kadlec Hospital and the North Richland Medical Center would be made by them for eligible cases.

A comparison of invoices issued for the months of June and July is as follows:

	Number of Invoices Issued		Amount of Invoices Issued	
	Cash	Charge	Cash	Charge
June	9519	3267	$42 620	$39 491
July	9963	3205	$44 172	$38 896

In view of the above it can be seen that efforts to increase cash payments for services rendered has met with results. However, during July the decrease in payments on-account resulted in an increase in the receivable balance from $47 640 in June to $54 088 in July.

Property

As of July 31, the elimination of Class B items valued at less than $50. from property records was completed. A total of 296,750 items have been eliminated.

New items received during the month at all locations were very light and were promptly tagged and recorded upon receipt. Additions to property records comprised 1,954 items tagged with metal tags, 620 items added in quantity only which were not tagged, and 154 instruments, making a total of 2,728 additions. There are now 105,499 items recorded on property records.

Inventory adjustment work was resumed in three outlying areas. Nine employees are engaged in this work.

Total employees in this section is 33.

Accounting Divisions

General Accounting

Cash Advances and Cash Change Funds

Advances for traveling and living expenses amounted to $51 075 during July, employees accounted for $40 113, and the outstanding balance in the Cash Advance account at the end of the month was $49 518. This outstanding balance is made up of 154 accounts, 25 of which are over 30 days old.

Cash Change Funds number 38 and total $4 635.

Billings to the Government

During July reimbursable charges entered amounted to $16 412.108 and billings to the government amounted to $15 709 081. Unbilled items, not including accrued charges for which disbursement has not yet been made, but including vouchers submitted to the AEC Audit Branch in the amount of $3 136 086, amount to $7 619 087.

Special Assignments

Final retention payments were made to John L. Hudson & Associates with releases being received from each in connection with Subcontract G-142. Final release was also executed and received by us from John L. Hudson and the Associates, releasing us from all claims of the principals in connection with the above Subcontract.

All expenses of the principals were paid, as well as all other expenses of the project that could be determined at the time. Remaining expenses to be paid include telephone, insurance (after final calculation by Insurance Co.), lost typewriter and adding machine on rental basis, and other miscellaneous items including final tax adjustments.

Other items not closed, but in process of closure, include insurance claim unpaid ($825.92), insurance deposit ($1 500.00) refund on propellor blades ($150.00) refund on taxes ($702.00) and unearned insurance premiums. As most of these items were taken into consideration as receivables on the Hudson records, it is necessary for collection thereof, to make final accounts payables payments. Therefore, as the payables were due and payable, an advance was made to Hudson of $3 028.12, which will be refunded upon receipt of the receivables. Check made payable to General Electric for this amount is being held in our possession.

One Hudson employee was retained at the Hudson office to handle correspondence and other details in connection with final closure of the accounts. Reimbursement has been made for this employee's payrolls until August 14, 1948; checks being distributed weekly by this office.

The Hudson records were transferred to the Record Hutment maintained by General Electric, except for those records necessary for final closure, which will be transferred upon completion thereof.

General Accounting

Special Assignments (continued)

Inventories of Hudson equipment and materials have been completed and are being reconciled with Construction Cost records for charges to other Subcontractors and accounts.

Closure of the Hudson Account is being expedited as rapidly as possible.

Payments to John L. Hudson & Associates under Subcontract G-142 through July 31, 1948 may be summarized as follows:

Total progress payments made to John L. Hudson & Associates under the original contract amount to	$3 288 810.48
Additional payments were made through March 31, 1948 under the Supplemental Agreement to Subcontract G-142, dated March 6, 1948 in the amount of	379 645.20
Payments made under the Supplemental Agreement in April amounted to	725 710.81
Payments made under the Supplemental Agreement in May amounted to	356 926.22
Payments made under the Supplemental Agreement in June amounted to	29 810.45
Payments made under the Supplemental Agreement in July amounted to	192 430.23
Total payments made to John L. Hudson & Associates through July 31, 1948.	$4 973 333.39

On July 1, the responsibility of the Records Hutments was transferred to the Plant Security and Services Division. Transfer of one employee who acts as custodian of these records was also made.

Receipt of the balance of du Pont Operations Records was recently accomplished. The master index covering all Operations Records belonging to du Pont was completed, checked and turned over to the du Pont representative at this plant.

Conference was held with National Carbon Company at Morganton, North Carolina during the week ending July 17, in regard to distribution of operating costs, relative to commercial work being performed at Morganton by National Carbon, jointly, in connection with Subcontract G-135. L. P. Murray attended the Conference as G. E. Accounting Representative.

Payrolls

The following "Request for Reimbursement Orders" have not yet been approved by the Atomic Energy Commission:

Date of Request	Date Transmitted to Commission	Items Covered by Request
8/26/47	8/27/47	Seven exempt job classifications for Design and Construction
8/26/47	8/28/47	Five exempt job classifications for Construction Purchasing
8/26/47	8/28/47	Exempt job classifications for Expediting Supervisor and Expeditor
9/10/47	9/10/47	Exempt job classification for Construction Purchasing
6/22/48	6/22/48	Bonus payments in connection with Patent Applications filed on inventions by employees

The AEC Audit Section has not completed audit of the Monthly Payroll for June. Complete audit by the AEC Audit Section of Weekly Payrolls for June revealed the following errors:

1. There were seven cases of hours posted incorrectly on the Payroll Journal.
2. Nine postings were illegible on the Government copy of the payroll.
3. There were two cases of deductions posted incorrectly, but payments were correct.
4. There was one salary rate shown incorrectly on the payroll although no error in payment occurred.
5. There was one error in calculation of the gross payment resulting in an underpayment to the employee amounting to $1.20.
6. Notations on the Payroll Journal were not clear, incorrect or omitted in 23 instances.
7. One page total of the Net Amount was omitted on Government copy of the Payroll Journal.
8. The total rent deduction for one division was posted in the wrong column of the Payroll Summary.
9. One page of the Payroll Journal was numbered incorrectly.

Weekly payrolls have been reimbursed by the government through the month of June 1948. Monthly payrolls have been reimbursed through the month of May.

Conversion to National Cash Register Payroll Posting Machine for posting the Monthly Payroll in July necessitated overtime to transfer "Year to Date" figures from the old earnings record cards to the new earnings record cards.

Payrolls (continued)

Increase in planned overtime worked and the revision in the method of calculating vacation payments, caused considerable increase in the work in the Monthly Payroll Division. Under the new procedure for reporting attendance of monthly paid employees, attendance reports are due in Monthly Payroll Division on the first working day following the fifteenth of the month. In the month of July there were several errors in reporting planned overtime worked and many of the attendance reports were received late.

The revision of job classifications and rates of weekly paid non-exempt employees effective July 19, 1948, caused an increased load in the Weekly Payroll Division due to the fact that the complete change had to be made between pay days. Calculation of isolation pay in connection with the revised rate structure has created a large volume of additional work. Inasmuch as the isolation pay is added to the new job rate rather than the actual rate, it is necessary to show two rates on the addressograph plates and Payroll Journal for all employees whose actual rate is greater than the new job rate.

Under the revised vacation plan, vacation payments are based on the number of hours worked for the eight weeks period immediately preceding the last week worked prior to the start of vacation. This places an additional burden of work on the Payroll Divisions due to the fact that the hours for the week prior to the last week worked are not available until Monday of the week in which payment is to be made.

Subcontractors' Payrolls

During July, a project wide Reimbursement Order was received from the Atomic Energy Commission. This Reimbursement Order supersedes the individual Reimbursement Orders previously issued to various Subcontractors and authorizes General Electric to reimburse all construction cost-plus-a-fixed fee subcontractors in accordance with the provisions provided therein. All future changes affecting construction cost-plus-a-fixed fee subcontractors are to be approved in a similar manner thereby eliminating the past requirements that each subcontractor submit individually a Request for Reimbursement Order.

Approval was received during the month from the Atomic Energy Commission covering increased rate of pay to Linemen. This approval, effective April 22, 1948, resulted in the Atkinson-Jones adjustment payroll No. 42 A, amounting to $29 609.93, which was disbursed on July 30, 1948.

During July, approval was received from the Atomic Energy Commission to reimburse Atkinson-Jones for payment of 1% Electrical Labor Payroll Assessment to National Electrical Benefit Fund.

Subcontractors' Payrolls (continued)

The Appendix C to the National Carbon Company Sub-Contract G-135 was approved by the Atomic Energy Commission during the month, however, no payrolls have been received from Morganton, North Carolina, and reimbursement to National Carbon Company is still limited to only those payrolls disbursed by their New York Office. Requests for Reimbursement Orders received from National Carbon Company covering a general adjustment in the rates of pay for hourly employees and a revision in the shift bonus paid to hourly employees working continuous shift operations were submitted to the Atomic Energy Commission for consideration during July.

Payrolls submitted by J. A. Terteling and Sons, Inc. in connection with the termination of the Sub-Contract G-161 were examined during the month.

SERVICE DIVISIONS
SUMMARY - JULY 1948

Employee and Community Relations Division

Open requisitions for additional personnel decreased from 717 at the beginning of the month to 443 at the end of the month. There was a total of 269 added to the payroll, but due to lay-off in Design and Construction Divisions, plus other terminations, the net payroll increase was 36.

There were 1,412 contacts made by Employee Relations Counselors during July. Selective Service record is being prepared on employees nineteen through twenty-five years of age. Sixteen suggestion awards, totaling $115, were granted during the month. Approval was obtained for Travelers Insurance Company to proceed with settlement to all claims under $1,000 resulting from the fire in North Richland barrack.

Consideration is being given to holding "Press Day" at Hanford Works for press representatives West Coast newspapers. Five general news releases and six local news releases were issued by the Public Relations Section. Twenty-two women completed the advanced shorthand course during the month of July.

Purchasing and Stores Division

The work load was considerably lighter compared with the previous month. There were 1,399 purchase orders placed as compared with 1,548 for the previous month. Stores disbursements were $236,823.87 as compared with $304,145.89 for the previous month.

A total of 705 new items were added to Stores stock during the month by means of authorized Stores Stock Requests. No items were eliminated.

The Atomic Energy Commission requested that we assume the responsibility for purchase of radiation detection instruments which have heretofore been supplied through Oak Ridge.

We were requested to cancel several large orders for materials purchased for use in the air decontamination process. It was estimated that cancellation charges will exceed $25,000.

Experimental orders were placed with Victor Industries Corporation and Scovill Manufacturing Company for aluminum cans at prices considerably lower than we have paid heretofore to the Aluminum Company. The Aluminum Company is making a study of its manufacturing methods in an effort to reduce its costs.

Difficulties with our coal suppliers with respect to the size of coal delivered for use in Richland and North Richland have been satisfactorily adjusted.

Labor Relations and Wage Rate Division

The principal activity of this Division has been concerned with placing the revised wage rate plan in effect. All rates for non-exempt personnel were furnished to the Payroll Office and to Division Managers on July 16 prior to the effective date, July 19.

Service Divisions
Summary - July 1948

Records were set up to administer increases in accordance with the new progression schedules or the old schedules, in the event employees were on preferential rates. New job classifications and rates were posted on all divisional records.

Rates and classifications have been reviewed with supervisory personnel in all divisions. Adjustments in classifications have been made in instances where jobs have changed since the original reclassification.

Plant Security and Services Division

Three lost time injuries occurred during the period July 1 through July 20. This increased the total number of lost-time injuries for the year to eight. Minor Injury Frequency Rate remained the same as the previous month.

The Classified Files Section was transferred from the Office Services Division to the Technical Division July 5, 1948.

Shipment of du Pont records has been delayed indefinitely at the request of Construction. This will cancel the half hutment originally planned on as being made available this year for storage of General Electric, sub-contractor and Atomic Energy Commission records; therefore, arrangements must be worked out for better utilization of present space by rearranging some of the du Pont records.

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

ORGANIZATION AND PERSONNEL

Employment

One office helper, formerly assigned to the Investigation Group, terminated voluntarily effective July 12.

Two stenographer and typists D, formerly assigned to the Procurement Group, terminated voluntarily, one effective July 23 and the other effective July 27.

One messenger was added to the Investigation Group, effective July 19, to replace an employee who had been upgraded.

Effective July 1, one typist assigned to the Procurement Group was transferred to the Public Relations Group.

Employee Relations

One typist was transferred from the Training Section to the Employee Relations Section, effective July 1.

Public Relations

One typist was transferred from the Procurement Group in the Employment Section to the Public Relations Section, effective July 1.

Number of employees on payroll	July
Beginning of month	99
End of month	96
Net decrease	3

This decrease resulted from voluntary resignations.

Service Divisions
Employee and Community Relations Division

ACTIVITIES

Employment

The volume of applicants interviewed during the month decreased considerably. There was also a slight decrease in the volume of new cases received for investigation. A total of 1,509 applicants were interviewed during July as compared with 1,939 during June. The number of new cases received for investigation decreased from 632 in June to 605 in July.

At the beginning of the month there were 717 open requisitions for non-exempt personnel, 530 of which were covered by interim commitments. At the end of the month there were 443 open requisitions, 310 of which were covered by interim commitments. In addition, at the beginning of July there was a total of 94 requisitions for exempt personnel, 52 of the persons requisitioned having accepted offers, 32 having been made offers but not accepted and the remainder in the process of investigation. At the end of the month there were 55 open requisitions for exempt personnel, 28 of the persons requisitioned having accepted offers, 22 having been made offers but no acceptances received and the remainder in the process of investigation.

A total of 269 employees were added to the rolls during July. On the other hand, 233 employees were removed, resulting in a total net gain of 36 additional employees.

In view of the difficulty that has been experienced in the past in obtaining qualified stenographers, it is significant to note at this time that at the end of July there were only two open requisitions for personnel in this category and 3 applicants for these positions were in process.

During July, 23 new requests for inter-divisional transfers were received by the Procurement Group. In addition, 28 active cases were also reviewed, making a total of 51 requests in process. Twenty-six personal interviews were held as a result of these requests and 21 transfers were effected. In addition, 25 employees who were given notice of lay off were interviewed and efforts made to locate suitable positions in other divisions for these persons. Of the 16 non-exempt employees involved, 5 were transferred to other divisions and 11 were removed from the roll due to lack of work. Of this latter number, positions in line with their qualifications were offered to a number of these employees and such offers were refused. Of the 12 exempt employees given notice of lay off, 5 had been transferred to other divisions by the end of July. Efforts are still being made to locate openings for the remaining 7.

Employee Relations

During the month of July a total of 1,412 contacts with company employees were made by Employee Relations Counselors. These contacts resulted in 1,855 inquiries summarized as follows:

Policy	473
Military Service	81
Group Life Insurance	216
Group Disability Insurance	246
Pension Plan	54
Suggestion System	20
G.I. Bill of Rights	32
Social Security	25
Employee Sales Plan	251
Housing	132
Community	37
Personal	119
Income Tax	76
Miscellaneous	93
Total	1,855

A total of 227 exit interviews were given to terminating employees during the month of July, and 257 new employees were orientated. Of those employees given orientation, 66% elected to participate in the Group Life Insurance Plan and 75% elected to participate in the Group Disability Insurance Plan.

Employee Relations Counselors attended 2 Area Council Meetings with a total of 24 members in attendance. In addition, 11 meetings were conducted by the Employee Relations Counselors during the month, at the request of supervision, with a total of 454 employees in attendance. The subjects discussed at these meetings included Group Life Insurance Plan, Group Disability Insurance Plan, Wage Rates, Pension Plan and the Employee Sales Plan.

A total of 155 Traffic Appliance Slips were issued by the Employee Relations Counselors in the 100, 200 and 300 areas during the month of July.

The following employee retired during the month of July:

Esmond C. Switzer - Plant Security and Services Division

This employee was interviewed by an Employee Relations Counselor prior to his retirement and fully informed as to all matters pertaining to the benefits he would receive under the Pension Plan.

The following employees on leave of absence because of illness during the month of July were contacted by an Employee Relations Counselor and given assistance in connection with their Group Disability Insurance as well as furnished further information concerning their leaves of absence:

Christopher C. Norbraten - Plant Security & Services Division
Lester Goodenough - Plant Security and Services Division
George K. Late - Maintenance Division
R. F. Webber - Community Division

Selective Service records on all employees between the ages of 19 through 25 who will be subject to draft are almost completed. As soon as information relative to the time and place of regeristration is obtained, it will be passed on to all employees.

Two posters concerning the Group Life Insurance Plan were placed on the bulletin boards throughout the plant during the month of July. These posters are being used in an effort to stimulate interest among employees in this company benefit plan.

Suggestion System

At the end of July the volume of work in the office of the Secretary of the Suggestion System was as follows:

	June	July	Total Since 7-15-1947
Suggestions received and acknowledged	101	102	2,322
Investigation reports completed	128	305	2,048
Awards granted by the Suggestion Committee	18	16	172
Cash Awards	$195	$115	$1,700

The July 30 issue of the Hanford Works NEWS featured a full page article and illustrations covering the Hanford Works Suggestion System.

Insurance

1. Insurance Coverage

Approval has been received from the Atomic Energy Commission for the Travelers Insurance Company to proceed with the settlement of claims resulting from the fire in the North Richland barracks. Accordingly, settlement of all claims under $1,000 is presently in progress.

Statement of account for the month of April from the Travelers Insurance Company, which had been returned because of a $1,000 error, was corrected and has been submitted to the Accounting Division for payment. Statement of accounts from this company for the months of May and June were also approved for payment.

During the past month a truck operated by the J. A. Terteling Company, subcontractor of the General Electric Company, was involved in an accident with one of the planes at the Civil Air Patrol airport in Richland. The accident occurred when one of the planes attempted to take off on a runway which was being used by the Terteling Company in some construction work and the plane ran into the truck. Suit has been instituted by the F. O. Schweitzer Aircraft Company, Inc. against officers of the Civil Air Patrol and the J. A. Terteling and Sons Construction Company. The Travelers Insurance Company has been notified of this suit.

2. Life Insurance

Code information for use by insurance companies in issuing insurance to employees at this works was furnished to 29 insurance companies and investigation agencies during the month of July.

3. Compensation

_____ and _____ Permanent and partial disability awards were recently granted to the above-named claimants by the Department of Labor and Industries at Olympia, Washington, without notification to this company of the award prior to payment. A review of these awards indicated that they were not justified. A letter of protest to the Department of Labor and Industries has been submitted requesting that a complete and thorough analysis of these awards be made.

A visit was made to the Department of Labor and Industries at Olympia, Washington, during the month of July and the request of the Director of that department for an increase in the administrative expenses was discussed. The department has agreed to submit to this company a statistical report setting forth the reasons for increasing this administrative expense. As soon as this report is received it will be reviewed by both company and A.E.C. officials.

Public Relations

Consideration is being given at the present time to the request of Mr. R. W. Jackson, representative of the Advertising and Publicity Department News Bureau in San Francisco, to the possibility of holding "Press Day" at the Hanford Works. Efforts are being made to make possible a discussion of the Hanford operation by the General Manager of the Nucleonics Department with representatives of various newspapers on the West Coast.

Numerous requests continued to be received during the month for pictures and news releases concerning the flood condition as it affected Richland. The Editor of the G.E. MONOGRAM, as well as the Editor of the McGraw-Hill Pacific Coast News Bureau, made request for such information.

During the month of July the story of H. A. Kramer's part in the forecasting of the flood level at Richland was distributed to various newspapers throughout the Northwest.

A news release concerning the formation of a chapter of the American Chemical Society in Richland, accompanied by pictures, was furnished to the TRI-CITY HERALD, Seattle POST-INTELLIGENCER, OREGONIAN and Spokane CHRONICLE, as well as the Associated Press at Seattle and United Press in Portland. News releases were also made concerning the appointment of two new members of the Law Division staff.

A representative of the Public Relations Section acted as Chairman of the Safety Speakers Contest which was held in the Columbia High School auditorium. A G.E. opinion meter was obtained from Schenectady for use in connection with the selection of the winners in this contest.

During the month of July, six general news releases were made to the local newspapers in this community.

The Public Relations Section has been requested to prepare the G.E. Nucleonics Department Organization Directory. This directory will be distributed to all those at Hanford Works and elsewhere who require the information for use in connection with their work. It is planned that a new directory will be released every three months.

Three posters designed by the Public Relations Section for use in connection with the campaign to stimulate interest in the Group Life Insurance Plan were submitted to the Sign Shop of the Maintenance Division for preparation.

A news report concerning the reduction of force being made by the Design Division was released to the local newspaper in this vicinity.

Five issues of the Works NEWS were published during the month of July with the "Candid Camera" being inserted in the July 30 issue.

Women's Activities

In connection with the Women's Training Program which began on June 14, the following subjects were presented during the month of July:

Job Attitudes from a Supervisor's Point of View
Safety and Security as they Concern Women Employees

Employee Benefit Plans
Personal Poise Techniques
Speech - How It Can Help You Get Ahead

On July 29, 22 girls completed the advanced shorthand course with 14 passing the 100 words per minute requirement for stenographic positions.

Eighty women employees were given orientation during July. Thirty-eight women employees were given exit interviews. Two-hundred-ninety-six telephone calls were received from riders and drivers for week-end and vacation trips during July.

STATISTICS

Employment

Number of employees on rolls	6-30-48	7-31-48
Exempt	1,710	1,744
Non-Exempt	6,907	6,909
Total	8,617	8,653

ADDITIONS

	Exempt	Non-Exempt	Total
New Hires	31	218	249
Re-employs	0	2	2
Reactivations	3	11	14
Transfers from other Works	4	0	4
Net Additions	38	231	269
Payroll Exchanges	31*	0	31
Gross Additions	69	231	300

*Transferred from Weekly Salary Roll

TERMINATIONS

	Exempt	Non-Exempt	Total
Actual Terminations	34	188	222
Removals due to extended leaves	1	10	11
Payroll Exchanges	0	31*	31
Totals	35	229	264

Approximately 50% of all actual terminations were on a lack of work basis. Most of these resulted from the responsibility for carrying forward certain phases of construction work being shifted from the Construction Division to Atkinson-Jones Construction Company, and a decrease of work in the Design Division. In most instances where employees were laid off by the Construction Division, the employees affected were hired by Atkinson-Jones Construction Company. Most of the voluntary terminations were for the following reasons: (a) another job, (b) personal reasons, dissatisfied with job, wages, climate, etc., and (c) to return or remain home.

GENERAL

	6-48	7-48
Applicants interviewed	1,939	1,509
Photographs processed	4,072	3,224
Fingerprint impressions taken (in duplicate)	960	518
Procurement letters written	3,896	1,585

ABSENTEEISM STATISTICS (Weekly Salary Roll)**

	6-48	7-48
Male	2.53%	1.22%
Female	2.71%	2.42%
Total Plant Average	2.75%	1.54%

INVESTIGATION STATISTICS

	6-48	7-48
Cases pending at beginning of month	2,039	1,948
Cases received during month	632	605

*Transferred to Monthly Salary Roll
**Statistics furnished by Weekly Payroll Division

	6-48	7-48
Cases closed	723	771
Cases pending at end of month	1,948	1,782
Number found satisfactory for employment	558	338
Number found unsatisfactory for employment	14	9
Cases closed before investigation completed	60	13
Special investigations conducted	45	133

Compensation and Insurance

Claims

	Reported in July, 1948	Reported in June, 1948	Total Since Sept.1,1946
Workmen's Compensation	100	98	825
Liability	19	28	213
Handled for du Pont	0	0	

Compensation Payments Approved (Department of Labor and Industries)

	June, 1948		July, 1948		Total Since Sept. 1, 1946
	No. of Claims	Amount	No. of Claims	Amount	Amount
Medical Aid	20	$ 823.70	27	$1,109.48	$12,060.76
Accident Fund	75	8,080.14	69	3,140.86	76,380.07
Pension	27	1,220.32	30	1,435.32	31,032.79

Liability Payments Approved (Travelers Insurance Company)

April	Liability	605.34	
	Property Damage		-32.27
	Auto Property Damage	1,824.98	
		2,430.32	
		32.27	
	Total	2,398.05	

May	Liability	6,658.74
	Property Damage	16,979.50
	Auto Property Damage	641.24
	Total	24,279.48
June	Liability	11,162.47
	Property Damage	1,725.22
	Auto Property Damage	80.45
	Total	12,968.14

PURCHASING AND STORES DIVISION
JULY, 1948

GENERAL

Purchasing

1,399 purchase orders were placed during the month as compared with 1,548 placed during the previous month. Requisitions received totaled 2,268 as compared to 2,578 the previous month. 2,351 requisitions were placed as compared with 2,480 during the previous month. Requisitions on hand at month end totaled 792 as compared to 875 at the beginning of the month.

As a result of a recent Supreme Court decision against the use of the basing point system of pricing, several alterations were written to change F.O.B. points on purchase orders for steel placed under the Voluntary Steel Allocation program. Indications were that the change would result in slightly increased costs for steel products at this project.

We were notified by the Atomic Energy Commission that we were to assume the responsibility for purchase of radiation detection instruments which have heretofore been supplied by the Instrument Branch of Oak Ridge. A meeting was held with representatives of the Instrument and Health Instrument Divisions to discuss the problems incident to the new procedure. Negotiations were begun for the purchase of a considerable quantity of instruments in this category. Seven companies including the General Electric Company, Electronics Department, have indicated interest in quoting.

Requests were received from the Project Engineering Division to cancel several large orders covering materials purchased for use in the air decontamination process. All affected vendors were contacted by telegraph or telephone and indications were that the cancellation charges will be considerable in the aggregate. It was estimated that the total figure will exceed $25,000.

The General Purchasing Department in Schenectady undertook negotiations with the Aluminum Company in an effort to bring about a reduction in the cost of our aluminum cans. In addition, considerable effort was expended in attempting to develop additional sources of supply with the result that Victor Industries Corporation submitted a bid of $99.45 per M. on extruded cans and Scovill Manufacturing Company quoted $115.00 per M. on drawn cans.

This matter was discussed in considerable detail with Mr. Shugg and Mr. Hageman of the Atomic Energy Commission and as a result of this discussion, it was decided to place experimental orders for 100,000 cans each with the two above-mentioned companies. At the time they begin production, we will arrange to send an inspector to their plants who will perform the initial inspection and at the same time instruct their inspectors as to our requirements and our methods of inspection. All cans not meeting specifications will be for the account of the vendors.

It was also agreed that in order that we be adequately protected until the results of the experimental orders are determined, an additional order for 200,000 cans would be placed with the Aluminum Company.

Initial receipts of domestic coal against our new contracts were found to have slacked down considerably upon arrival. The coal should have been 1 5/8" x 3 1/4" in size; however, it had been so broken up due to handling and weather

GENERAL (Cont.)

Purchasing

conditions that the size as delivered was approximately 0" x 2" which, of course, was too small for use in the Village residences.

Representatives of the suppliers, Big Horn Coal Company and The Continental Coal Company, were called in and a thorough investigation was made in conjunction with representatives of the community organization, and it was agreed by all concerned that the coal had slacked subsequent to loading at the mines and that the slacking was caused primarily by the high temperatures experienced at this time of the year, the shaking up in transit and handling incident to unloading being minor factors.

In an effort to correct this condition, both of the coal companies' representatives agreed to supply a larger size coal for Village consumption at no increase in price. The consensus being that although the larger size will slack to a degree due to existent temperatures, the delivered size would more nearly approximate our requirements. With the advent of cooler weather, it was agreed that we would again try shipments of the smaller size and if it is found that the smaller size is acceptable, we will continue to order that size otherwise both suppliers will continue supplying the larger size at the same price.

Stores

A study of all material carried in general Stores stock was initiated in an effort to develop slow and nonmoving items which are in excess of our needs. Every effort is to be made to dispose of surplus thus developed through construction channels prior to the submission of a formal excess list to the Atomic Energy Commission for disposition. In addition to reducing the monetary value of Stores inventories, the second important objective to be attained is additional warehouse space which has always been at a premium.

Disbursements from Stores during the month totaled $236,823.87 as compared with disbursements of $304,145.89 during the previous month. It is significant that 705 new items were added to Stores stock during the month through the medium of Stores Stock Requests approved by Division Managers or their designees whereas there were no items deleted or removed from Stores stock. This resulted in a total of 51,643 items in stock month end as compared with 50,938 at the end of the previous month.

PERSONNEL

Administrative Supervision	1
Purchasing	
Employees Exempt	7
Employees Non-Exempt	27
Stores	
Employees Exempt	14
Employees Non-Exempt	136
TOTAL	185

Total personnel at month end was 185 as compared with 187 at the end of June, 1948.

PERSONNEL (Cont.)

The change of job classifications and attendant rate changes which were effective July 19, 1948 were discussed with each employee and their signatures were obtained on the designated forms. Several inequities were corrected by means of review and reclassification.

W. M. Hunt was transferred to our staff of buyers from the Construction Procurement division replacing D. H. Staley who resigned to accept other employment.

SAFETY AND SECURITY

Purchasing

Safety and Security Meetings Scheduled	1
Number of Employees attending	30

Stores

Safety and Security Meetings Scheduled	14
Number in attendance at meetings	143
Minor Injuries	4

STATISTICS

Purchasing

Requisitions on hand 7-1-48 (includes 68 assigned to Govt.)	875
Requisitions received during July	2,268
Requisitions placed during July	2,351
Requisitions on hand 7-31-48 (includes 56 assigned to Govt.)	792
HW Orders placed	1,399
TPS Orders placed	169
M.O.'s placed	0
O.R.'s placed	19
Alterations issued	164
Orders Expedited	270
Scrap Sales completed	2
Value of Scrap Sold	$2,280.34

Stores

Number of items added to Stores stock	705
Number of items deleted from Stores stock	0
Items in Stores stock at month end	51,643
Receiving Reports issued	3,602
Store Orders filled	17,973
Store Orders filled (Salvage)	876
Emergency Store Orders filled (Stores stock)	3
Returnable containers on hand at month end	5,139
Returnable containers on hand over six months	1,000
Value of Disbursements, not including cash sale items	$236,823.87
Value of Disbursements (Salvage)	16,772.82
Value of transfers from Salvage to Stores	2,186.32

JULY 1948

LABOR RELATIONS AND WAGE RATE DIVISION

ORGANIZATION AND PERSONNEL

Bertram Miller, in charge of Labor Relations and Wage Rates, Erie Works, was contacted relative to making a trip to Hanford Works for the purpose of assisting in revising the wage structure applying to exempt personnel. He agreed to assist in this assignment and will arrive August 1.

No additional employees were added to this Division during the month of July.

Number of Employees on Payroll	July
Beginning of Month	10
End of Month	10
No Change	0

GENERAL

The principal activity of this Division has been concerned with placing the revised wage rate plan in effect. All rates for non-exempt personnel were furnished to the Payroll Office and to Division Managers on July 16 prior to the effective date, July 19.

Records were set up to administer increases in accordance with the new progression schedules or the old schedules, in the event employees were on preferential rates. New job classifications and rates were posted on all divisional records.

Rates and classifications have been reviewed with supervisory personnel in all divisions. Adjustments in classifications have been made in instances where jobs have changed since the original reclassifications.

STATISTICAL

Requisitions for non-exempt personnel received and approved	328
Additions to Payroll	293
Removals from Payroll	364
Transfers from Weekly to Monthly Payroll	34
Transfers Approved	64
Job Reclassifications approved	181
Automatic Increases	684
New Job Classifications and Rates Posted to Divisional Records	6974

PLANT SECURITY AND SERVICES DIVISION

MONTHLY REPORT - JULY 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	2	2	-	-
Patrol and Security	662	671	9 (a)	-
Safety & Fire Protection	139	138	-	1 (b)
Office Services	320	319	-	1 (c)
Total	1123	1130	9	2

NET INCREASE - 7

(a) - 21 Hires (Patrolmen)
1 Return from L/A (Seamstress)

8 Terminations (Patrolmen)
1 Retired (Patrolman)
1 Removal due to L/A
3 Transfers to other Divisions (2 Patrolmen and 1 Typist)

(b) - 4 Hires (Firemen)

1 Termination
4 Transfers to Construction Division (May, 1948)

(c) - 27 Hires (16 - General Services; 11 - Clerical Services)
3 Transfers from other Divisions (2 - Clerical Services; 1 - General Services)
1 Termination (Janitor)
3 Transfers to Technical Division (Laundry Helpers)
27 Transfers to Technical ision (Classified Files)

The Classified Files Section was transferred to the Technical Division effective July 5, 1948.

Service Divisions
Plant Security and Services

SAFETY & FIRE PROTECTION

Safety

Plant Safety Record - 4 days.

Injury Statistics

	June	July 1 thru July 20, 1948	Year to Date	Cumulative F/R - 1948
Major Injuries	1	3	8	0.88
Non-Tabulatable Major Injuries	0	0	0	
Sub-Major Injuries	6	2	24	
Minor Injuries	481	335	3195	3.51

Major Injury No. 48½

July 3, 1948 - [redacted], an employee of the Transportation Division, outside the 200 East Area, incurred a compound fracture of the Distal Phalanx, right thumb, when the drive head on a well drilling rig was dislodged from its resting place. Before starting up, C. O. Hash (W-5115-R), the operator, shouted to the injured to stand back and, without looking to see if his orders were followed, pulled the pin that opened the stem guide which would leave the drive head in an insecure position. The injured moved the stem enough when he grasped the bit that it knocked the drive head loose from its insecure seat on the guide and it slid down the stem, catching his thumb.

Major Injury No. 49

July 7, 1948 - [redacted] an employee of the North Richland Real Division, 3000 Area, had 40% of the distal phalanx of the left middle finger amputated when a strong gust of wind blew a barracks door shut. The door only partially closed when the injured pulled it after passing through. She reached back for the door knob with the left hand to completely close the door when the door blew shut, catching the finger between the door and door facing.

Major Injury No. 50

July 16, 1948 - [redacted] an employee of the Security and Services Division, Hanford Area, sustained a fracture of the oscalcis of the right heel when the back of his heel was caught between the walking beam and the deck of the Hanford Ferry. After having fastened the Ferry to the landing dock on the down-stream and up-stream sides, he dropped the guard chain and took a position on the up-stream side between the equipment and the walking beam. When the tractor and trailer (with the caterpillar which the ferry was carrying) was driven off, the weight shifted from the center of the barge to the dock end, causing the ferry to sink more deeply into the water. This caused the apron arm to come up and the walking beam to go down, striking the employee on the back of the right heel, pinching it against the dock.

Service Divisions
Plant Security and Services

Sub-Major Injury No. 121

July 14, 1948 - , an employee of the Power Division, White Bluff's Ice House, sustained a contusion and simple chip fracture of the distal phalanx, right middle finger when it was caught between a broken cake of ice and the floor. Two employees, the injured and O. E. Warren (W-4398-P) were transferring ice from a day storage room to a loading platform. Warren was starting the cakes to Clisby, and he was putting them on the slide when one cake broke. The larger piece was pushed on without difficulty, but the smaller half was top-heavy, and when injured pushed it onto the slide it toppled over. In attempting to catch it, he lost his balance and fell, and the ice landed on his hand.

Sub-Major Injury No. 122

July 14, 1948 - , an employee of the P Division, 300 Area sustained a fracture of the fourth toe, left foot when a rod fell from the lower layer of rods on the rod truck to the floor and struck the injured's foot. While checking the identity of a series of rods on the rod trucks, he dropped a short rod to a lower layer, for convenience, expecting the rod to locate itself between two other rods. It did not do this but rolled off onto his foot.

Safety Meetings

There were 476 safety meetings held during the period of July 1 through July 20, with a total attendance of 6,886.

Safety Spectacles

Orders were placed for 27 pair prescription safety spectacles during the period of July 1 through July 20; 61 pair were checked received and fitted; and 173 adjustments and repairs were made to all types of safety spectacles.

Exposure Hours

There were 973,253 exposure hours from July 1, 1948, to and including July 20, 1948.

100 Area Activities

Ceremonies were held by the 100-F Area employees in observance of their third consecutive year without a lost time injury. The Safety Engineer explained the significance of the Safety Scroll. The feature event of the ceremony was the Stump the Panel of Experts contest. Representatives of the Atomic Energy Commission were present, and Vice President R. C. Muir, General Manager of the Nucleonics Department, made his first public appearance in the areas.

An investigation was made of a boiler coating compound (Carey B.T.U.) that has caused skin burns to employees using it. Laboratory analysis reveals Anthracene, which is known to cause cancer. Maintenance Division has been advised of this and requested to investigate such material before purchasing.

Plans to improve handling and storage of gas cylinders within the 100 Areas are underway; however, gas cylinders are not being handled by Stores as prescribed in Safety Bulletin No. 40.

Complete leather suits for welders of the 100-F Minor Construction have been received and put into use.

The Supervisors Training Program is being well accepted. New schedules are being arranged for personnel not included in the original set-up.

A problem relative to closing coal car doors is being investigated. Present method is quite hazardous and should be improved.

Unsatisfactory condition of walkway at 100-B Badge House is being corrected. This includes revision of bus loading and unloading lanes.

Investigation was made of one major injury at Hanford, a sub-major injury at White Bluffs, and a near-serious accident of a Hydro Crane at 100-B Area.

Goggles for the Transportation Division crews have not been received. The old type, which are considered unsatisfactory, are still being used.

200 Area Activities

Investigations were made of a hernia case and Sub-Major Injury No. 120 (which was reclassified to Major Injury No. 48½); five movies were shown to employees; discussions at safety meetings were held; two near serious accidents were investigated; and the Safety Leaders Training Program was started.

300 Area Activities

A special investigation was made of the acid storage problem at the Pasco Warehouse. The only problem lies in getting the material under cover, and arrangements were made to do this.

Supervisors Safety Conferences were held with three groups of supervisors. These conferences are being well accepted.

A special inspection was made of the H. I. Biological Chemical laboratory in the 700 Area. The problem investigated was one of acid concentration in the air, and suggestions were made as to revision of the style of hoods currently being used.

700-1100 Area Activities

The Safety Leaders Training course was presented to supervision throughout the month. There were 143 members of supervision from all divisions scheduled for these conferences, and attendance was good. Receptivity has been exceptionally good.

Service Divisions
Plant Security and Services

Inspections and recommendations were made on new hydrocranes before approval was given to put them into plant service.

Several talks were given to Safety Meeting groups, and movies shown where and when appropriate.

Stage preparations and decorations were made for the Safety Speakers Contest held in the high school auditorium July 21.

A dust collector system is under study, and recommendations have been made for installation in the 722 hanger upholstery and carpentry shop.

Inspection was made and needed revisions recommended for new steam cleaning equipment temporarily installed at the labor yard. Necessary operating rules will be formulated in cooperation with supervision in charge.

General

The Safety Division worked with Project Engineers on preliminary plans for addition to the Fire Station in 200 East Area.

Three fire alarm boxes were re-located in the 3000 Area, and two fire alarm boxes were located at the airport.

The question of the adequacy of the White Bluffs water system was taken up with Construction, and some work is being done to improve it.

The design of the new 101 Area water supply was approved, and the design of the White Bluffs Fire Alarm System was approved.

The safety records were closed July 20 for the HW Safety Report. The injury experience of each sub-division has been carried along with the divisions and plant record. The report is in line with the new plant organization.

A meeting with the new Superintendent of Schools was held, and the school safety program used in past years was reviewed with him. An invitation was recived from him to speak to the teachers at one of their earliest group meetings for the school year 1948-1949 on the "School Safety Program".

New forms are to be used in preparing the Government Safety Report for July 1948.

Recommendations were prepared and turned over to the Realty Division for improving the visibility of motoring traffic through village intersections.

A continuous general inspection of all areas is being conducted. Unsafe items and practices found are assigned to the Area Safety Engineer for correction or elimination; also, various activities in the Safety Program are being stimulated.

SAFETY DIVISION - INJURY AND ACTIVITY STATISTICS

	300 Area	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	700-1100 Areas	Misc.	3000 Area	Pasco Area
Minor Injuries	78	16	17	26	33	68	69	9	18	1
Sub-Major Injuries	1	0	0	0	0	0	0	1	0	0
Major Injuries	0	0	0	0	0	0	0	2	1	0
Days since last Tabulatable Major Injury	279	55	537	1183	250	922	51	4	13	355
Days since last Sub-Major Injury	5	183	40	273	223	103	41	6	84	281
Days without a Minor Injury	4	9	9	6	5	2	2	14	10	19
Safety Meetings Conducted	68	28	38	39	36	50	192	6	3	4
Number in Attendance	801	153	262	479	348	682	3589	33	498	27
Safety Spectacles Delivered	12	0	1	9	11	11	17	0	0	0
Safety Spectacles Serviced	7	19	27	22	35	40	23	0	0	0

MONTHLY INJURY ANALYSIS

Period - July 1 through July 20, 1948

Minor Injuries

	Misc. Burns	Abrasions	Contusions	Lacerations	Punctures	Splinters	Strains & Sprains	Foreign Body	Blisters	Unclassified	TOTAL	
											JULY	LAST MONTH
GENERAL	0	0	0	0	0	0	0	0	0	0	0	1
MANUFACTURING	30	28	27	35	8	12	6	13	10	7	176	285
MUNICIPAL	0	5	4	9	2	2	2	2	1	1	28	37
ACCOUNTING	1	0	0	0	0	0	1	1	0	0	3	4
LEGAL	0	0	0	0	0	0	0	0	0	0	0	0
TECHNICAL	6	13	1	10	5	1	0	1	1	1	39	55
MEDICAL	0	2	2	10	1	0	0	0	0	1	16	19
HEALTH INSTRUMENT	1	5	0	6	2	1	0	0	0	1	16	15
SERVICE	4	7	3	9	3	6	3	5	0	2	42	54
DESIGN & CONSTRUCTION	0	3	1	4	1	3	2	0	0	1	15	11
TOTAL	42	63	38	83	22	25	14	22	12	14	335	
LAST MONTH	70	85	45	136	28	31	13	23	19	31		481

FIRE PROTECTION

Fires	Number of Fires June	Number of Fires July	Estimated Damage June	Estimated Damage July
Plant Area	14	10	$30.00	$ 7.50
Miscellaneous	2	0	$40.00	No Damage

Routine Duties

Fire Extinguishers

Inspected	2,324
Installed and Relocated	37
Refilled	51
Repaired	0

Gas Masks

Inspected	98
Serviced	6

Fire Drills & Lectures

Outside	45
Inside	67
Auxiliary Brigade	21
Safety Meetings	19

All fire alarm boxes in the Industrial Areas were tested.

All fire hose houses, hydrants and lines in Plant Areas were inspected and hydrants flushed.

OFFICE SERVICES DIVISION

General Services Division

Laundering volumes were as follows:

Plant Laundry (Building 27[illegible]	June	July
Coveralls - Pieces	28,512	28,465
Towels - "	8,656	8,968
Miscellaneous "	58,000	54,236
Total Pieces	95,168	91,669
Total Dry Weight - Lbs.	132,897	129,085

Service Divisions
Plant Security and Services

Richland Laundry (Building 723)	June 1948	July 1948
Flatwork - Pieces	162,963	177,061
Rough Dry- "	30,927	29,067
Finished - "	5,019	4,908
Total Pieces	198,909	211,036
Total Dry Weight - Lbs.	138,291	137,174

Monitoring Section (Building 2723-W)		
Poppy Check - Pieces	50,333	57,998
Scaler Check- "	78,923	76,292
Total Pieces	129,256	134,290

Clerical Services Division

Telephone

A meeting was held with Atomic Energy Commission Communications and Legal personnel concerning the contract on pay telephones with the Kennewick Valley Telephone Company. It was agreed that 5% is too low a commission for the plant to receive for the services which we render and that we should receive the standard rate paid any commercial facility who installs a pay telephone in its place of business. This rate is 15%, which will be used as the basis for negotiation on a new contract.

	June		July	
Lines working as 1 - 0 Lines	354		622	
2 - 0 Lines	14		58	
0 -PBX	13		19	
1 - N	288		21	
2 - N	42		3	
N- PBX	6		0	
20 - R Combination Lines	1		1	
Total Official Lines		718		724
Lines working as 1 - F Lines	81		84	
2 - F	17		17	
F-PBX	2		2	
1 - R	8		8	
2 - R	1284		1250	
3 - R	-		8	
2 - RF	19		19	
3 - RF	-		1	
Total Non-Official Lines		1411		1389
Vacant Lines		71		87
Total Lines in Multiple Bank		2200		2200

Service Divisions
Plant Security and Services

Mail and Stationery

The work was of a routine nature in this section during the month of July.

	June	July
Pieces of First Class Mail received	55,380	46,521
Pieces of Parcel Post Mail received	923	937
Pieces of Registered Mail recieved	284	328
Pieces of Injured Mail received	285	205
Pieces of Special Delivery mail received	328	270
Total Pieces of Mail received	57,200	48,261
Pieces of Mail sent out	30,135	21,908
Amount of Money used in Postage Meter	$ 1,911.39	$ 1,086.85
Teletypes Sent	4,320	2,891
Teletypes Received	4,404	2,978
Total	8,724	5,869

Office Equipment

During the month, the new repair shop in Hutment 722-H was occupied although only partly complete.

A great deal of trouble has been experienced with the new Underwood electric machines, and, as a result, the Underwood people and their distributor were called in to discuss the matter. It was pointed out that unless the machines could be made satisfactory, they would be returned to the Underwood Company, and that they are not to ship any more machines on the order until we are satisfied as to the quality of the typewriters.

	June	July
Office Machines repaired in Shop	268	225
Office Machine service calls	324	281

Printing

The No. 2066 Multilith machine broke down, and upon investigation it was found to be beyond repair. As a result, we have excessed the machine and put into operation one which was secured from excess storage.

	June	July
Multilith Orders Received	232	177
Multilith Orders Completed	241	181
Multilith Orders On Hand at month end	21	17

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Service Divisions
Plant Security and Services

	June	July
Mimeograph Orders Received	2266	2039
Mimeograph Orders Completed	2266	2039
Mimeograph Orders On Hand at month end	0	0
Ditto Orders Received	3492	3272
Ditto Orders Completed	3492	3272
Ditto Orders On Hand at month end	0	0

Stenographic Services

Lack of space requirements has hindered completely staffing this section; however, the service is being provided on a limited basis.

Central Records Storage

Arrangements are being made with Mr. Meekins of the du Pont Company for an arrangement of the present storage hutments so that additional space for the storage of records can be gained.

	June	July
Cartons of material received for storage	*	*
Cartons of material sorted, indexed and stored	*	86
Cartons of material shipped	0	0

Summary of persons viewing records for the month of July, 1948:

General Electric Files

Accounting	13
Medical	2
Technical	9
Project Engineering	1
Sub-contractor Files	15
Maintenance	1
Total	41

du Pont Files

Investigations	39
Construction	5
Operations	2
Total	41

Atomic Energy Files 5

*No record maintained prior to transfer of the Central Records Storage Section from the Accounting Division in June.

Service Divisions
Plant Security and Services

PATROL AND SECURITY

General

On July 6, 1948, the Process Room and Apparatus Room were included within the 105-DR Exclusion Area at 7:00 A.M., and three additional patrolmen are required in this area daily.

The Hanford Ferry resumed normal operations on July 15 and discontinued hauling private vehicles on July 19.

On July 16, the Construction flagmen were eliminated and the Patrol assumed the responsibility of directing traffic at the various railroad crossings within the Plant area at shift change.

Effective July 23, properly badged members of the National Guard will be permitted to escort unbadged National Guardsmen and new recruits into the Pasco warehouse area. The unbadged persons will be required to register both "in" and "out".

On July 27, a three day check between the hours of 3:00 P.M. and 9:00 A.M. will be made at the Richland Barricade for the Transportation Department. This check will cover all vehicles bearing "HO" numbers and will cover vehicle number, number of passengers, direction of travel and time.

Effective July 29 at 4:00 P.M., a post was established in the Assembly Room and Finished Store Room in the 101 Area, to be covered by one Patrolman from 4:00 P.M. to 8:00 A.M., Monday through Saturday and twenty-four hours on Sundays and holidays.

On July 27 a new post was established in the 200-West Area, to be known as the 272-Z "Exclusion" Area with a Kardex for cleared personnel. Operations Maintenance Division will control the cleared approval for entrance into the Area. One patrolman will be posted in the badge house during the Area working hours.

A cut was made in the south side of the 231 "Exclusion" Area fence line on July 9 and 10, and a patrolman posted. A small section of this area was fenced off for the erection of the new 2705-Z Building.

Tentative plans were made July 20 for the construction of a sub-station in the 300 Area, actual construction to begin in August.

At the end of this month 95% of the "check-off" of unaccounted-for classified documents in the Works Inventory has been completed.

PATROL

The 200 Areas handled 428 Process escorts between the Areas.

Requests handled totaled 605, mainly consisting of opening doors, gates, and escorts for employees of other departments.

A total of eight Construction employees were escorted into areas for First Aid treatment.

There were 213 Unusual Incident Reports received, consisting mainly of contraband picked up at barricades, lost badges, poncils and traffic violations.

Fourteen classified escorts were handled during the month.

Four employees were given emergency First Aid treatment in Areas by Patrol supervision during periods when medical personnel were absent from the Areas.

The Outer Area traffic car issued 15 citation tickets, 1 warning ticket, 59 verbal warnings, and handled 174 details in addition to their regular duties.

Practice evacuations were held as follows:

Date	Area	Time
July 1	100-F	10:37 A.M.
2	241-TX & 234-5	11:22 A.M.
9	100-B	8:35 A.M.
14	100-D	1:35 P.M.
16	100-F	10:36 A.M.
20	White Bluffs	11:35 A.M.
20	100-B	2:05 P.M.
27	100-D & 105-DR	1:42 P.M.

Training

Effective July 1, 1948, the Patrol Training School established a seven-week schedule for advanced training and will not be reported during the month of July.

Basic training for new patrolmen will be continued.

SECURITY

There were 302 Security Meetings held, with an attendance of 5,025 General Electric employees.

Security Education talks by Security speaker M. J. Headley:

Operations - 342 employees of General Electric
Construction - 0
Patrol - 425 Patrolmen

Authorization Cards Issued

June 30 — Discontinued July 1, 1948, with issuance of new HW Photo Identification Passes.

Service Divisions
Plant Security and Services

Class "Q" clearances received on old employees this month	450
Class "Q" clearances received on old employees to date	2,738
Class "Q" clearances received on new employees this month	138
Class "Q" clearances received on new employees to date	3,893
Class "Q" clearances received on both old and new employees since February 17, 1948	6,631
Interim "S" clearances awaiting change to "Q"	17
Formal "P" clearances awaiting change to "Q"	563

Two hundred "Slogan of the Month" posters were distributed to all areas, entitled, "If It's Classified, Safeguard RESTRICTED DATA".

Statistical Summary of Outstanding Area Badges

	June				July				
	A	B	C	Total		A	B	C	Total
100-B	610	1193	651	2454	100-B	589	1230	687	2506
100-D	777	1147	654	2578	100-D	721	1235	662	2818
100-F	784	1102	646	2532	100-F	742	1196	668	2606
200-E	1015	1301	589	2905*	200-E	987	1303	597	2887*
200-W	1289	1391	522	3202	200-W	1248	1392	545	1985
200-N	80	724	182	1706	200-N	65	743	179	987
300	1464	1392	422	2278	300	1422	1452	415	3289
100-DR	4468	351	-	4819	100-DR	4431	348	-	4779
241-TX	2646	234	-	2880	241-TX	2668	234	-	2902

*Includes 31 A badges at Riverland Yards.

*Includes 31 A badges at Riverland Yards.

Visitors or Temporary Badges

Area	June	July
100-B	29	51
100-D	41	102
100-F	39	129
200-E	47	87
200-W	61	128
200-N	26	41
300	71	141
100-DR	61	132
241-TX	35	86
Total	410	897

Service Divisions
Plant Security and Services

Special Clearance Section

Following is a statistical summary of emergency clearance status of vendor and consultant companies:

Total companies forwarded to AEC this month:	14	Personnel:	77
Total companies forwarded to AEC to date:	162	Personnel	1,731
Total companies cleared for restricted data this month:	28	Personnel:	93
Total companies cleared for restricted data last month:	29	Personnel:	96

New companies forwarded to the Atomic Energy Commission this month:

American Blower Company
401 Vance Building
Seattle, Washington

Dawson Machinery Company
Seattle, Washington

A. B. Farquhar Company
York Pennsylvania

Curtis G. Joa, Inc.
Sheboygan Falls, Wisconsin

Albert F. Sperry
225 N. Michigan Avenue
Chicago, Illinois

The Pyle National Company
1334 N. Kostner
Chicago, Illinois

Number and type of clearance granted by the AEC this month to vendors:

Formal "Q"	61
Formal "P"	48
Emergency "Q"	6

No individual investigations were conducted by the Security Section for the purpose of obtaining Emergency clearance for vendors and consultants this month.

Emergency clearances requested for GE personnel this month	14
Emergency clearances requested for GE personnel to date	155
Emergency clearances requested for consultants this month	1
Emergency clearances received on GE personnel this month	20
Emergency clearances received on GE personnel to date	105
Emergency clearances received on consultants this month	1
"QR" clearance requested for GE personnel this month	1
"Q" clearance cards issued this month to vendor personnel	19
Clearance change requests from "P" to "Q" submitted to AEC this month	2

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING JULY 31, 1948

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
ACCOUNTING DIVISION						
I. Visitors to Other Installations						
L. P. Murray to: National Carbon Company Morganton, North Carolina	Cost distribution accounting	L. F. Perkins	7-12-48	7-17-48	X	
CONSTRUCTION DIVISION						
I. Visitors to Other Installations						
L. H. Arning to: Pacific Car & Foundry Seattle, Washington	Develop additional sources of supply for critical materials	R. L. LeBlanc C. Williams	7-2-48	7-3-48	X	
L. H. Arning to: Washington Iron Works Seattle, Washington	Develop additional sources of supply for critical materials	O. C. Nugent	7-2-48	7-3-48	X	
L. H. Arning to: Kellex Corporation New York City, New York	Procurement of materials	R. J. Carpenter J. J. Cuniffe	7-10-48	7-11-48	X	
L. H. Arning to: Chapman Valve Company Orchard, Massachusetts	Review schedules of critical valves	J. Dugan G. Fox	7-13-48	7-13-48		X
L. H. Arning to: American Machine & Foundry Buffalo, New York	Review VS rod requirements and the stainless steel hood program	J. L. Lenton A. C. Wall	7-14-48	7-14-48		X

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
L. H. Arning to: Standard Stoker Company Erie, Pennsylvania	Review "B" block program	E. A. Turner	7-15-48	7-15-48	X	
L. H. Arning to: Vermont Marble Company Proctor, Vermont	Review "B" block program	R. Proctor	7-16-48	7-17-48	X	
L. G. Jones to: Pacific Car & Foundry Seattle, Washington	Develop additional sources of supply for critical materials	R. L. LeBlanc C. Williams	7-2-48	7-3-48	X	
H. A. Hauser to: Pacific Car & Foundry Seattle, Washington	Develop additional sources of supply for critical materials	R. L. LeBlanc C. Williams	7-2-48	7-3-48	X	
L. G. Jones to: Washington Iron Works Seattle, Washington	Develop additional sources of supply for critical materials	O. C. Nugent	7-2-48	7-3-48	X	
H. A. Hauser to: Washington Iron Works Seattle, Washington	Develop additional sources of supply for critical materials	O. C. Nugent	7-2-48	7-3-48	X	
J. B. Whitworth to: Alaskan Copper Works Seattle, Washington	Check centering flanges	E. T. Cahill	7-26-48	7-26-48	X	
L. W. Smith to: Washington Iron Works Seattle, Washington	Study shop equipment used in various steel fabrication shops	Mr. Fink	7-22-48	7-24-48		X
L. W. Smith to: Air Reduction Company Seattle, Washington	Study shop equipment used in various steel fabrication shops	Mr. Goetjen	7-22-48	7-24-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
L. W. Smith to: Linde Air Products Co. Seattle, Washington	Study shop equipment used in various steel fabrication shops	Mr. Dickinson	7-22-48	7-24-48		X
DESIGN DIVISION						
I. Visitors to Other Installations						
G. H. Syrovy to: Puget Sound Navy Yard Bremerton, Washington	Expedite fabrication and design	S. F. Allison	7-7-48	7-8-48		X
G. H. Syrovy to: American Machine & Foundry Buffalo, New York	Consultation on experimental work	J. L. Lanton	7-10-48	7-22-48	X	
G. H. Syrovy General Electric Company Schenectady, New York	Consultation on experimental work	Mr. Quill Mr. Garr Mr. Hammond	7-10-48	7-22-48	X	
G. H. Syrovy to: Giffels & Vallot Detroit, Michigan	Consultation on experimental work	M. M. Bush C. J. Stoiglodor R. F. Giffels	7-10-48	7-22-48	X	
H. J. White to: Jabsco Pump Company Burbank, California	Design consultation	-	7-7-48	7-13-48		X
H. J. White to: Glaspray Process Company San Francisco, California	Design consultation	-	7-7-48	7-13-48		X
W. R. McKenna to: Vermont Marble Company Rutland, Vermont	Procurement of process unit components	H. A. Collin	7-13-48	7-17-48	X	

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1226474

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
W. R. McKenna to: Standard Stoker Erie, Pennsylvania	Procurement of process unit components	J. B. MacKenzie A. K. Brennan	7-13-48	7-17-48	X	
L. H. Hildebrandt to: Vermont Marble Company Rutland, Vermont	Procurement of process unit components	H. A. Collin	7-13-48	7-17-48	X	
L. H. Hildebrandt to: Standard Stoker Erie, Pennsylvania	Procurement of process unit components	J. B. MacKenzie A. K. Brennan	7-13-48	7-17-48	X	
D. D. Streid to: Giffels & Vallet Detroit, Michigan	Design discussion	R. F. Giffels C. J.Steigleder	7-10-48	7-18-48	X	
A. T. Strand to: Puget Sound Navy Yard Bremerton, Washington	Consultation on experimental work	S. F. Allison	7-7-48	7-8-48		X
J. J. McCullough to: Crane Valve Company Chicago, Illinois	Conference on development	-	7-6-48	7-10-48		X
A. W. Jonson to: Giffels & Vallet Detroit, Michigan	Design consultation " "	W. D. Rausch W. D. Rausch	7-6-48 7-18-48	7-7-48 7-18-48	X	
A. R. Brooks to: Giffels & Vallet Detroit, Michigan	Design consultation	W. D. Rausch	7-26-48	7-31-48	X	
P. E. Collins to: Los Alamos National Laboratory Los Alamos, New Mexico	Inspection	E. R. Jette	7-25-48	7-29-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. A. Carlen to: Giffels & Vallet Detroit, Michigan	Technical consultation	C. J. Steigleder	7-24-48	Still gone	X	
A. J. Karnie to: Giffels & Vallet Detroit, Michigan	Design work	C. J. Steigleder	7-24-48	Still gone	X	
B. O. Shaver to: Kellex Corporation New York City, New York	Design conference	G. W. Hooker	7-20-48	7-25-48	X	
W. B. Webster to: Kellex Corporation New York City, New York	Design consultation	V. L. Parsegan	7-20-48	7-25-48	X	
H. W. Huntley to: Kellex Corporation New York City, New York	Design conference	J. D. Hagy	7-18-48	7-25-48	X	
P. M. Murphy to: Giffels & Vallet Detroit, Michigan	Design consultation	C. J. Steigleder	7-18-48	7-22-48	X	
W. C. Royce to: Kellex Corporation New York City, New York	Design conference	H. H. Willis	7-18-48	7-27-48	X	
H. H. Hubble to: Kellex Corporation New York City, New York	Technical conference	A. P. Weber G. W. Hooker	7-17-48	7-25-48	X	
J. M. Frame to: Kellex Corporation New York City, New York	Technical conference	H. H. Willis	7-20-48	7-26-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
R. H. Beaton to: Kellex Corporation New York City, New York	Technical conference	H. H. Willis	7-17-48	7-28-48	X	
F. P. Robinson to: General Electric Co. Schenectady, New York	Discussion and coordination of engineering details	J. S. Quill	7-11-48	7-28-48	X	
F. P. Robinson to: Giffels & Vallet Detroit, Michigan	Discussion and coordination of engineering details	C. J. Steigleder	7-11-48	7-22-48	X	
E. Hilgeman to: Bailey Meter Company Cleveland, Ohio	Inspection of equipment and consultation	P. S. Dickey	7-6-48	7-10-48	X	
W. E. Johnson to: Giffels & Vallet Detroit, Michigan	Consultation and inspection	C. J. Steigleder	7-3-48	7-9-48	X	
F. C. McInerney to: Northwest Copper Company Portland, Oregon	Coordinate design	C. Sigle	7-1-48	7-2-48		X
F. W. Wilson to: Giffels & Vallet Detroit, Michigan	Consultation	R. F. Giffels C. J. Steigleder	7-3-48	7-13-48	X	
F. H. Ames to: Giffels & Vallet Detroit, Michigan	Consultation	C. J. Steigleder	7-6-48	7-13-48	X	
O. S. Petrescu to: Puget Sound Navy Yard Bremerton, Washington	Consultation on experimental work	S. F. Allison	7-7-48	7-8-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
O. S. Petrescu to: American Machine & Foundry Buffalo, New York	Expedite design work	J. L. Lenton	7-12-48	7-23-48	X	
O. S. Petrescu to: General Electric Company Schenectady, New York	Expedite design work	J. S. Quill	7-12-48	7-23-48	X	
O. S. Petrescu to: Giffels & Vallet Detroit, Michigan	Expedite design work	R. F. Giffels C. J. Stoigleder M. M. Bush	7-12-48	7-23-48	X	
ELECTRICAL DIVISION						
I. Visitors to Other Installations						
H. A. Carlborg to: Bonneville Power Ad- Portland, Oregon ministration	Conference on power lines	S. E. Schultz	7-8-48	7-8-48		X
II. Visits to this Works						
K. R. White Northwest Electronics Spokane, Washington	Assist in revising and checking radio communication system at Gable Mt.	F. J. Mollerus J. C. Badenoch G. R. McKinney	7-28-48	7-30-48		X
HEALTH INSTRUMENT DIVISION						
I. Visitors to Other Installations						
F. E. Adley to: University of Rochester Rochester, New York	Consultation	H. Stokinger	7-16-48	7-18-48	X	
June Singlevich to: Brookhaven National Laboratory Brookhaven, New York	Biological conference	Dr. Nimms	7-24-48	7-26-48	X	

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
PROJECT ENGINEERING DIVISION						
I. Visitors to this Works						
R. D. Rowe General Machinery Company Spokane, Washington	Consultation on 313 Building mechanization	R. O. Mohann E. P. Lee G. R. Moore V. W. Wood	7-9-48	7-9-48	X	
H. I. Gustafson General Machinery Company Spokane, Washington	Consultation on 313 Building mechanization	R. O. Mohann E. P. Lee G. R. Moore V. W. Wood	7-9-48	7-9-48	X	
MANUFACTURING DIVISIONS' MANAGEMENT						
I. Visits to Other Installations						
C. N. Gross to: Carbide & Carbon Chemical Corp. Oak Ridge, Tennessee	Consultations pertaining to HW operations	S. R. Sapirie	6-28-48	7-2-48	X	
C. N. Gross to: General Electric Company Schenectady, New York	Consultations pertaining to HW operations	W. S. Macaulay H. A. Winne	6-28-48	7-2-48	X	
W. K. MacCready to: General Eng'g Consulting Laboratory Schenectady, New York	Consultations on 234-5 project	D. H. Marquis	7-27-48	7-28-48	X	
TRANSPORTATION DIVISION						
I. Visitors to this Works						
R. L. Holman Nordberg Manufacturing Co. Milwaukee, Wisconsin	Inspect power track laying equipment furnished by his Company	R. T. Cooke E. N. Hull	7-9-48	7-9-48		X

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
C. A. Thuener American Locomotive Company San Francisco, California	Inspection on the new Alco locomotives purchased by Hanford Works	R. T. Cooke	7-7-48	8-7-48		X
L. C. Ford General Electric Field Div. Seattle, Washington	Inspect new locomotives purchased by Hanford Works	R. T. Cooke	7-12-48	7-17-48		X
TECHNICAL DIVISION						
I. Visitors to this Works						
V. C. Hamister National Carbon Company Cleveland, Ohio	Inspect and discuss graphite usage in melt plant	C. W. J. Wende R. J. Schier	7-10-48	7-12-48	X	
H. G. MacPherson National Carbon Company Cleveland, Ohio	Inspect and discuss graphite usage in melt plant	C. W. J. Wende R. J. Schier	7-10-48	7-12-48	X	
G. H. Fancher National Carbon Company Morganton, North Carolina	Inspect and discuss graphite usage in melt plant	C. W. J. Wende R. J. Schier	7-10-48	7-12-48	X	
W. C. Berry Kellex Corporation New York, New York	Technical consultation and inspection	R. B. Richards	7-22-48	7-23-48	X	
W. C. Snow Kellex Corporation New York, New York	Technical consultation and inspection	R. B. Richards	7-22-48	7-23-48	X	
T. F. Freear Kellex Corporation New York, New York	Technical consultation and inspection	R. B. Richards	7-22-48	7-23-48	X	
II. Visits to Other Installations						

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. T. Stringer to: Argonne National Lab. Chicago, Illinois	Technical consultation and inspection concerning Redox Program	S. Lawroski	7-12-48	7-16-48	X	
D. W. Pearce to: Carbide & Carbon Chem. Corp. Oak Ridge, Tennessee	Technical consultation and inspection on metal	F. W. Hurd J. L. Waters	7-12-48	7-15-48	X	
D. W. Pearce to: Oak Ridge National Lab. Oak Ridge, Tennessee	Technical consultation on metal recovery, Hot Laboratory design and special isotope production	J. A. Swartout M. D. Peterson	7-12-48	7-15-48	X	
D. F. Shepard to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on Redox Analytical Methods	J. Flagg	7-26-48	7-27-48	X	
T. Prudich to: Giffels & Vallet Detroit, Michigan	Technical consultation	L. I. Brocke W. P. Ingalls	7-12-48	7-13-48	X	
J. G. Bradley to: Standard Oil Development Bayway, New Jersey	Inspect and acquire operational experience with large MS unit	F. W. Schumacher	7-19-48	7-23-48	X	
J. B. Work to: Knolls Atomic Power Lab. Schenectady, New York	Technical consultation on 234-5 project	J. Marsden D. H. Marquis	7-20-48	7-21-48	X	
J. B. Work to: Los Alamos Scientific Lab Los Alamos, New Mexico	Technical consultation and inspection of DP West, including Building #5	E. R. Jette	7-26-48	7-30-48	X	
B. Weidenbaum to: University of California Berkeley, California	Discussions on Plutonium chemistry	L. Brewer R. E. Connick	7-23-48	7-24-48	X	

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215

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
B. Weidenbaum to: Los Alamos Scientific Lab Los Alamos, New Mexico	Technical consultation and inspection of DP West, including Building #5	E. R. Jette	7-26-48	8-4-48		X
O. H. Greager to: Knolls Atomic Power Laboratory Schenectady, New York	Technical consultation	J. Marsden	7-27-48	7-31-48		X
L. L. Burger to: Knolls Atomic Power Laboratory Schenectady, New York	Attend Analytical Meeting	J. Marsden	7-26-48	7-27-48		X
R. E. Curtis to: Research Laboratory Schenectady, New York	Analytical Meeting	Research Lab personnel	7-29-48	7-30-48		X
L. L. Burger to: Argonne National Laboratory Chicago, Illinois	Technical consultation on Redox Program	S. Lawroski	7-28-48	7-28-48		X
R. Toats to: Joslyn Mfg. & Supply Fort Wayne, Indiana	Supervise metal fabrication	L. S. Frye	7-6-48	7-19-48		X
W. T. Kattner to: Joslyn Mfg. & Supply Fort Wayne, Indiana	Supervise metal fabrication	L. S. Frye	7-6-48	7-19-48		X
T. S. Jones to: Vulcan Crucible Steel Aliquippa, Pennsylvania	Observe alpha rolling trial	Mr. Flower	7-23-48	7-25-48		X
T. S. Jones to: Simonds Saw & Steel Co. Lockport, New York	Supervise metal fabrication	A. D. Potts	7-26-48	7-31-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
R. D. McGreal to: Simonds Saw & Steel Lockport, New York	Supervise metal fabrication	A. D. Potts	7-26-48	7-31-48	X	
R. Teats to: Joslyn Mfg. & Supply Co, Fort Wayne, Indiana	Supervise metal fabrication	L. S. Frye	7-27-48	7-30-48	X	
R. Ward Battelle Memorial Institute Columbus, Ohio	Discuss metallurgical problems	H. W. Russell	7-7-48	7-8-48	X	
R. Ward to: Argonne National Laboratory Chicago, Illinois	Discuss metallurgical problems	J. F. Schumer	7-8-48	7-8-48	X	
III. Visitors (Consultants) to this Works						
H. H. Willard University of Michigan Ann Arbor, Michigan	Consultation	T. W. Hauff R. E. Curtis	7-19-48	7-20-48	X	
N. H. Nachtrieb University of Chicago Chicago, Illinois	Consultation	T. W. Hauff R. E. Curtis	7-22-48	7-25-48	X	
"P" DIVISION						
I. Visits to Other Installations						
J. E. Maider, Jr. to: General Engig & Consult- Schenectady, N.Y. ing Laboratory	Consultation on new pile construction	B. R. Prentice	7-14-48	7-15-48	X	
J. E. Maidor, Jr. to: Knolls Atomic Power Laboratory Schenectady, New York	General discussion	W. R. Kanne	7-14-48	7-15-48	X	

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COMMUNITY DIVISIONS

SUMMARY - JULY 1948

ORGANIZATION AND PERSONNEL

Number of employees on roll	Beg. of Month	End of Month
Community Administration	11	11
Public Works	428	429
Commercial Facilities	16	15
Housing	33	40
Community Fire	125	126
Community Patrol	147	146
Community Activities	12	11
	772	778

This increase is due primarily to increased load of house allocations and administration in the Housing Division.

GENERAL

A revision of village bus routing was made to accommodate residents in the newly constructed housing areas.

PUBLIC WORKS

The Tenant Service Group was decentralized and the work reverted to the Commercial Facilities, Activities and Housing Divisions.

The seeding of public areas, as called for in Project C-134, was started July 30, 1948.

131 housing units were renovated during the month.

HOUSING

A total of 4689 family housing units were occupied as of July 30, 1948. 71 units were assigned but not occupied due to various reasons.

The balance of the 333 houses and 64 apartments, being built by Atkinson-Jones Construction Company, were completed and released for occupancy during the month.

COMMERCIAL FACILITIES

The monthly survey of basic food sales shows a decrease of approximately 10% from June sales. 10 facility operators were granted permits for various improvements to the property being leased by them. In all cases the work is to be performed at the operators' expense.

COMMUNITY ACTIVITIES

During the month ground was broken for construction of a new swimming pool near Swift Street and Long Avenue. The existing swimming pool was opened to the public after being closed during the flood emergency.

PATROL

402 traffic violation tickets were issued. 79 prisoners were processed through the Richland Jail.

An extensive training program is being followed in order to fully utilize the services of R. L. Soule and D. F. McCall during their temporary assignment on the project.

FIRE

56 fire alarms were answered during the month. These fires resulted in an estimated loss of $108.78 to the project and $1472.22 to personal property of project employees.

1026 buildings were inspected with respect to fire prevention.

COMMUNITY DIVISIONS

COMMUNITY ADMINISTRATION

JULY 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll	July
Beginning of month	11
End of month	11
No Change	0

GENERAL

Preliminary project proposals, supporting the summary budget estimates for the village construction budget, were completed and forwarded to the Appropriations and Budget Committee for its review and submittal to the Atomic Energy Commission.

Conferences were held with representatives of the Maintenance Division relative to the cost reduction program undertaken by this division in order that there be correlation of activities under the general program.

In cooperation with the Transportation Division, there was a revision of the village bus routes in order to take care of the residents of the newly constructed housing areas. In addition, a small change in route was initiated in order that employees living in the Nettleton-Sound barracks would be given more adequate service. These changes in bus routings were preceded by the necessary publicity in the Richland Villager and the Works News.

Request for appropriations were submitted to the Appropriations and Budget Committee as follows:

1. By-Pass Highway, Yakima River Trestle and Approaches.
2. Clothes Pole Installations - 1799 Sets.
3. Insulating Heat Ducts - 450 Pre-Cut Houses.
4. Sacajawea Grade School and Nursery School, Improved Food Handling Facilities.
5. Sacajawea Grade School, Automatic Stokers.
6. Lighting, Park Tennis Courts.
7. Improved Servicing Access, Dormitories.
8. Dust and Pollen Control Program.
9. Central Storage for Fuel Oil.
10. 800 Additional Permanent Dwellings.
11. 200 Additional One-Bedroom Apartments.
12. Additions to Village Steam Distribution Grid.

Community Administration

The following type A and B work authorities were requested of the Design and Construction Divisions:

1. Additional Areas for Commercial Facilities (A).
2. Reactivate Flow of Drainage Ditch under George Washington Way (B).
3. Clothes Pole Installations - 1799 Sets (A).
4. Insulating Heat Ducts - 450 Pre-Cut Houses (A).
5. Sacajawea Grade School, Automatic Stokers (A).
6. Sacajawea Grade School, Improved Food Handling Facilities (A).
7. Administration Office Space, Community Divisions (A).
8. Installation of Sidewalks, Curbs and Gutters, Symons Street, Potter to Goethals Drive (A).

In addition, Public Works Division of the Community Divisions was requested to prepare projects on the following items:

1. Lighting, Park Tennis Courts.
2. Improved Servicing Access, Dormitories.

A work order was issued to the Project Engineering Division relative to the preparation of a project covering the Dust and Pollen Control Program.

The Community Safety Committee, during the month, recommended the following measures:

Approved plans for pedestrian safety campaign in cooperation with the neighboring communities of Kennewick and Pasco.

Putting into effect, for Richland, the safety regulations which control the amount of gasoline transported by bulk gasoline trucks and trailers.

Improvement of traffic routing and parking at the commercial bus depot.

Establishment of a higher speed limit between the Yakima River bridge and Thayer Drive in order to stimulate a higher traffic flow on the by-pass road.

Better control of pedestrian traffic in the vicinity of the cafeteria.

More efficient safety practices on the part of construction forces working in the village. In this connection a letter was written to the Design and Construction Divisions pointing out the examples of violations of correct safety procedure.

COMMUNITY DIVISIONS
PUBLIC WORKS DIVISION
JULY, 1948

GENERAL

Plans are being made to complete the transfer of community functions now operated by plant groups as soon as convenient for all concerned.

The work of opening George Washington Way at the ditch has been accomplished by construction forces. The dike has been pushed out in this area and the culvert under the road replaced, and the road widened. The road elevation at the ditch has been raised two feet and the repaired road is being resurfaced.

Decision for further disposition of the dike will be dependent on action by the Corp of Engineers at Portland directly connected with the McNary Dam project.

The relocation of the house at 1210 Gowen is being accomplished by construction forces and is to be done in the most economical method possible. They are also rehabilitating the damaged house to the north of 1210 Gowen.

A study is being prepared by the design division comparing the relative costs and advantages of eliminating Hains Ave. where it parallels the river and providing access to these residences from the existing park ways.

A study is being made to determine the extent to which maintenance repair in the homes could be diverted to tenant responsibility.

ORGANIZATION & PERSONNEL

Number of employees on payroll:	Exempt	Non-exempt	Total
June 30, 1948	39	389	428
July 31, 1948	38	390	428

During the month of July the following personnel changes were made:

New employees		14
Terminations		5
Transfers out	1	6
Sick Leaves		2

ENGINEERING SECTION

General

The normal duties of inspection, scheduling, and follow-up consultation and general planning were performed during the month. Contacts with members of the Construction Group were continued relative to Richland

houses, facilities, and dormitories. The necessary liaison work with the design division, where we were designated as the contact engineer, was performed.

Items of Interest

The Tenant Service Group was decentralized and the work reverted to the Commercial, Community, and Housing Divisions.

All the necessary back charge estimates for the Community Groups were prepared.

The work of coordinating all parties concerned on the following jobs was performed:

1. Seal coating streets.
2. Expansion interblock compounds

The low bidder, West Coast Painters Co., Seattle, Washington, for the painting of 514 houses has resubmitted an adjusted figure to cover his proposed work. This revised figure is waiting approval of the Atomic Energy Commission before the final award is granted. If this approval is given, work will be started immediately by the contractor.

The seeding and landscaping program that is being planned for the next two years was reviewed with the project group and A.E.C.

Work orders were issued and necessary follow-up was made on all public buildings, streets and grounds.

The seeding of public areas, project No. C-134, was started 7-30-48.

The area west of multiple housing road is scheduled for a six inch irrigation line and is to be seeded with rye grass and clover. Work is to be started the first week in August.

A final inspection was made of the Frozen Food Locker Addition - Campbell's Food Store and tentative approval was given for occupancy. Certain minor exceptions were listed for correction.

Proposal approval and assignments of ground space were given the following facilities:

a. Church of Latter Day Saints
b. Furniture Store - Wilson
C. Furniture Store - Davis
d. Christian Science Society
e. Standard Service Station
f. Klopfenstein's Clothing Store

Drawings and specifications were approved and building permits issued for the following alterations and additions:

a. Rainbow Service Station - True's Oil Company
b. Jewelry Store - Building 92-X

Community Public Works Division

Regular field inspections are made in compliance with building permit requirements.

Facility Sponsored Construction approximates the following schedule:

Facility	Construction Started	Status % Complete	Estimated Completion Date
Associated Service Station - Additional pump isle	June 14, 1948	95	August 9, 1948
Richland Plumbing & Heating	June 7, 1948	75	August 15, 1948
Jewelry Store, Alteration, 92-X	June 22, 1948	15	August 23, 1948

Materials and equipment required for projects prepared by the Project Engineering Division will be coordinated and processed by the Material Control Group of the Community Engineering Section. This control is necessary in order that project material requests can be coordinated and requisitions and bills of material routed through the Project Engineering Cost Group for notation.

Assistance was furnished to divisions of the Public Works Organization in the obtaining of materials and equipment and also maintaining the necessary control records.

Electrical surveys included the following:

a. Inspections of electrical wiring at the following facilities and forwarding of necessary recommendations:

1. American Legion Club
2. Coordinate Club
3. Masonic Club
4. Castle Club
5. Civil Air Patrol

b. Desert Inn - changes in electrical service were studied and approvals obtained for moving the transformer tower to the northeast side of the building and rearranging the interior load center.

The inspection and acceptance of new houses to date is as follows:

	Previously accepted	Accepted in July
M, Q, R, & S Type	279	54

(This completes the total of 333 M, Q, R, & S type houses)

Y & Z (Ranch type) - Preliminary inspection was made on number 1 ranch type house.

Community Public Works Division

The forecast for acceptance of new houses for the coming month is as follows:

Y & Z (Ranch type)	112
T Type (Terteling)	10

60 alteration permits were completed during the month.

Tract Houses, remodeling - July, 1948

House No.	Work Order Issued	% Complete
K-784	5-21-48	90
0-1205	5-21-48	0
L-865	6-28-48	0
0-1224	6-17-48	0
K-780	4-14-48	90
K-788	5-21-48	0
0-1246	4-19-48	90
0-1247	4-19-48	90
L-895	5-10-48	0
L-859	7-15-48	10
K-739	7-29-48	0

240 necessary inspections were made during the month for Tenant Relations Group.

Community Engineering, General Electric Construction, Maintenance, and the sub-contractor made an inspection of oil burners in Area "A" to check the completion of the units. Inspections were satisfactory except for a few exceptions which will be corrected.

An inspection of the Yakima River Bridge on By-pass highway was made during the month and the bridge was accepted.

An inspection was made of the walks and roads in the multiple housing units and they were accepted with a few exceptions. These exceptions will be corrected.

Personnel

Number of employees on payroll at the beginning of the month	18
" " " " " " " end of month	12

A. I. Moore and five non-exempt personnel were transferred to the Housing Division.
V. J. Bryon and one non-exempt personnel were placed on special assignment to J. M. Heffner.

Received: D. B. Clay to replace A. I. Moore in Inspection Division
A. B. Williscn to assume the duties of draftsman and estimator.

Community Public Works Division

MAINTENANCE SECTION

General

That part of the flood rehabilitation work assigned to Community Maintenance has been completed as follows: lighting at the soft ball park; re-flooring and wiring of the Masonic Temple; calking cracks, repairing the drain and wiring and re-installing plumbing fixtures at the swimming pool; and replacing water heaters on Haines Avenue. An inspection of the interior of all houses along Haines will be conducted and repairs made to correct conditions resulting from house settlement.

The re-classification of weekly wage roll employees became effective July 19; and individual interviews were conducted to explain to each man how he was affected.

A study and review on spare parts for maintenance repair purposes has been temporarily laid aside pending outcome of probable release of maintenance work on facilities and school equipment.

A revised work order system and procedure is under study.

Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
June 30, 1948	18	199	217
July 30, 1948	18	198	216

During the month the following personnel changes were made:

New Employees	3
Transferred from Labor Section	2
Terminations	3
Sick Leaves	3

Safety

No major or sub-major injuries or near serious accidents occurred during the month.

Progress

Renovations - During July 131 housing units were renovated. 23 orders not completed are on hand.

Reconditioning of Dorm. W-21 - This job was completed July 30.

Inside Painting Program - The interior of 21 conventional type units were painted during the month.

Kitchen sink linoleum - Linoleum was replaced on the tops of 178 units during July.

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Mail boxes in dorms - Project C-242 - This job is 99½% complete. The balance of the mail boxes were to have been shipped by fast freight from Chicago on July 22. Delivery is expected the first part of August. Inspections and acceptances are planned within a few days after the boxes arrive.

Exterior House Repair - The carpentry repairing of conventional houses preparatory to outside painting has progressed as follows: Div. 7, 45% - Div 5, 95% - Div. 4, 95%.

Dormitory Air Conditioning, project C-158 - This work is 98% complete. The final inspections are planned for Aug. 5.

Furniture Repair and Upholstery - 216 articles of furniture were recovered, repaired, or refinished during July.

Outside Painting - Exterior painting was completed on 2 tract houses.

Remodeling tract house L-859, Project C-245 - This project is approximately 10% complete. It is estimated that the work will be completed about Sept. 15.

LABOR SECTION

General

Work on project C-134 consisted of routine maintenance.

Routine maintenance was carried out on project orchards during the month.

Due to the discontinuance of the six day work week it was necessary to establish two new garbage routes rendering bi-weekly service as in the past.

A new trash collection route was established rendering weekly service. It was felt weekly service was sufficient if used as intended. The above has been widely publicized in both plant and off plant papers.

A total of 31 personal moves were accomplished during the month.

56 refrigerators and 56 electric ranges were installed in new homes.

10,768 pounds of grass seed were mixed and delivered during the month.

Delivery of fuel oil was started 7/15/48

Delivery of coal has been delayed due to repair work at the coal ramp, however deliveries are scheduled to start August 2nd.

The Wyoming coal originally ordered in small lumps was found to be deteriorating too rapidly due to the hot sun so it was decided to request larger lump coal from the vendor at least until later in the fall.

Community Public Works Division

Requisitions have been written for purchase of coal handling equipment for delivery to residences and most orders have been placed. It is estimated that this equipment may be in use by October.

Efforts are being made to obtain a truck scale for installation in the coal yard so that coal deliveries may be weighed if necessary.

Normal routine work throughout the village progressed as scheduled.

Coal Delivery

On hand July 1, 1948	707,500
Received during July	3,782,800
Transferred to 3000 Area	2,621,700
" " 101 "	650,100
" " 700 "	32,100
" " Hot Plant	20,000
On hand - end of July	1,166,500

Fuel Oil Inventory

Gallons on hand July 1, 1948	16,999
Received during July	16,845
Delivered to Village Houses	18,169
Gallons on hand end of July.	15,675

Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
June 30, 1948	14	177	191
July 31, 1948	14	184	198

The following personnel changes were made during the month:

New employees	11
Terminations	2
Transfers out	3

COMMUNITY DIVISIONS

COMMUNITY COMMERCIAL FACILITIES DIVISION

July 1948

ORGANIZATION AND PERSONNEL — JULY

Number of employees on payroll:	
Beginning of month	15
End of month	16
Net increase	1

COMMERCIAL FACILITIES

The following figures indicate trends in commercial activities as related to various basic items:

	June	July
Cafeteria Meal Customers (Progressive)	161,984	147,713
Percent of room-day occupancy, Desert Inn	95.6%	95%
Gallons of ice cream sold	17,090	23,920
Carnation milk and cream deliveries (gal)	103,126	90,975
Darigold milk deliveries (in stores)	8,228	7,9[illegible]
Theater customer count	56,077	47,555
Gallons of gasoline sold	335,866	239,617

Total number of Commercial Facility Operators' employees, full and part time, as of July 31, 1948 - 1,206.

Desert Inn relocated evaporative coolers in basement boiler room to improve cooling in hotel lobby, at operator's expense. A street side neon sign is also being installed at operator's expense. The dining room installed two Chrysler Refrigerated air conditioners at the operator's expense.

Elite Shop was authorized to install a cooling system at operator's expense.

Village Food Store was authorized to install an evaporative type air cooler at operator's expense.

Progressive Cafeteria has provided a mobile type "Roast Cart" (hot food table side service for evening meals) at operator's expense.

Safeway Stores has been authorized to install a 10' Tyler Meat Case and two additional exterior signs, at operator's expense.

Richland Jewelry Company has started remodeling activities at building 92-X, at operator's expense.

Authorization has been granted to proceed with plans for modernizing and enlarging Pennywise Drug, at operator's expense.

Revision of Recreation Hall cigar stand area, at operator's expense, is nearing completion.

Provision of an additional pump island at Associated Service Station, at operator's expense, is nearing completion.

Additional equipment has been received and will be installed soon, to increase the output of Richland Laundry and Dry Cleaners by approximately 50%.

On July 1, 1948, this department assumed the duties of handling patrol-type Repair Orders for Commercial Facilities that were formerly handled by Tenant Service.

CONTRACTS AND NEGOTIATIONS

A Letter of Agreement dated June 10, 1948, was entered into by and between General Electric Company and Cascade Coca-Cola Bottling Co., Inc., covering furnishing of Coca-Cola in the North Richland area.

An Invitation to Bid for the construction and operation of an Automotive Sales and Service agency was mailed on July 24, 1948.

Invitations to Bid for the construction and operation of additional businesses in Richland will be mailed to prospective applicants in the near future. As soon as suitable site locations can be determined, it is planned to select operators for food stores, service stations, drugstores, fountain lunch, print shop, and general garage. Invitations to Bid on the majority of locations in the new commercial area are being withheld pending definite determination of floor elevations, installation of master utility lines and preparation of area.

Steps are being taken to select operators for a beauty salon, laundry and dry cleaning pick-up station, and watch repair facility to be established in North Richland.

INVENTORY AND PROPERTY

The annual 1948 inventories of Government equipment at the following locations were completed:

Castleberry's Drug Center
Garmo's Food Store
Village Food Store
Campbell's Food Store

REQUESTS FOR ESTABLISHMENT OF BUSINESSES IN VILLAGE

A number of individuals expressed a desire during the month to establish and operate businesses in Richland. The types of establishments desired are shown in the following list:

Alterations Shop
Automobile Agency
Barber Shop
Beauty Salon
Coin Machine Facility
Cold Storage Lockers
Doughnut Shop
Drug Store
Dry Cleaning Plant
Electrical Repair Shop
Firestone Dealer Store
Food Store
Funeral Home
Fur Store
Garage & Service Station
Garbage Disposal Service
General Merchandise Store
Golf Driving Range
Ice Delivery Service
Infants' & Children's Store
Insurance Office
Jewelry Store & Gift Shop
Laundry & Dry Cleaning Pick-up Station
Laundry & Dry Cleaning Establishment
Malt Shop
Men's Clothing Store
Milk Depot
Miniature Golf Course
Music Store
Plumbing and Heating Shop
Printing Shop
Restaurant
Riding Academy
Roller Skating Rink
Service Station
Sporting Goods Store
Tavern
Transfer and Storage Line
Watchmaking Shop
Women's Wear

Written permission was granted to twelve (12) Village tenants to conduct the following part-time businesses in their homes:

Sell Westmoreland Sterling
Sell Harford Frocks (2)
Sell Knapp Shoes
Sell chenille bedspreads
Make and sell hand-loomed rugs
Sell Christmas cards
Do portrait photography work
Sell "Wear-Ever" cooking utensils
Sell Model Airplanes
Sell hand-made novelties, tropical fish, and do party catering
Sell "Popsicle molds"

Written permission was granted twelve (12) individuals living outside of Richland to contact Village tenants on an appointment basis on the following business matters:

Represent Farmer's Automobile Club, Inc.
Sell Fuller Brushes
Represent Northwestern Tailoring Co.
Sell Stanley Products
Represent the Northern Life Ins. Co., the Continental Casualty Co. and the Brown General Agency
Sell "Rexair" home appliances (4)
Represent Vaught Furniture & Hardware (2)
Represent the Western Life Insurance Co.

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

July, 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	July
Beginning of month	34
End of month	41
Net increase	*7

* Transfer of Tenant Relations to Housing Division

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	Pre-Cuts	Pre-fab	Apts.	Tract	Total
Operations	2208	259	387	1129	66	37	4086
Facilities	130	2	14	111	1	11	269
Government	101	22	15	42	2	9	191
Kellex Corporation		6	7		1		14
Morrison-Knudsen	3		1		1		5
Atkinson-Jones	12	28	15	12	2		69
J. Gordon Turnbull		2	2	10			14
Giffels & Vallet		1	1	9			11
J. A. Terteling & Sons			1	2			3
McNeil Construction Co.			1	3			4
Newberry Neon Electric		2	2				4
Urban, Smythe & Warren	1	2	1		1		5
Graysport Construction						8	8
Newport-Kern Kibbe						1	1
Vernita Orchards						5	5
TOTAL HOUSES OCCUPIED	2455	324	447	1318	74	*71	4689
Houses utilized for special purp.						1	1
Houses assigned (leases written)	9	4	1	2			16
Houses assigned - awaiting tenants	36	5	2	12			55
Government houses - unassigned						**34	34
TOTAL HOUSES	2500	333	450	1332	74	106	4795

* Occupancy figure includes 4 houses occupied by Bonnerville Power in Priest Rapids and White Bluffs.

** This includes 29 Tract Houses boarded up for salvage.

COMMUNITY HOUSING DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2420	123	88	2455	Plus 35
Block Type	244	84	4	324	Plus 80
Precut Type	445	16	14	447	Plus 2
Prefab Type	1302	51	35	1318	Plus 16
Apartments	73	1		74	Plus 1
Tract	63	8		71	Plus 8
Total	4547	283	141	4689	Plus 142

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	14	534	*22	556
Men - Unoccupied				
Women - Occupied	14	576	*16	592
Women - Unoccupied				

Women's Dormitories Occupied by:

G. E. Office	1
Education	1
Apartment	1
	31

* This includes 6 beds in W-9 and 10 beds in M-12 not in use. Space in W-9 is being used for Supply Rooms and Dormitory Offices. Space in M-12 is being used for F. B. I. offices.

GENERAL

The last of the Atkinson and Jones houses were received on the sixteenth of July completing a total of 333 houses plus 64 apartments.

Graysport Construction Company did not lease Tract House J-713 as reported last month because it is located too far from town.

At the request of the Telephone Division, the Housing Inspectors began removing telephones from vacant houses. 72 telephones were taken out of vacant houses during the month of July.

Tract house K-789 was renovated and leased at $40.00 per month.

The ranch type move was closed July 1, 1948 at 5:00 P.M. All applications were reviewed: 155 were approved, 55 were rejected.

TENANT RELATIONS

The processing of patrol orders and work orders during the month is as follows:

	Incomplete 6-29-48	Issued During July, 1948	Incomplete 7-29-48	Issued Prev. Month
Patrol Orders - Days	1667	3199	1668	4011
Patrol (off shift elect.)	0	409	0	451
Patrol (off shift Maint.)	8	291	4	254
Regular work orders	401	20	187	62
Backcharge Tenant Relations orders	51	116	38	116
Routine Work Requests	53	3	58	6

107 Scrap Lumber Permits were issued during the month of July as compared to 119 during the previous month.

15 conventional type dwellings were painted by Project forces.

235 Grass Seed Permits were issued which amounted to 9458 pounds of seed.

633 Home Fire Inspections were reported and processed. 1157 homes were visited.

Items of Interest:

1. Window glass replacement requests (all types) amounted to 105 outstanding for the month.
2. Sink linoleum replacement requests amounted to 101 as compared to 127 of previous month.
3. Bathroom painting requests were 53 as compared to 103 of previous month.
4. Kitchen and bathroom faucets in need of repair and exchange, amounted to 439.
5. Screen door requests amounted to 36.

Alteration permits issued to tenants during the month of July 1948 amounted to 256 as compared with 521 issued during the month of June. Permits issued during July consisted of the following:

Air conditioners (conventional houses and prefabs)	163
Air conditioners (A & J houses)	18
Air conditioners (precuts)	19
Air conditioners (Apts. on Geo. Wash. Way)	3
Refinish floors	7
Basement excavations	6
Install automatic washers, dryers, and diswashers	24
Install rear door in 3 bedroom prefab	4
Install partitions in basements (Q-R-S-M)	6
Rewire tract houses (Graysport Construction Co.)	7
Install patio at rear of house	1

Permits issued (cont'd)

Install hinges on cabinet panel doors	1
Install 20 amp circuit in basement	1
Install 2 outside water faucets	1
Install lining inside partition of basement wall	1
Install slat awnings on house	1
Install sprinkler system of 29 heads	1
Install outdoor fireplace	1
Install cement sidewalks	1
Total Alterations for Month of July	266

COMMUNITY DIVISIONS

COMMUNITY FIRE DIVISION

JULY, 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	July
Beginning of month	125
End of month	128
Terminations	0
New employees	3

	Richland	North Richland
Response to Alarms	31	25
Fire Loss (Estimated)		
Hanford Works	$5.00	$103.78*
Personal	1399.22	73.00
Investigations of Minor Fires and Incidents	10	10
Inspections Made (Buildings)	1026	0**
Extinguishers		
Inspected	626	0**
Installed	28	0**
Recharged	92	0**
Removed	23	0**
Safety Meetings	21	8
Outside Drills	58	54
Inside Drills	87	48
Fire Alarm Boxes Tested	130	0**
Fire Hose Tested, 2½-Inch	2900 feet	300

*A fire which occurred on 7-19-48 may have resulted in a loss somewhat greater than the original estimate. A & J Electrical Supervisor stated that the exact amount of damage would be furnished upon completion of repairs.

**Arrangements were made by M. H. Cooper, Superintendent of the G. E. Construction Fire and Safety Division, to transfer all fire prevention responsibilities in North Richland to the Atkinson-Jones Company, effective July 1, 1948.

COMMUNITY DIVISIONS

COMMUNITY PATROL

JULY 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:		July
Beginning of month		147
End of month		146
Net decrease for month		1
Reason: V. T. Personal	3	
Less New Hires	2	
Net decrease	1	

GENERAL

Effective July 1, 1948, a Reports and Records Section was established in the Administration Section of the Community Patrol Division to be under the command of Capt. C. F. Klepper. The Plant Patrol Records Section, which formerly functioned for both divisions of Patrol, in the future will operate as a separate unit.

Effective July 3, 1948, the point control traffic post at the intersection of Knight and Goethals Streets was re-established to be in effect from 4:40 p. m. to 5:15 p. m. daily, except Saturday and Sunday, and 7:45 a. m. to 8:10 a. m. daily, except Sundays.

A Patrol post was established at the Nettleton Sound construction barracks, effective July 3, 1948, to be manned on the second and third shifts Monday through Friday and on all three shifts on Saturday, Sunday, and holidays. On July 9, 1948, the posting of a man at this post on the second shift, Saturday, was discontinued.

Effective July 9, 1948, a point control traffic post was established at the intersection of George Washington Way (alternate) and Thayer Drive to be in effect between the hours of 4:30 p. m. and 6 p. m. daily, except Sundays.

Effective 2:30 p. m., July 6, 1948, radio station WGMB 12 was established and assigned to the Richland Village Patrol. This unit is located in the desk sergeant's office in the 770 Building and is operated by the sergeant on duty.

Between July 12 and July 21, 1948, inclusive, two men were assigned 8 hours daily to escort painters in Area "A" who were renovating leased homes, in instances where occupants were not at home. Effective July 26 through July 29, 1948, one man was assigned to this detail each day.

Effective July 16, 1948, the railroad spur crossing over Stevens Drive is manned by Patrol during shift changes for the purpose of expediting bus traffic only.

Effective July 16, 1948, arrangements were made through our North Richland Patrol to transport drunks, or other persons to be jailed, from the Richland and Prosser barricades due to the lack of facilities in the Plant Patrol. This has reference to persons picked up inside an area or within the outer perimeter and who are delivered to the barricades by any one of the Area Patrols. Under this arrangement the officer in charge at the barricade will process the prisoner, complete papers, sign authorization to jail the party, and submit a report covering the incident.

Effective July 20, 1948, a temporary trailer camp foot patrol post was established. Three men are assigned to this post 24 hours daily and each are assigned a separate zone to cover.

Effective July 23, 1948, as a temporary measure, one Patrol post was discontinued and three others consolidated to form what is known as the Shop Area Patrol and the Barracks Patrol. The Shop Area Patrol covers the shop area south of the irrigation ditch to Spangler Road and east of George Washington Way through the trailer camp. The Barracks Patrol covers the area between George Washington Way and Stevens Drive north of the irrigation ditch or First Street through the north end of the trailer camp.

On July 29, 1948, Patrol was granted authority by the Benton County Sheriffs Office to manually operate the stop light at the "Y" intersection and to police traffic between the Yakima River and the "Y". A survey was made to ascertain to what extent this action was necessary, and it was decided that this action would not be required at this time. The letter of authorization from Sheriff Cochran is being retained in Patrol files for use if the above action becomes necessary.

During the month of July, the Motor Patrol made frequent checks of persons observed hauling scrap lumber or other lumber in private cars. Persons observed were requested to show permits.

Throughout the month of July, frequent checks were made on all irrigation ditches and other waters. All children found wading, swimming, etc., were ordered out and warned of the dangers of such practices.

Motor Patrol continued to make occasional checks of the Nettleton Sound construction areas throughout the month.

Patrol continued the weekly check of the Patrol boat through the month of July.

Seventy-nine prisoners were processed through the Richland jail during the month of July, 1948.

On July 19, 1948, Patrol began intermittent checks for mischievous children in the vicinity of 1210 Gowan Street around homes which were vacated during the recent flood. This check was to be continued until further notice.

TRAINING

Effective July 2, 1948, Asst. Chief R. L. Soule was appointed to serve on the Health Activities Committee to replace Capt. W. A. Ziegler.

Effective July 2, 1948, the assigning of Community Patrol personnel to the Patrol Range on their regularly scheduled range day, was discontinued until further notice. This was done to take advantage of the full time of Patrol Instructors R. L. Soule and D. F. McCall, since they will return to Washington State College for their regular employment early in September.

Training topics and demonstrations covered during the month of July are as follows:

Regular School Subjects

History of Transportation
Traffic Problems
Minimum Speed Calculations
Accident Investigation Procedures
Court Presentation (What to Do - How to Act)
Model Uniform Motor Vehicle Acts
Model Uniform Traffic Ordinances
Uniform Signs and Signals

Search

Tear Gas Tactics
Conditions of Criminality
General Investigation Guide
Crime Scene Examination Guide

Photography

Handling of Cameras
Use of Exposure Meter
Depth of Field and Its Value
Photograph Flash Photography
Handling Film
Camera Shutters
Shutter Speeds vs Diaphragm Openings
Guides for Taking Pictures at Scenes of Police Action

Effective July 22, 1948, Patrol Training Instructor R. L. Soule began an instruction course in photography and use of the 4 x 5 Graflex camera. This instruction is to be given all Patrol supervision to enable them to take pictures when necessary without calling our regular photographer, when off duty.

An additional quantity of police reference books were received during the month of July and were added to the Patrol library now in operation.

Qualifications in Army "L" course firing were as follows:

	May	June	July
Unqualified	10%		
Marksman	30%		
Sharpshooter	15%		
Expert	45%		

Note: No Army "L" course firing was given for the month of June due to the flood emergency. No Army "L" course firing was given for the month of July in order to utilize the full time of the Instructors R. L. Soule and D. F. McCall as outlined in paragraph above.

RICHLAND AREA (VILLAGE)

	May	June	July
Check on absentees	15	11	9
* Persons assisted	369	305	284
Doors and windows found open in commercial facilities	20	14	15
Lost children found	13	6	7
Ambulance runs	44	61	50
Lost dogs reported	1	1	1
Dog and cat complaints	32	33	31
Persons injured by dogs	10	7	8
Bank escorts and details		42	36
Fires investigated		37	28
Misc. escorts		40	52
Complaints investigated		76	100
Missing persons reported		7	3
Totals	514	640	624

* Includes: Persons admitted to residence; transportation for nurses and technicians to hospital on special night calls; delivery of messages to residents who have no telephone; and opening trailer parking lot for individuals.

Note: A further breakdown of Patrol functions has been made beginning with the June report. This will account for blank spaces under various headings for month of May.

RICHLAND AREA (NORTH)

	May	June	July
Check on absentees	0	0	13
* Persons assisted	784	717	596
Doors and windows found open in commercial facilities		22	31
Lost children found		3	3
Ambulance runs	15	9	4
Lost dogs reported		0	4
Dog and cat complaints		1	7
Persons injured by dogs		0	4
Bank escorts and details	23	26	27
Fires investigated		18	26
Misc. escorts	109	79	60
Complaints investigated	122	149	133
Missing persons reported		0	0
Totals	1053	1024	788

* Includes: Admitting persons to their rooms; contacting parties on long distance calls; issuing rooms and bedding; locating persons wanted for various reasons; relaying messages; etc.

Note: A further breakdown of Patrol functions has been made beginning with the June report. This will account for blank spaces under various headings for month of May.

TRAFFIC SECTION

Effective July 12, 1948, Lt. J. E. Coleman was appointed to the North Richland Traffic Committee to represent Patrol in matters to be decided by this committee.

A motion picture entitled "X Marks the Spot" was received during the month and will be used to supplement our Adult Drivers Training instruction.

Two hundred leaflets entitled "Sammy Sprocket Says" were received during the month and distributed to students enrolled in the Patrol bicycle.school.

Bicycle school training classes were conducted at John Ball, Jefferson and Sacajawea schools during the month with a total of 254 students in attendance.

A survey was made at all schools and recommendations were made as to adequate traffic control signs and marked crosswalks needed to afford greater safety for Richland and North Richland school students.

Practical instruction in Adult Drivers Training was continued for the month.

A quantity of "posed" photographs were made for the Operations and Construction Safety Departments to be used in their work. These pictures illustrate safe practices in connection with heavy equipment.

Five talks on Traffic and related subjects were made during the month by Traffic personnel at Safety Meetings attended by approximately 250 employees.

On July 16, a Pedestrian Safety Campaign was begun in Richland and North Richland. The Patrol Traffic Section is taking an active part in this campaign by taking pictures of pedestrain violators for local newspapers. Men were assigned to heavy pedestrian areas in Richland and North Richland, equipped with portable public address "mikes" to warn pedestrians observed "jaywalking".

TRAFFIC AND OFFENSE STATISTICS

These are presented in separate tables at the end of this departmental report. A comparison of Richland Offense Statistics with outside averages also is presented.

PATROL

A total of 187 unusual incident reports was received, which consisted mainly of Accidents, Traffic Violations, and intoxications. Regular Traffic Violation Reports, not accompanied by an Unusual Incident Report, are presented in separate tables in the Traffic Statistics attached to this report.

PATROL DIVISION REPORT

COMMUNITY

JULY 1948

FORCE REPORT		Entire Patrol 6/30/48		Entire Patrol 7/31/48
Patrol				
Patrol Supervisor		1		1
Division Supervisors		3		3
Captains		5		5
Lieutenants		12		12
Sergeants		17		17
Patrolmen		104		103
	Total	142		141
Clerical				
Jr. Clerk		1		
Stenographers		3	Steno-Typists	5
Office Helper		1		
	Total Clerical	5		5
	Grand Total	147		146

Additions

2 New Hires - Patrolmen

Terminations

3 Patrolmen

TERMINATIONS CONSIST OF

3 V. T. Personal

PATROL DIVISION - TRAFFIC CONTROL STATISTICS
July - 1948

OTOR VEHICLE ACCIDENTS

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	June	July	June	July	June	July	June	July
lant	1	6	0	0	0	2	1	1
ichland	29	25	0	0	0	1	3	7
orth Richland	28	20	0	0	3	0	7	9
otals	58	51	0	0	3	3	11	17

CCIDENT CAUSES

	Negligent Driving		Failure to Yield Right-of-Way		Reckless & Drunken Driving		Other Causes	
	June	July	June	July	June	July	June	July
ant	0	6	0	0	0	0	1	1
chland	17	12	7	9	0	1	6	4
rth Richland	18	9	5	7	2	1	4	5
tals	35	27	12	16	2	2	11	10

DECLASSIFIED

ANT WARNING TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equip.		Other Violations		Totals	
	June	July	June	July	June	July	June	July	June	July	June	July	June	July
ant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
chland	0	2	1	4	39	204	0	2	7	28	1	0	48	240
Rich.	0	0	1	0	161	754	0	8	19	35	0	0	181	797
tals	0	2	2	4	200	958	0	10	26	63	1	0	229	1037

JRT CITATION TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Drunken Driving		Reckless Dr.		Neg. Dr.		Parking V.		Other V.		Totals	
	June	July	June	July	June	July	June	July	June	July	June	July	June	July	June	July
ant	2	12	2	3	0	0	0	1	0	1	0	0	0	1	4	18
chland	12	41	31	47	1	2	1	2	11	24	19	28	20	32	95	178
Rich.	22	52	24	53	4	2	1	2	33	32	2	28	25	38	111	206
tals	36	105	57	103	5	4	2	5	44	57	21	56	45	71	210	402

FFIC VOLUME: Count taken on July 11, 1948, on George Washington Way at Yakima River Bridge(inbound) 24 hr..6777 Cars.
Count taken on July 11, 1948, on George Washington Way at Sewage Disp. Plant (inbound) 24 hr..5347 Cars.

e: Due to late reporting, eleven accidents that occurred in Richland, four that occurred in North Richland, and two that occurred in the Plant Area during the month of June are included in July totals.

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PATROL TRAFFIC SECTION

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RICHLAND JUSTICE COURT CASES

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JULY, 1948

Violation	Number of Cases	Number of Convictions	Total Fines	Total Susp.	Sentenced To Jail	Sentence suspended	License Revoked	Average Fine Paid	Cases Dismissed	Warrants Issued
Drunken Driving	3	3	$255.00	None	None	None	3	$85.00	0	0
Reckless Driving	3	3	115.00	$25.00	0	0	3	30.00	0	0
Negligent Driving	32	31	758.75	117.50	0	0	0	20.68	1	0
Speeding	94	89	1001.80	59.25	0	0	0	10.59	1	4
Stop Signs	99	95	605.50	43.00	0	0	0	5.92	1	3
Failure to YROW	7	7	78.75	45.00	0	0	0	4.82	0	0
Improper Passing	32	32	223.75	30.00	0	0	0	6.05	0	0
Improper Parking	48	47	167.25	10.50	0	0	0	3.33	0	1
No Driver's License	50	26	149.60	41.75	0	0	0	4.15	19	5
Failure to Stop and Identify	1	1	50.00	None	0	0	0	50.00	0	0
Defective Equipment	13	12	71.50	54.00	0	0	0	1.45	1	0
No Vehicle Registration	7	5	23.85	20.50	0	0	0	.67	2	0
No License Plates	2	1	7.50	7.50	0	0	0	None	1	0
Other Traffic	6	5	28.75	7.50	0	0	0	4.25	0	1
Malicious Mischief	1	1	None	None	1	1	0	None	0	0
Public Intoxication	30	30	387.50	None	1	0	0	12.58	0	0
Public Nuisance	6	6	105.00	17.50	0	0	0	14.58	0	0
Gambling	7	7	97.50	None	0	0	0	13.92	0	0
Carrying Concealed Weapon	1	1	None	None	1	1	0	None	0	0
Petit Larceny	1	1	None	None	1	1	0	None	0	0
2d Degree Assault	2	2	None	None	2	2	0	None	0	0
Vagrancy	8	8	135.00	105.00	2	2	0	3.75	0	0
Disorderly Conduct	1	1	None	None	1	1	0	None	0	0
Destruction of Gov't. Property	1	1	None	None	1	1	0	None	0	0
	455	415	$4262.00	$584.00	10	9	6		26	14

Total Fines $4262.00 Less Fines Suspended $584.00 -- $3678.00

Total Fines Received $3678.00

The above includes violations that occurred on the Hanford Works Project.

PATROL DIVISION-RICHLAND OFFENSES, JULY, 1948

Classification	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses June	Actual Offenses July	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	1	0	2	1	1	0	1*
Attempted suicide	0	0	0	0	0	0	0
Burglary-Breaking and/or Entering	6	0	3	6	0	0	(u)
Attempted-Breaking and/or Entering	1	0	2	1	0	0	(u)
Robbery	0	0	0	0	0	0	0
Larceny-Theft(except auto & bike (a)$50.00 and over	11	2	7	9 (a)	2	0	3
(b) Under $50.00 value	28	3	23	25 (b)	2	1	5
Auto Theft	3	0	2	3 (c)	1	0	1*
Attempted Auto Theft	0	0	0	0	0	0	0
Bicycle Theft	10	1	9	9 (d)	0	7	3
Weapons: Carrying-Poss.Using	0	0	1	0	0	0	0
Destruction of Gov't.Prop.	6	0	4	6 (e)	1	4	9
Destruction of PersonalProp.	2	0	0	2 (f)	0	2	3
Dest. of School Property	0	0	0	0	0	0	0
Disorderly Conduct	4	0	9	4	0	4	7*
Drunkenness	12	0	25	12	12	0	14*
Embezzlement and Fraud	6	0	0	6	0	1	1
Forgery	1	0	0	1	0	0	(u)
Gambling	0	0	0	0	0	0	0
Missing Persons	2	1	1	1 (g)	1	0	2
Offense Against Family &Child.	0	0	0	0	0	0	0
Pickup for Outside Agency	1	0	0	1	1	0	1
Prowlers	1	0	4	1	0	1	1
Public Nuisance	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0
Sex Offense	0	0	2	0	0	0	0
Cohabitation	0	0	0	0	0	0	0
Vagrancy	1	1	1	0	0	0	0
Violation State Game Laws	0	0	0	0	0	0	0
Violation State Liquor Laws	0	0	0	0	0	0	0
Miscellaneous	2	0	2	2	0	1	1
Juveniles(other than reported above)Disorderly Conduct	0	0	2	0	0	0	0
	98	8	99	90	21	21	52

(Cont. on Page Two)

(a) - Two of the offenses were perpetrated by a juvenile, of age 16 years, and two persons, of ages 19 and 20 years.
(b) - Three of the offenses were perpetrated by a juvenile, of age 15 years, and two persons, of ages 19 and 20 years.
(c) - One of the offenses was perpetrated by a colored male, of age 20 years.
(d) - Two of the offenses were perpetrated by three juveniles, of ages 14 and 15 years.
(e) - Three of the offenses were perpetrated by six juveniles, of ages 6,7,9,10,11,13, and a person of age 20 years.
(f) - One of the offenses was perpetrated by two juveniles, of age 14 years.
(g) - The one offense was perpetrated by two juveniles, of age 14 years.
(*) - Represents one colored perpetrator of each offense.

Value of property recovered: $3,954.00 (Includes 3 autos and 4 bikes)

PATROL DIVISION - COMPARISON CHART OF RICHLAND OFFENSES

Number of offenses known to police per 10,000 inhabitants, in cities between 10,000 and 25,000 inhabitants:

	Wash., Oregon & Calif.		Richland		
Classification	Six Months (Jan-June 1947)	One Month Average	Six Months (Jan-June 1947)	June 1948	July 1948
Murder	.688	.114	0	0	0
Robbery	19.57	3.26	0	0	0
Aggravated Assault	11.23	1.87	.22	1.33	.66
Burglary	114.53	19.09	1.66	2.0	4.0
Larceny	296.10	49.35	12.33	26.0	29.0
Auto Theft	57.73	9.62	.22	1.33	2.0

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

	State of Washington		Richland		
CLASSIFICATION	Six Months (Jan-June 1947)	One month Average	Six Months (Jan-June 1947)	June 1948	July 1948
Murder	.184	.30	0	0	0
Robbery	5.11	.85	0	0	0
Aggravated Assault	1.62	.27	.22	1.33	.66
Burglary	36.20	6.03	1.66	2.0	4.0
Larceny	91.39	15.23	12.33	26.0	29.0
Auto theft	19.79	3.30	.22	1.33	2.0

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

			Richland	
Classification	National Average (Jan-June 1947)	Six Months (Jan-June 1947)	June 1948	July 1948
Robbery	56.1%	0	0	0
Burglary	61.0	30%	0	0
Larceny	46.0	19%	8%	16%
Auto Theft	74.1	33%	0	33%

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 arrest records is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders".

In Richland every delinquent juvenile is entered in the records.

OFFENCES, NORTH RICHLAND, PATROL DIVISION - JULY, 1948

Classification	Offences known: or reported to: Patrol	Offences Unfounded:	Actual Offences: June	Actual Offences: July	Offences Cleared: by Arrest	Offences Cleared: By other Action:	Perpetrators Involved
ssault	7	0	15	7	1	4	7 d
ttempted Suicide	0	0	0	0	0	0	0
urglary-breaking and/or entering	10	0	0	10	0	0	0 u
arceny-Theft (except Auto & Bike)							
(a)$50.00 and over value	14	1	11	13	2	1	3
(b) Under $50.00 value	15	2	16	13	1	1	2
uto Theft	5	1	1	4	2	0	3 a
icycle and Motor Bike Theft	2	0	0	2	0	1	1 b
arrying Concealed Weapon	1	0	0	1	1	0	1
estruction Government Property	2	0	2	2	1	0	1
estruction School Property	0	0	0	0	0	0	0
estruction Personal Property	1	0	1	1	0	1	1
isorderly Conduct	0	0	0	0	0	0	0
runkenness	23	0	46	23	23	0	23
bezzlement and Fraud	0	0	0	0	0	0	0
rgery	0	0	0	0	0	0	0
mbling	6	0	8	6	6	0	6
ssing Person	2	0	0	2	0	1	1
fence against Family & Children	0	0	1	0	0	0	0
owlers	3	1	4	2	0	0	0 u
blic Nuisance	11	0	25	11	11	0	11
o	0	0	0	0	0	0	0
bery	3	0	8	3	0	0	0 u
Offence	1	0	0	1	1	0	2 c
rancy	15	0	9	15	15	0	15
lation of State Game Laws	0	0	0	0	0	0	0
lation of State Liquor Laws	0	0	1	0	0	0	0
cellaneous	6	1	3	5	0	0	0 u
niles(other than reported o)-Disorderly Conduct	0	0	0	0	0	0	0
	127	6	143	121	64	9	77 e

One of the offences was perpetrated by two juveniles, ages 14 and 16. (e) 29 of perpetrators involved are colored
One of the offences was perpetrated by one juvenile, age 6
One of the offences was perpetrated by one juvenile, age 12
Three of the offences were perpetrated by five juveniles, 2 age 11,1 age 5, 1 age 6, & 1 age 15.

Value of property recovered during July,$3788.41.

13

1226515

PATROL DIVISION - NORTH RICHLAND - COMPARISON OF OFFENSES

July, 1948

Number of offenses known to Police per 10,000 inhabitants, in Cities between 10,000 and 25,000 inhabitants:

Classification	Wash. Oregon & Calif. Six Months (Jan-June 1947)	Wash. Oregon & Calif. One Month Average	North Richland Six Months (Jan-June 1947)	North Richland 1948 June	North Richland 1948 July
Murder	.688	.114	0	0	0
Robbery	19.57	3.26	0	0	2.0
Aggravated Assault	11.23	1.87	0	10.0	4.6
Burglary	114.53	19.09	0	0	6.6
Larceny	296.10	49.35	0	18.0	18.6
Auto Theft	57.73	9.62	0	.6	2.6

Number of offenses known to Police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Classification	State of Washington Six Months (Jan-June 1947)	State of Washington One Month Average	North Richland Six Months (Jan-June 1947)	North Richland 1948 June	North Richland 1948 July
Murder	.184	.30	0	0	0
Robbery	5.11	.85	0	0	2.0
Aggravated Assault	1.62	.27	0	10.0	4.6
Burglary	36.20	6.03	0	0	6.6
Larceny	91.39	15.23	0	18.0	18.6
Auto Theft	19.79	3.30	0	.6	2.6

The portion of offenses committed by persons under the age of 25 years is shown by the following figures:

Classification	National Average (Jan-June 1947) Six Months	North Richland Six Months (Jan-June 1947)	North Richland June 1948	North Richland July 1948
Robbery	56.1%	0	0	0
Burglary	61.0	0	0	0
Larceny	46.0	0	7.0%	.0
Auto Theft	74.1	0	0	25%

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 age group because of the practice of some jurisdiction not to fingerprint youthful offenders."

In North Richland every delinquent juvenile is entered in the records.

COMMUNITY DIVISIONS
COMMUNITY ACTIVITIES DIVISION

JULY 31, 1948

ORGANIZATION AND PERSONNEL

Number of Employees on roll	July
Beginning of month	12
End of month	12
	0

During the month one swimming pool lifeguard was added to the staff and one section supervisor terminated to accept employment elsewhere.

CHURCHES

The following is a tabulation of full time paid personnel, as of July 31, 1948:

	Ministers	Staff	Total
Episcopal Church	1	0	1
Church of Christ	1	0	1
Catholic	2	2	4
Central United Protestant	3	2	5
United Protestant - South Side	1	0	1
Latter Day Saints	4	0	4
National Lutheran	1	2	3
Mo. Synod Lutheran (Redeemer)	1	1	2
Assembly of God	1	0	1
Regular Baptist	1	0	1
Mission Baptist	1	0	1
Free Methodist	1	0	1
Church of God	1	0	1
	19	7	26

An inspection was made of the United Protestant Church, Richland Lutheran Church, Redeemer Lutheran Church, and Catholic Church on July 9, 1948.

The first business meeting of the West Side Protestant Church, organized to serve the people in the west section of Richland, was held July 1 in the Central United Protestant Church.

Community Activities Division

SCHOOLS

The following is a tabulation of full-time school district paid personnel, as of July 30, 1948:

Clerical	13
Principals & Supervisors	11
Teachers	0
Building Custodians	21
Cooks	0
Nursery School Ex. D. C.	14

On July 30, 1948, there were 77 children enrolled in the Richland Nursery School with an average attendance of 51. There was an increase in enrollment during the month of 3. On this day there were 30 children enrolled in the Extended Day Care program of the Nursery with an average attendance for the month of 18. There has been no change in enrollment during the month.

A preliminary inspection of the Jefferson Grade School was made July 12, 1948, in preparation for the final inspection August 2, 1948.

Inspections were made of all Richland schools July 8, 1948.

The North Richland John Ball Grade School playground was top-soiled and rolled and backstops were installed during the month. The school operated summer recreation program was terminated July 30, 1948.

Richland's third annual bicycle training course, sponsored by the Richland Traffic Patrol, started July 12 at John Ball school with classes scheduled through July 16. The second series will be held at Jefferson Grade School from July 19 through July 23; the next one at Sacajawea from July 26 through July 30; Marcus Whitman, August 2-6; Lewis and Clark, August 9-13.

The summer recreation program for village youngsters, organized by the Richland School District, started its first full-day sessions July 8. Afternoon sessions are held in the Village Park.

COMMUNITY

As of July 30, 1948, organizational personnel included:

State Game Commission	1
Villagers, Inc.	6
American Legion	3
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	1
High Spot Club	1
Jr. Chamber of Commerce	2
Red Cross	3
Castle Club	1
Post Office	68

Veterans Administration	2
Girl Scouts	1
	92

The new softball field was reopened for use on July 27, 1948. This field was regraded and a cyclone fence was installed around the perimeter of the ball park.

The fence around the tennis courts at the Village Park which had been damaged by the flood and high winds was reconstructed and iron fence posts installed around both of the playing areas.

On Thursday, July 29, 1948, D. H. Berst attended the Recreation Section of the Thirteenth Annual Institute of Government at the University of Washington in Seattle. The Institute was sponsored by the Bureau of Governmental Research and Services in cooperation with the Division of Adult Education and Extension Services. On Friday, July 30, 1948, Mr. Berst conferred with officials of the Park Department including the Director of Recreation and the Supervisor of Recreation with reference to facilities, direction, and supervision of recreational activities in Seattle. Also, on Friday afternoon Mr. Berst accompanied the Supervision of Recreation on a tour of various playgrounds, community recreational centers, parks, beaches, and Camp Long.

On July 3, the Junior Chamber of Commerce sponsored their first annual Turtle Derby at the High School stadium. Four hundred fifty dollars ($450) of the funds received was donated to the Swimming Pool Association for use in building the new pool.

On July 16, the ground was broken for the start of construction of the new Village swimming pool located near Swift and Stevens in the high school playground.

Richland Post 71, American Legion, sponsored a three day, Fourth of July celebration at the Legion grounds. The program included a dance on the tennis courts, an open air carnival, a street parade, and food sale.

The Youth Council announced on July 1, the suspension of all handicraft classes during the months of July and August. The Council also announced the approval of its budget for 1949 operation totaling $7,653.00. This figure includes the sum of $2,100 for Hi-Spot operation. The Youth Council was again authorized to conduct a checking service at the Swimming Pool with all funds going toward expanded youth activities.

Richland residents were given another opportunity to register for the fall election when the League of Women Voters opened registration booths in the five public schools on July 13 and 14 from 6:00 to 9:00 PM.

The Richland Park Swimming Pool was officially opened to the public on July 5. Total attendance for the swimming pool for the month of July was 19,491.

Community Activities Division

On July 15, Villagers, Inc. announced a series of six band concerts to be presented Thursday evenings in the Village Park. The first of the series was presented on July 29.

On July 15, it was announced that the Richland Air Corps Reserve had been officially recognized and accepted as a flight member of the Walla Walla 401st Composite Squadron of the Army Air Corps Reserve.

The first showing of a new color movie of the post-war Scandinavian countries was given July 22 at the Columbia High School Auditorium under the sponsorship of the Richland Beta Sigma Phi Sorority Chapters.

On July 22, 1948, the Recreation Advisory Committee held its regular monthly meeting. The Committee recommended the following organizations be approved subject to the required security clearance: Richland Community Swimming Pool Association, Inc., Kenny Private Music School (Accordian and Guitar), Richland Air Corps Reserve, and Atomic City Motorcycle Club.

The number and types of organizations served by the Community Activities Division now includes 15 Fraternal Organizations, 27 Churches, 6 Public Schools, 6 Parent-Teachers Associations, 17 Private Instructors, 16 Boy Scout Troops, 27 Girl Scout Troops, 14 Camp Fire Girls Troops, 5 other Youth Organizations, 23 Recreational Organizations, 12 Social Organizations, 9 Business and Professional Organizations, 7 Political and Labor Groups, 5 Veterans Organizations, 7 Music Organizations, and 3 Welfare Organizations.

MAJOR ACTIVITIES DURING MONTH

July 3	American Legion Carnival	Legion grounds