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November 26, 1948

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HANFORD WORKS

MONTHLY REPORT

OCTOBER - 1948

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GENERAL SUMMARY

OCTOBER 1948

A total of 85.9 tons of metal was discharged during the month as the three piles operated at an average efficiency of 75.0 percent. The power level was 275 MW during operation except at 100-B which operated until October 6 at reduced levels due to the water in the graphite resulting from a ruptured tube and at 100-F which operated at reduced levels subsequent to October 20 when a tube rupture occurred.

A process tube leak in the F Pile caused so great a reactivity loss that the pile could only be operated at 40 MW at month-end, although all poison columns and special request slugs had been discharged. The pile was shut down for four days pending a demonstration at the B Pile that operation of a wet pile did not establish a permanent loss of reactivity. At month-end, water was being removed at a rate of about one gallon per hour, with a reactivity recovery at a rate of about 0.7 inhour per hour.

The tube leaks at both B and F Piles were found to be caused by defective lithium fluoride slugs and all such slugs were discharged from the piles. Preparations are underway to install tritium extraction facilities in Building 108-B, but the schedule for use of these facilities is now uncertain.

The 300 Area canning production totaled 145 tons of acceptable slugs. The cannin yield was 88.8%. The Melt Plant produced 65.2 tons of billets. A large section of the north dike at the 300 Area Retention Pond failed October 25, and emergency repairs were effected by October 27. No appreciable movement of contamination into the river was detected by comprehensive tests.

A total of 42 batches was processed through the isolation phase of Separations operations. The waste losses for all separations activities averaged 2.6% for the month.

At month-end the indicated efficiencies for both the T and B Plant filters were 99+%.

There were no significant process difficulties or changes in operation of the Separations Plants during the month of October. Filtration of the T Plant ventilation air discharge by passage through a sand bed was started on October 15.

Alpha-rolled, lead-dipped slugs continue to show variable dimensional changes during irradiation, and are being limited to an exposure of 230 MD/ton. Alpha-rolled, triple-dipped slugs, examined after an exposure of 160 MD/ton, give promise of satisfactory performance at 400 MD/ton.

Diffusion measurements at the DR Pile indicate an even higher graphite quality than had been shown by the Test Pile. By this test, the DR Pile will start with 400 inhours of reactivity greater than the F Pile did at start-up, and with 120 inhours greater than the F Pile had prior to the recent tube failure.

Process changes at Morganton include the conversion of three more graphitizing furnaces to purification furnaces, the operation of all fourteen purification furnaces with a two-high stacking, and the charging of all purification furnaces with gas-baked coke instead of with graphitized bars. This permits 60 to 65% of the total production to be purified, gas-baked coke, - with gains of 80 to 150 inhours of reactivity compared to the DR Pile, with intangible reduction in rate of graphite expansion during operation of the piles, and with relatively small changes in the over-all graphite cost for new piles in comparison with the DR Pile.

The graphite in the DR Pile stacked up to a height about 0.2 inches below the intended elevation. Tests with the one tube mock-up showed that this condition was undesirable in its effect on allowable slope of the graphite at the inner end of the gunbarrels and indicated the advisability of re-stacking the DR Pile.

At month-end sufficient equipment had been assembled to commence segmented discharge on all pile tubes, if such procedure were to be required in order to reach product concentrations equivalent to 400 MD/ton. Development of improved equipment was continuing.

Continued studies of packed columns for use in the Redox process have established the throughput vs efficiency relationships for columns bracketing both the Redox Test and Production Plants. Packed with Raschig rings, a 3-inch column has produced an H.E.T.S. value of ca. 1.2 ft. over a four-fold range of throughput and an 8-inch column an H.E.T.S. of ca. 1.5 ft. over a two-fold range of throughput. Revisions of the experimental mixer-settler contactor models under study are proceeding. Flame-sprayed polyethylene has shown very promising resistance to certain Redox process solutions.

The study of possible methods of increasing ruthenium decontamination in the Redox process has been expanded to include the use of isotopic dilution, complexing agents, and volatilization. The adsorption of zirconium by glass wool and the extraction behavior of zirconium is being continued in study. Other laboratory research being carried out includes studies of crossover oxidation, oxidation of plutonium by ozone, heats of extraction, temperature coefficients of extraction, plutonium (VI) distribution ratios, X-ray diffraction measurements, filter aid product pick-up, solubility and partial pressure relationships, and H.E.T.S. measurements with a laboratory experimental column.

Production rolling of uranium rods for Hanford continued at Lockport, N.Y., and Aliquippa, Pa., under technical supervision by the 300 Area Plant Assistance group. During the run at Aliquippa, 52 billets were forged to 2" squares and then rolled to final rod size. This procedure is much faster than straight rolling; the structural suitability of the resultant rod remains to be determined.

Preliminary flowsheets were developed for two 300 Area process modifications which look promising; (1) the pickling of uranium turnings to give oxide-free briquettes and allow their direct remelting with improved billet yield; and (2) the chemical treatment of scrap uranium fines and oxides, as an alternate to burning (with its contamination control problems).

Good progress was made in the examination of uranium alloy samples being submitted by Battelle in the cooperative search for an effective grain refining agent. Some structural effects are being observed with several of the sixteen alloying elements studied to date.

The H.I. Operational Division reported survey findings in the normal pattern. Ne was the release of large quantities of S^{35} to the Columbia River from condensate from the Gas Purification Building following a water leak. Conservatism dictated the retention of this activity until better permissible limit data could be developed.

Another incident, which pointed up the weakness of preparation against a major disaster, was the release of 300 Area Retention Pond water to the Columbia River.

In the Control and Development Division, samples of water, air, and vegetation showed no major deviation from previous findings. There was continued difficulty with low yields in the plutonium analysis of urines, but no indication of positiv results. Conversely, tests for uranium in urine of 300 Area employees were strongly positive, reflecting the continued substandard conditions in uranium metal fabrication.

Biology Division findings, already limited by totally inadequate laboratory facilities, were further reduced by
(1) down time of the 100-F Area Pile, affecting the fish program;
(2) predator raids on stock.

There were two Major Injuries during the month which brings the total for the year to date to fourteen. The accumulative frequency rate for the year 1948 is 0.97.

On October 25, the Patrol Division returned to a five-day work-week schedule with additional hours being worked to provide an overlap at shift change necessary to handle traffic in the various areas. Concurrent with this change, several area posts were eliminated with the approval of the Atomic Energy Commission.

On October 26, an Airborne Military group numbering approximately 250 and a vehicle convoy consisting of approximately 750 arrived at Hanford Works for practice maneuvers in the areas.

Trail blackouts were held in all areas except 300 on October 27, 1948.

Additional allocation of galvanized steel sheets was arranged under the Voluntary Steel Allocation Plan and orders placed for our requirements.

Two shipments of process chemicals were tied up by the longshoremen's strike, one at Coos Bay, Oregon, and the other at San Francisco, California. In one of the instances it was necessary to protect our stock position by a spot purchase for all rail shipments.

The condensed 9-Point Job Improvement Program for the staff group was completed with the exception of one meeting. Instructors' classes in this Program are approximately 70% complete and a number of individual classes have started in various divisions.

Open requisitions for additional personnel decreased from 613 at the beginning of the month to 439 at the end of October. Total plant roll increased during October by 103 employees. Recruitment activities for stenographers, typists, comptometer

There were 1,331 employee contacts made by the Employee Relations Group. One employee retired during October. The Community Chest Drive was completed on October 15, with 97.7% of the quota obtained. Fifteen suggestion awards, totaling $115, were granted during October. Settlements of claims from the North Richland barrack's fire are about completed.

The community wage rate survey in Spokane, Seattle, and Tacoma, Washington, and Portland, Oregon, was completed and the results are being analyzed. All craft jobs in the Maintenance Division and the Village Maintenance Group were reviewed. Approval was received from the Atomic Energy Commission for establishing a job rate for Technical Graduates. Hanford Metal Trades Council (A.F. of L.) filed petition with the Regional Director of the N.L.R.B. requesting that their organization be certified as bargaining representative for all production and maintenance employees at the Hanford Works.

On October 4, 1948, representatives of the General Electric Company and the Atomic Energy Commission officially accepted completed unit number one of the Columbia High School addition.

Locations were awarded for the following facilities: Packard dealership, General Repair Garage, Service Station and Drug Store in Richland; and Beauty Shop and Shoe Repair Shop in North Richland.

Dr. Shields Warren, Dr. Alan Gregg, and the members of the A.E.C. Advisory Committee on Medicine and Biology spent two days at the project. Dr. Warren advised that studies to determine the effect of inhaling active particles by laboratory animals would be started at an early date in Rochester.

Dr. H. L. Hardy, industrial physician at the Los Alamos project, visited this Work for an exchange of ideas.

The average daily hospital census was 88, identical with the previous month, but 40% higher than the census a year ago. The average hospital stay was 5.3 days as compared with 5.9 days a year ago.

In controlling mosquitoes in the area, a total of 20,000 gallons of 5% D.D.T. larvicide and adulticide was sprayed over 30,000 acres by means of ground equipment and aircraft during the season.

Decentralization of accounting work was completed during the month of October. Accounting functions with the exception of payrolls, property accounting, issuance of checks, bank accounts, and billing to the government are now handled by the respective Accounting Divisions. Payrolls, property accounting, bank accounts, and billing to the government are handled by the General Accounting Division.

The Payroll Divisions returned to a forty-hour week as of October 31, 1948.

The transition from operating as an issuing agent for the purchase of U.S. Savings Bonds to purchasing bonds through the Employee Savings Division in Schenectady presented many problems which have not as yet been satisfactorily solved. Considerable confusion was caused by the change-over due to the fact that payroll deduction accounts are maintained at Hanford Works while bonds are issued by the Employee Savings Division in Schenectady. Bond purchases for the month of October have been delayed due to the fact that many Payroll Deduction Authorizations were in transit between Schenectady and Richland.

[redacted]

STAFF

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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. Greninger
Manager, Health Instrument Division	H. M. Parker
Manager, Medical Division	W. D. Norwood,MD
Manager, Employee and Community Relations Division	H. E. Callahan

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FORCE REPORT
OCTOBER - 1948

	Non-Exempt		Exempt		Total	
	9-30-48	10-29-48	9-30-48	10-29-48	9-30-48	10-29-48
GENERAL	14	17	6	6	20	23
LAW	3	3	4	4	7	7
DESIGN & CONSTRUCTION DIV.'S						
ADMINISTRATIVE	30	30	6	6	36	36
CONSTRUCTION	281	246	208	196	489	442
Construction Accounting	15	64	-	3	15	67
DESIGN	152	143	117	111	269	254
PROCUREMENT	35	33	60	59	95	92
NORTH RICHLAND REALTY	272	271	24	23	296	294
MANUFACTURING DIVISIONS						
GENERAL	2	2	4	7	6	9
PROJECT ENGINEERING	75	74	54	52	129	126
MANUFACTURING ACCOUNTING	-	37	2	5	2	42
OPERATIONS DIVISIONS						
"P" DIVISION	301	306	62	61	363	367
"S" DIVISION	243	243	57	58	300	301
POWER	336	341	80	81	416	422
MECHANICAL DIVISIONS						
MAINTENANCE	521	528	72	72	593	600
ELECTRICAL	228	228	44	46	272	274
INSTRUMENT	162	164	44	45	206	209
TRANSPORTATION	671	672	67	67	738	739
TECHNICAL DIVISIONS						
TECHNICAL GENERAL)		2		5		7
PILE TECHNOLOGY)	470	10	235	50	705	60
SEPARATIONS TECHNOLOGY)		82		87		169
METALLURGY & CONTROL)		392		107		499
MEDICAL DIVISION	417	432	99	100	516	532
H. I. DIVISION	205	215	86	85	291	300
ACCOUNTING DIVISION	242	163	36	31	278	194
EMPLOYEE & COMM. REL. DIV.	71	73	23	23	94	96
SERVICE DIVISIONS						
PLANT SECURITY & SERVICE	993	1034	123	123	1116	1157
PURCHASING & STORES	157	159	22	23	179	182
COMMUNITY DIVISIONS	800	827	152	159	952	986
GRAND TOTAL	6696	6791	1687	1695	8383	8486

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PERSONNEL DISTRIBUTION - OCTOBER 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										
Clerical	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	17	17
	-	-	-	-	-	-	-	-	23	23
LAW DIVISION										
Clerical	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	3	3
	-	-	-	-	-	-	-	-	7	7
DESIGN & CONSTRUCTION DIVISIONS										
ADMINISTRATIVE										
Supervisors	-	-	-	-	-	-	-	-	5	5
Engineers	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	24	24
Others	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	36	36
CONSTRUCTION										
Supervisors	-	-	-	-	-	-	16	30	-	46
Engineers	13	-	-	9	-	1	13	25	20	81
Clerical	13	-	-	-	-	-	28	95	9	145
Others	28	-	-	2	-	-	112	3	25	170
Total	54	-	-	11	-	1	169	153	54	442
CONSTRUCTION ACCOUNTING										
Supervisors	-	-	-	-	-	-	-	5	-	5
Clerical	-	-	-	-	-	-	-	62	-	62
Total	-	-	-	-	-	-	-	67	-	67

	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 & CONSTRUCTION DIVISIONS										
DESIGN										
Supervisors	-	-	-	-	-	-	-	-	15	15
Engineers	-	-	-	-	-	-	-	-	114	114
Clerical	-	-	-	-	-	-	-	-	69	69
Others	-	-	-	-	-	-	-	-	56	56
Total	-	-	-	-	-	-	-	-	254	254
PROCUREMENT										
Supervisors	-	-	-	-	-	-	-	-	15	15
Clerical	-	-	-	-	-	-	-	-	32	32
Others	-	-	-	-	-	-	12	-	33	45
Total	-	-	-	-	-	-	12	-	80	92
NORTH RICHLAND REALTY										
Supervisors	-	-	-	-	-	-	-	23	-	23
Engineers	-	-	-	-	-	-	-	4	-	4
Clerical	-	-	-	-	-	-	-	34	-	34
Others	-	-	-	-	-	-	-	233	-	233
Total	-	-	-	-	-	-	-	294	-	294
MANUFACTURING DIVISIONS										
GENERAL										
Supervisors	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	9	9

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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
MANUFACTURING DIVISIONS										
PROJECT ENGINEERING										
Supervisors	-	-	-	-	1	-	-	-	13	14
Engineers	-	-	-	-	4	1	-	-	32	37
Drafting Personnel	-	-	2	-	5	3	-	-	30	40
Clerical	-	-	1	-	1	-	-	-	15	17
Others	-	-	1	-	2	-	-	-	15	18
Total	-	-	4	-	13	4	-	-	105	126
MANUFACTURING ACCOUNTING										
Supervisors	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	37	37
Total	-	-	-	-	-	-	-	-	42	42
OPERATING DIVISIONS										
"P" DIVISION										
Supervisors	10	11	15	-	-	16	-	-	9	61
Operators	31	49	32	-	-	180	-	-	-	292
Clerical	2	2	2	-	-	5	-	-	3	14
Total	43	62	49	-	-	201	-	-	12	367
"S" DIVISION										
Supervisors	-	-	-	21	30	-	-	-	6	57
Operators	-	-	-	104	124	-	-	-	1	229
Clerical	-	-	-	4	9	-	-	-	2	15
Total	-	-	-	129	163	-	-	-	9	301
POWER										
Supervisors	22	19	17	6	7	1	9	-	-	81
Operators	82	79	76	24	29	14	-	-	-	304
Clerical	2	1	2	-	-	-	2	-	-	7
Others	6	6	9	4	5	-	-	-	-	30
Total	112	105	104	34	41	15	11	-	-	422

	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
MECHANICAL DIVISIONS										
MAINTENANCE										
Supervisors	2	8	7	6	16	7	16	-	2	64
Engineers	1	-	1	-	1	1	6	-	5	15
Mechanics	30	27	63	43	93	57	120	-	-	433
Clerical	1	1	2	2	1	1	4	-	2	14
Others	3	1	9	4	18	10	29	-	-	74
Total	37	37	82	55	129	76	175	-	9	600
ELECTRICAL										
Supervisors	2	3	3	2	3	2	2	-	24	41
Electricians	12	12	12	12	12	13	-	-	98	171
Clerical	1	-	1	1	1	1	2	-	4	11
Others	1	2	2	2	3	4	1	-	36	51
Total	16	17	18	17	19	20	5	-	162	274
INSTRUMENT										
Supervisors	3	4	2	2	4	6	-	-	5	26
Engineers	3	-	-	-	1	8	-	-	7	19
Mechanics	7	5	8	3	12	23	-	-	7	65
Clerical	1	1	1	1	1	4	-	-	5	14
Others	9	11	7	11	8	29	-	-	10	85
Total	23	21	18	17	26	70	-	-	34	209
TRANSPORTATION										
Supervisors	7	2	2	4	4	2	7	-	39	67
Drivers (Based on areas served)	9	12	31	31	37	23	12	-	99	254
Mechanics	12	2	1	4	5	-	-	-	76	100
Trainmen	11	4	4	4	4	-	-	-	8	35
Laborers	9	12	12	23	8	12	-	-	35	111
Clerical	-	-	-	1	-	1	-	-	18	20
Others	8	9	12	15	22	3	-	-	83	152
Total	56	41	62	82	80	41	19	-	358	739

	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 DIVISIONS										
TECHNICAL GENERAL										
Supervisors	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	7	7
PILE TECHNOLOGY										
Supervisors	-	1	-	-	-	4	-	-	5	10
Chemists-Engineers & Physicists	2	6	2	-	-	22	-	-	8	40
Laboratory Assistants	-	3	-	-	-	3	-	-	-	6
Clerical	-	-	-	-	-	2	-	-	2	4
Total	2	10	2	-	-	31	-	-	15	60
SEPARATIONS TECHNOLOGY										
Supervisors	-	-	-	1	4	12	-	-	1	18
Chemists-Engineers & Tech. Graduates	-	-	-	15	23	56	-	-	6	100
Laboratory Assistants	-	-	-	-	-	7	-	-	-	7
Clerical	-	-	-	-	1	8	-	-	2	11
Others	-	-	-	-	1	29	-	-	3	33
Total	-	-	-	16	29	112	-	-	12	169
METALLURGY & CONTROL										
Supervisors	-	5	-	6	11	30	-	-	4	56
Chemists-Engineers-Metallurgists & Technical Graduates & Technologists	1	6	6	5	17	88	-	-	-	123
Laboratory Assistants	8	14	22	37	63	114	-	-	31	289
Clerical	-	1	-	1	2	15	-	-	1	20
Others	-	-	-	2	2	7	-	-	-	11
Total	9	26	28	51	95	254	-	-	36	499

	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
MEDICAL DIVISION										
Physicians	-	-	-	-	-	-	7	12	25	44
Dentists	-	-	-	-	-	-	-	2	11	13
Technicians	-	-	-	2	-	-	-	9	28	39
Clerical	1	1	-	2	-	1	-	34	96	134
Others	12	5	-	4	3	2	18	28	230	302
Total	13	6	-	8	3	3	25	85	389	532
H. I. DIVISION										
Supervisors	1	1	3	5	8	16	-	-	5	39
Engineers	4	4	7	12	11	7	-	-	1	46
Clerical	-	-	-	-	1	4	-	-	4	9
Others	8	14	16	32	57	52	16	-	11	206
Total	13	19	26	49	77	79	16	-	21	300
ACCOUNTING DIVISION										
Supervisors	-	-	-	-	-	-	-	-	31	31
Clerical	-	-	-	-	-	-	-	-	163	163
Total	-	-	-	-	-	-	-	-	194	194
EMPLOYEE & COMMUNITY RELATIONS DIVISION										
Supervisors	-	-	-	-	-	-	-	-	23	23
Clerical	-	-	-	-	-	-	-	-	65	65
Others	-	-	-	-	-	-	-	-	8	8
Total	-	-	-	-	-	-	-	-	96	96

	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										
PLANT SECURITY & SERVICE										
Supervisors	16	9	7	10	14	12	27	-	34	129
Office Machine Operators	-	-	-	-	-	-	-	-	54	54
Inspectors	4	3	3	3	3	3	5	-	-	24
Patrolman	42	125	84	71	110	79	28	-	42	581
Fireman	65	-	-	-	7	11	2	-	22	107
Laundry Operators	-	-	-	-	6	-	-	-	2	8
Clerical	-	-	-	-	-	-	21	-	35	56
Others	6	7	5	9	39	17	3	-	112	198
Total	133	144	99	93	179	122	86	-	301	1157
PURCHASING & STORES										
Supervisors	-	-	-	-	-	-	-	-	26	26
Clerical	-	1	-	1	-	-	-	-	154	156
Total	-	1	-	1	-	-	-	-	180	182
COMMUNITY DIVISIONS										
Supervisors	-	-	-	-	-	-	-	-	159	159
Others	-	-	-	-	-	-	-	-	827	827
Total	-	-	-	-	-	-	-	-	986	986
GRAND TOTAL	511	489	492	563	854	1029	518	599	3431	8486

[redacted]

BAA

	BAB	BAC	BAD
BAE	0	0	0
BAF	201	192	200
BAG	2	5	2
BAH	0	0	0
BAI	203	197	202
BAJ	71	69	65
BAK	0	0	0
BAL	143	147	140
BAM	164	156	155
BAN	146	145	140
BAO	45	35	40
BAP	27	27	27
BAQ	95	84	75
BAR	107	86	75
BAS	31	33	35
BAT	37	40	35
BAU	334	385	425
BAV	2	1	1
BAW	94	79	50
BAX	136	115	90

	BAB	BAC
BAY	22	31
BAZ	40	43
BBA	0	0
BBB	19	19
BBC	0	0
BBD	42	28
BBE	51	57
BBF	0	1
BBG	15	24
BBH	31	34
BBI	46	24
BBJ	88	66
BBK	6	14
BBL	1	0
BBM	41	35
BBN	36	32
BBO	28.3	40
BBP	33.3	14.1
BBQ	97.6	86.1
BBR	36.0	32.8
BBS	27.8	39.9
BBT	33.6	13.1
BBU	97.4	85.8

[redacted]

	BAB	BAC
BBV	26.2	32.7
BBW	26.2	35.9
BBX	–	–
BBY	52.4	68.6
BBZ	–	–
BCA	–	–
BCB	28.8	32.5
BCC	27.3	32.8
BCD	56.1	65.3
BCE	5,919	7,224
BCF	7,088	7,157
BCG	5,637	4,786
BCH	18,644	19,167
BCI	7,303	6,742
BCJ	5,931	8,815
BCK	6,941	2,706
BCL	20,175	18,263

	BCM	BCN
BCO	251.4	250.5
BCP	244.5	244.5
BCQ	235.1	236.1
BCR	731.0	731.1
BCS	260.0	277.2
BCT	12.2	15.4

	BCU	BCV
BCW	10,728	14,204
BCX	10.117	13.363
BCY	0.300	0.306
BCZ	11.377	12.634
BDA	0.794	0.862
BDB	10.583	11.771
BDC	8.657	9.948
BDD	10.799	11.879
BDE	–	–
BDF	–	–
BDG	–	–
BDH	–	–
BDI	–	–

MANUFACTURING DIVISIONS

OCTOBER 1948

SUMMARY

Operational

A total of 85.9 tons of metal was discharged during the month as the three piles operated at an average efficiency of 75.0 percent. The power level was 275 MW during operation except at 100-B which operated until October 6 at reduced levels due to the water in the graphite resulting from a ruptured tube and at 100-F which operated at reduced levels subsequent to October 20 when a tube rupture occurred.

The ruptured tube in the F Pile was found to be due to the failure of a lithium fluoride slug, which also appeared to be the cause of the tube failure in the B Pile. Subsequent to this discovery all tubes containing this material were discharged.

The 300 Area canning production totaled 145 tons of acceptable slugs. The canning yield was 88.8%. The Melt Plant produced 65.2 tons of billets. A large section of the north dike at the 300 Area Retention Pond failed October 25, and emergency repairs were effected by October 27. No appreciable movement of contamination into the river was detected by comprehensive tests.

A total of 42 batches were processed through the isolation phase of Separations operations. The waste losses for all separations activities averaged 2.6 percent for the month.

At month-end the indicated efficiencies for both the T and B plant filters were 99 + percent.

Mechanical

The T plant sand filter installation for filtering all ventilation air prior to release from the stack was completed and placed in operation October 15. The B plant filter was completed and placed in operation October 30. Both completion dates were well in advance of schedule.

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

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P DIVISION

OCTOBER - 1948

I. GENERAL

All piles operated at 275 M.W. throughout the month except for the outages listed under Area Activities in this report and except that both B and F Piles operated at reduced levels for several days incident to difficulties encountered with leaking process tubes. Nominal level was resumed on October 6 at B Pile, following a program of stepwise increases begun in September. Pile Tube No. 3169-F ruptured on October 20, necessitating a cessation of operation at F Pile; the tube was replaced and operation resumed at low levels to allow the free moisture in the graphite packing to evaporate at a safe rate. At month end the operating level at F Pile was 65 M.W.

The rupture of Tube No. 3169-F was found to be caused by the failure of a SR #15 slug (lithium fluoride). Consequently, all tubes containing this material were discharged and the tubes (two at B, two at D, and six at F) were replaced.

A total of 85.9 tons of metal was discharged from the piles.

The 300 Area canning production amounted to 145 tons of acceptable slugs.

A large section of the north dike at the 300 Area Retention Pond failed on October 25 and allowed essentially all of the water (an estimated 16,000,000 gallons) to run out. The hole in the dike was repaired on October 27.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - October

Beginning of Month:	363
End of Month:	367
Net Increase:	4

Six operators were hired, and one terminated. A total of 18 operators was transferred from the 300 Area to the 100 Areas for training to permit a return to the five-day work week as soon as possible.

J. E. Maider left the division, being promoted to the position of Superintendent of Operating Divisions on October 1, 1948. Within the division the following monthly salary personnel were changed as indicated.

P Division

E. P. Lee, promoted to Superintendent, October 1.

J. H. Warren, promoted to Assistant Superintendent, October 1.

P. E. Lowe, promoted to Chief Supervisor, 100-F Area, October 1.

H. T. Wells, to head up Construction liaison group, October 11.

H. A. Laybourn, Shift Supervisor, moved from 100-F Area to the Construction liaison group on October 4.

H. A. Zweifel, Shift Supervisor, moved from 100-F Area to the Construction liaison group on October 4.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time Operated (%)	91.0	86.0	72.6
Operating Efficiency (%)	84.7	84.0	56.1
*Power Level (M.W.)	275	275	65
*Inlet Water Temperature (°C)	13.2	13.1	13.3
*Outlet Water Temperature (Maximum °C., 10 tubes, .240" zone)	56.4	52.9	29.5
Number of Scrams	0	0	0
Number of Purges	2	1	1
Helium Consumption (cu. ft.)	60,185	78,298	146,468
Metal Discharged (tons)	32.8	39.9	13.1
Inhours Gained (this month)	7	9	0
*Inhours Poisoned	279	470	603**
*Inhours in Rods	65	60	25

* Month end figures.
** 407 inhours attributable to water in graphite.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (Hours)
10-1-48*			B	6.5
10-1-48*			D	4.5
10-1-48**	F			2.4
10-2-48**	B			2.3
10-4-48**	B			1.7
10-5-48	D			18.5
10-6-48		F		22.2
10-10-48	B			19.2
10-13-48	D			19.8
10-15-48	F			22.6
10-19-48	B			18.2
10-20-48		D		20.5

P Division

Outage Breakdown (Continued)

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (Hours)
10-20-48***	F		F	56.2
10-22-48****			F	92.6
10-26-48	B			19.2
10-27-48	D			34.3
10-28-48**	D			2.1
10-29-48**	D			4.4

* The outage, caused by a pole fire on the 230 KV loop, began on September 30.

** Outage to handle temporary poison.

*** Outage necessary to replace leaky Tube No. 3169-F.

**** Pile was shut down to permit survey of possible damage to be encountered from operation.

Operating Experience

Production tests having operational significance are reported below:

105-81-P (Probe Test of Top Central Tubes)
Monthly tests were carried out with satisfactory results. At 100-D Area, Tube No. 4674 passed the 1.485" probe successfully. At 100-F Area the 1.485" probe was inserted 12 feet from the front nozzle of Tube No. 4674.

105-114-P (Inspection of Van Stone Flanges)
Installations as described below were made on 48 F Pile tubes on October 23 to evaluate the relative effects on Van Stone flange corrosion rates:
a) Magnesium gaskets were installed on newly formed front flanges of ten tubes.
b) Magnesium alloy gaskets were installed on newly formed front flanges of ten tubes.
c) Magnesium alloy slugs were positioned opposite the rear Van Stone flanges (in good condition) of twenty-five tubes.

105-168-P (Replacement of Pile Helium Atmosphere with Carbon Dioxide)
The percentage of carbon dioxide in the gas circulating system of D Pile was maintained at 40. No significant change in operating conditions occurred.

105-214-P (Silica Feed Reduction)
The amount of sodium silicate added during the treatment of process water at B Pile was maintained at the previously

reduced rate of 3.5 ppm. An acceleration in the rate of pressure drop increase in process tubes was noted during the month; a study is in progress to determine the cause. (The reduction of the silica feed to 2.5 ppm, scheduled for October 26, was postponed because of the noted change in the rate of pressure drop increase).

The reduced level operation of the B Pile was continued for the purpose of evaporating the free water which had accumulated in the bottom sections of the graphite packing after Tube No. 1569-B had developed a leak in September. After stepwise increases in level, the nominal level was resumed on October 6. At month end, the amount of water being evaporated and removed was approximately two times that normally removed. (About 550 gallons of water has been removed in excess of that which would have been normally expected during the period September 24 to October 31). It is estimated that practically all of the reactivity (approximately 150 inhours) absorbed by the free water in B Pile has now been recovered. On October 20, the F Pile began to experience a series of conditions similar to those which prevailed at the B Pile. A sudden loss of reactivity was noted and the F Pile was shut down. Investigation revealed a water leak in Tube No. 3169-F at about its center point. The apparent cause was the corrosive action resulting from the rupture of one piece of Special Request No. 15 (lithium fluoride) with which the tube was charged. A considerable amount of water leaked into the central and lower sections of the graphite packing. An estimated loss of 450 inhours of reactivity resulted. Following its startup, F Pile has of necessity been operated at reduced levels to maintain safe water evaporation conditions on the fringe of the graphite "wet zone" and because the pile reactivity is low. The removal of water is progressing at an average rate of approximately twenty-four gallons per day. (A detailed report of this incident will be issued under separate cover). At month end the operating level was 65 M.W.

On October 15 the process water pressure at D Pile was reduced from 365 psi to 350 psi to counteract the increased flow resulting from the elimination of the front dummy train from a large number of tubes. This reduction makes all process water pressures uniform at B, D, and F Piles.

Mechanical Experience

All vertical safety and horizontal rods are in satisfactory operating condition with the exception of Vertical Safety Rods No. 20 at B Pile and No. 27 at D Pile. Both rods are temporarily out of service because of binding tendencies. The vertical safety rod renovation program, covering the buffing of the rods and the removal of rust from the thimbles, was completed at D Pile. Three more rods were serviced under this program at F Pile making a total of 22 to date. The semi-annual pneumatic testing of the vertical safety rod thimbles at D Pile was inaugurated on October 27; thimbles of Rods Nos. 10 and 11 tested satisfactorily. Final adjustments were made to the trial electric drive recently installed on Horizontal Rod No. 4 at B Pile. The drive and rod function satisfactorily.

P Division

Eleven process tubes were replaced during October as described below:

a) Tube No. 1788-F, which was discharged with difficulty in September, was replaced on October 6.

b) To prevent further failure of SR-15 pieces and consequent tube water leaks, the following ten tubes were discharged and replaced:

B Pile, October 26	D Pile, October 27	F Pile, October 23
*1569-B	2066-D	1579-F
3169-B	3274-D	2082-F
		2666-F
		2682-F
		3179-F
		*3169-F (October 20)

* These tubes had previously experienced the effects of a ruptured SR-15 piece before replacement. All ten tubes had been in S.R. #15 service.

The installation of the temporary effluent line which will be used during the tie-in of the D Pile and the DR Pile effluent lines was completed during the month. Footings have been poured on the junction box near Storage Building 103-D where the tie-in will be accomplished.

At F Pile a water trap was installed on the vent line of the new steel effluent line. Entrained water, which formerly spilled onto the pile building roof, is now separated from the vented air satisfactorily.

During the month, algae and sediment were removed from the walls and floor of the north half of the 107-B Building Retention Basin and placed in a trench especially dug for such purposes. At month end similar work is in progress in the south half of the same basin.

The screen in the filtered water line to the D Pile thermal shield cooling tubes was replaced on October 27. It had become badly obstructed following the tie-in of the filtered water line to the DR system on October 23. Process water from Riser A was supplied to the shield in the interim.

Pile Development

The D Pile Brown Temperature Recorder was modified to monitor 50 tubes per minute on its intermediate speed rather than 40 per minute, the previous rate. This has facilitated the compilation of outlet water temperature records, since the new rate seems to be optimum for collecting data. The rates of 40 and 60 tubes per minute were too slow and too fast, respectively.

The F Pile quadrant power level indicating system, which was reported under Pile Development of the September, 1948, P Division Report, was placed in service during October. Operating experience has been

satisfactory. The installation is found to be several times as sensitive as the chamber formerly positioned in the "A" Experimental Hole.

GAS PROCESSING BUILDING

In an effort to increase the capacity of the drying towers of the F Pile to handle the large volume of free water which has accumulated in the graphite as a result of the leak in Tube No. 3169-F, the following changes were made: (Evaluations are in progress at month end).

1. The amount of Silica Gel in each of the three driers was doubled by the addition of 1,100 more pounds.

2. Traps were installed on the coolers of the two cooler-blowers and the three driers for the removal of condensate from gas with a high dew point.

3. A twenty kilowatt electric heating element was installed above the Silica Gel bed of the No. 2 Drier in an attempt to shorten the regeneration time.

The F Pile experienced a high gas loss in October. Contributing factors are the work being done to correct the free water problem and the replacement of seven tubes.

SPECIAL HAZARDS

The B Pile Experimental Level continues to be maintained as a restricted danger zone owing to the abnormal neutron emanation from the uncooled "B" test facility.

Following the installation of a gun barrel of the type used in existing piles in the "A" test facility at D Pile on October 13, an intense neutron and gamma beam was detected leaking through a paraffin filled section of water tube inside the barrel. It was necessary to wholly restrict entry to the Experimental Level, the instrument room roof, and the 115 Building roof. Corrective means are being studied.

Two shipments of "B" casks were returned to 100-D Area during the month. All casks in the second shipment were highly contaminated. Readings of the outsides of some boxes ranged from 500 to 25,000 d/m, and on the insides readings from 1,000 to 370,000 d/m were obtained. Contamination on the casks gave readings of 2,000 to 220,000 d/m. This condition will be remedied at this site by cleaning and repainting the contaminated articles.

P Division

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of October was as follows:

Billets Produced	67 Tons
Rods Machined	192 Tons
Acceptable Pieces Canned	145 Tons

Melt Plant

The casting yields were as follows:

	September	October	To Date 1948
Billet	61.1	65.2	68.1
Solid Material	84.2	83.0	86.1

On October 25 the diffusion pumps, after a gradual drop in efficiency, would not reduce the pressure on the vacuum system below 150 microns. Both the H-16 and KB-300 pumps were disassembled for inspection. Some pieces of gasket and a considerable amount of carbonaceous material was removed from the H-16 pumps. After the pumps were thoroughly cleaned and reassembled with new gaskets, they functioned normally.

The processing of approximately 5,000 pounds of TXB containing magnesium was started on October 29. A maximum of one briquette (approximately ten pounds) is being added to each crucible charge.

Machining

Machining yields were as follows:

	% Yield (4" A's)		
	September	October	To Date 1948
	70.1	68.6	68.6

Mr. H. H. Jason, a consultant for the Carboloy Company, reviewed tool brazing and grinding procedures for the machining operation on October 6 and 7. A few minor revisions in tool preparation suggested by him are being investigated and adopted as standard practice were feasible.

Chip Recovery and Oxide Burning

The Chip Recovery yeild was as follows:

	% Yield		
	September	October	To Date 1948
	90.6	90.6	91.1

P Division

The entire Chip Recovery Process was operated 16 eight-hour shifts and the press was operated an additional 2 eight-hour shifts to produce 69,146 pounds of TX briquettes.

It was necessary to shut down the press on October 7 to replace a broken die plate insert and die table center stud bolt. Repairs were completed and operation was resumed on October 8.

The material burned in the oxide burner was as follows:

Weight Out - Pounds		
September	October	To Date 1948
13,305	22,153	95214

The burner was shut down on October 7 when the exhaust fan motor failed and again on October 22 when it was necessary to repair the furnace lining. Operation was resumed on date of shutdown in both cases.

An open brick lined plate was fabricated and tried initially for burning Melt Plant sawdust on October 23.

Canning Operation

The canning yield was as follows:

% Yield (4" A's)		
September	October	To Date 1948
90.5	88.8	88.7

Canning rejects, by cause, were:

	% Total Canned (4" A's)		
	September	October	To Date 1948
Non-Seating	3.1	4.3	4.3
Marred Surface	1.7	2.1	1.5
AlSi on Outside of Can	.6	.4	.9
Frost Test	.9	1.2	1.2
Bad Welds	1.8	1.7	1.7
Miscellaneous	1.4	1.5	1.7
	9.5	11.2	11.3

The canning yield decreased chiefly as a result of added difficulty with non-seating and marred surfaces. The recent training and replacement of utility operators on the canning lines attributed partly to non-seating rejects. The increase in marred surface rejects was principally a result of rotation and training of inexperienced machining operators.

P Division

Bad weld rejects increased early in the month due to an unusually high frequency of pinholes in the weld bead. It was found that the pinholes were caused by folds or cracks in the periphery of a number of the caps being used. The defects were too small to allow segregation of the faulty caps by visual inspection prior to processing. This particular lot of caps was used from October 4 to October 20, at which time an alternate thick cap (1/2") was substituted. It was found that the faulty lot of caps had been fabricated from 1 3/8" aluminum bar stock, which apparently was not large enough for complete surface cleanup during machining. The alternate cap will be used until a new supply of standard caps can be fabricated from 1 1/2" bar stock.

On October 2 one canned slug taken from truck No. 1 on H line showed incomplete transformation to the beta phase. This apparently resulted from poor temperature control associated with the morning start-up and almost immediate failure of the elements of the bronze furnace on that line. On October 27, samples taken from trucks No. 3, 4, and 7 on B Line showed incomplete transformation. There was an indication that a faulty bronze thermocouple was giving an erroneous reading and the temperature was actually below process limits. The 436 canned pieces involved have been set aside for transformation studies.

Work was completed on Production Test No. 313-105-M, "Uranium Slug Pickling". In order to evaluate the possibility of eliminating the straightening of "X" and "Z" slugs and thereby standardize on a minimum pickling time for both "A" and recovered slugs, 2339 recovered slugs were canned without straightening. It was found that there was no significant difference in non-seating rejects for either the slugs that were or were not straightened. Based on the results of the test a one-minute pickle was found to be adequate and will be adopted as standard practice.

Work was done intermittently through the month on Production Test No. 313-107-M, "To Evaluate the Effect of Sleeve Assembly Preheat on Non-Seating Rejects". From the results to date it appears that sleeve assemblies which have been preheated longer than the normal cycle will reduce non-seating but will appreciably increase penetration of the can wall. When temperature is reduced to eliminate excessive penetration, non-seating again becomes a problem.

The following special canning was done during the month:

Request Number	Contents	Number of Pieces
SR 15-20	Lithium Fluoride	283
SR 15-21	Lithium Fluoride	121
SR 63	Al and U-235	4
SR 65-1	Lithium Aluminum Alloy	49
ORNL 106	Thorium	288
ANL 114	Thorium Oxide	5
ANL 115	Molybdenum	4

In addition to the above, 1673 bismuth slugs and 1600 poison slugs were canned.

P Division

Recovery Operation

	% Recovered		Average Wt. - Lbs.	
	October	To Date 1948	October	To Date 1948
Z Slugs	73.2	69.8	3.902	3.904
X Slugs	20.9	22.9	3.861	3.855
Rejects	5.9	7.3	--	--
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

September	October	To Date 1948
.18/M	.11/M	.26/M

A total of eight autoclave failures occurred in October. Six slugs were completely destroyed, one had a ruptured sidewall near the central part of the can wall, and another ruptured at the base of the cap. The cause for these failures appeared to be incomplete bonding of the cap, and pinholes in the can wall.

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

	% Useable		
	September	October	To Date 1948
Aluminum Cans	95.2	94.3	92.1
Aluminum Caps	99.3	86.6	96.6
Steel Sleeves	87.3	90.9	85.5

The decrease in the quality of aluminum caps resulted from an abnormal number of rejections for small and large diameters. Additional rejections were made in an attempt to segregate caps having faint folds and cracks on their peripheries, which were used from October 4 to October 20. Since it was not practical to segregate the faulty caps by visual inspection and those passed were found to be causing a considerable number of pinholes during the welding of canned pieces, the caps were withdrawn from process.

Material Handling

Four carloads, containing 192 tons of alpha rolled rods, were received in October. Two carloads, containing 37 tons of oxide, were shipped to Vitro Manufacturing Company, and two carloads, containing 79 tons of billets, were shipped to Vulcan Crucible Steel Company.

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which heretofore has been stable, has been rising; work got under way during the week of October 19 to construct a new pond north of the present one. This rise in level is attributed to aluminum hydroxide, hydrolyzed from aluminum nitrate and sodium aluminate wastes, which apparently settled to the bottom of the pond and prevented further seepage. A leak developed in the east wall of the pond dike during september and persisted in spite of attempts to stop it with cinders. On October 25 a section of the north dike wall, which had given no indication of leaking or seepage, gave way and essentially all of the water in the pond, (an estimated 16,000,000 gallons) ran unfiltered into the river. The hole in the dike was repaired on October 27. A survey of the area temporarily flooded by this break indicated that no special decontamination or backfilling procedures would be required. It is estimated that the new pond will be ready for use in November.

Development Work

After additional trials early this month, the trial use of a cylindrical cover over crucibles during burnout was discontinued because it did not reduce cracking and oxidation of crucibles.

Sheet metal covers were installed on the pickle line driers. The cover concentrates the hot air directly on the baskets of slugs. This results in complete drying over a shorter period of time, thus reducing surface oxidation of slugs.

Experimental work has now been completed on the pickling of TX for Melt Plant use. It is apparent that 25 lbs. more solid metal can be poured from a crucible charge if the turnings, normally about half of the charge, are pickled prior to use. Plans are being drawn up to provide facilities for production use.

P Division

305 Area Test Pile

Operation of this unit was continued on a one-shift, six-day week schedule in October. A total of 198 tests was run on canned slugs, 71 on billet eggs, 420 on graphite bars, and the following on special work requests:

Request No.		No. of Tests
32	To test sampled dust collected from the various layers of DR for possible contamination.	27
33	To find a suitable cleaning agent for DR Construction.	5
34	To test sample of liquid soap for possible use in 101 Area.	2
35	To determine absorption cross-section of "Mulsirex" cleaning solvent and "Turco" de-scaler for use at 105 DR.	4
36	To determine whether quartz tubes purchased for use in combustion furnaces are of suitable quality.	6
37	To determine absorption cross-section of "super-pure" aluminum as compared to 2-S for possible use at HW.	3
38	To determine absorption cross-section of a sample of SR-65.	2

Special Hazards

The program for reducing radiation and contamination hazards in the Melt Plant is being continued. The rotation of operators between jobs has proven effective in reducing badge exposures to less the 300 mrep per week. The furnaces are being cleaned on a regular schedule of twice per week which has appreciably reduced radiation levels. Additional reductions have been gained through further education of personnel.

A large capacity vacuum cleaner has been placed in service for cleaning floors, equipment, and walls in the Melt Plant. It is expected that continuous cleaning will reduce airborne contamination.

A study is being made to determine means of reducing air contamination in various locations in the area.

All process water from the 300 Area, potentially contaminated, flows to a retention pond from which it either evaporates or seeps through the ground to the river. For over two months the level of this pond,

S DIVISION

OCTOBER, 1948

OPERATING SECTION

I. GENERAL

Forty-five batches were started in the Canyon Buildings and forty-two batches were processed through the Concentration Buildings and the Isolation Building. The average purity for the completed batches was 98.7 percent.

The over-all material balance for the T and B Plants (including the Isolation Plant) averaged 101.5 and 99.9 percent, respectively, for a combined average of 100.7 percent. Waste losses for the two plants averaged 2.6 percent.

Canyon and Concentration Building Production Performance Data - (10-1-48 - 10-31-48, inclusive)

	B Plant	T Plant	Combined
Number of charges started	22	23	45
Number of charges completed	22	20	42
For completed charges:			
Percentage of starting product in waste			
This month	2.5(a)	2.7(a)	2.6
Last month	2.7(b)	2.7(b)	2.7
Cumulative to date	4.9(c)	4.8(c)	4.8
Percentage of starting product recovered:			
This month	97.1	97.0	97.1
Last month	97.5	92.3	95.2
Cumulative to date	97.2	95.5	96.5
Percentage of starting product accounted for:			
This month	99.6	99.7	99.7
Last month	100.2	95.0	97.9
Cumulative to date	102.1	100.3	101.3
Gamma decontamination factor (log.)			
This month	7.70	7.89	7.78
Last month	7.70	7.83	7.76
Cumulative to date	7.33	7.30	7.32

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.038%-T Plant; 0.023%-B Plant. (b) 0.032%-T Plant; 0.021%-B Plant. (c) 0.136%-T Plant; 0.0077%-B Plant.

Isolation Building Performance Data (10-1-48 - 10-31-48, inclusive)

	% of Incoming Product			
	Prepared for Shipment	Recycle	Losses	Material Balance
Average for this month	94.0	6.83	0.08	100.9
Average for last month	94.9	6.98	0.01	101.9
Average to date	96.1	4.44	0.10	100.6

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	302
End of month	303
Net increase	1

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

3 transfers from other divisions (all Weekly Roll)
4 terminations (3 Weekly Roll, 1 Monthly Roll)
3 new hires (2 Weekly Roll, 1 Monthly Roll)
1 temporary removal from payroll (Weekly Roll)

Changes in supervisory organization:

W. B. Simeral, Supervisor-in-Training, terminated on October 12, 1948 to accept employment at another location.

J. P. Derouin, a new hire, joined the organization during the month as a Supervisor-in-Training.

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 at both plants with all runs being processed at 30 percent volume reduction. No significant increase in waste losses was evidenced with the exception of the first cycle by-product losses at B Plant. The increase of 0.15 to 0.20 percent of a normal run per batch of this waste is not attributed to volume reduction.

F Cell Waste Loss Study - T Plant

The installation of the new line from the metathesis catch tank (F-9) to the precipitator (F-1) was completed. Starting with run T-8-09-F-17, the precipitator has been flushed with metathesis wastes prior to the rework of the metathesis waste solution to remove the product bearing heel from the tank. The average waste loss for the twelve runs so processed has been 0.06 percent as compared to 0.17 percent for the thirty preceding runs. The procedure will be extended to the B Plant during the coming month.

Metathesis Time Cycle Reduction - T and B Plants

As was done last month in Cell B of the 224-T Concentration Building, the necessary piping has been installed in Cell E at T Plant and Cells B and E at B Plant to permit the metathesis of the lanthanum fluoride product cake in the B-4 tank rather than the F-1 precipitator. This change has effected a three and one-half hour reduction in the metathesis time cycle to a net cycle of approximately seventeen hours.

WASTE DISPOSAL

241-TX Tank Farm - Project C-163

The sub-contractor's phase of the work was essentially completed during the month.

Due to work of higher priority (291 Building Ventilation Sand Filters), very little progress was made on the General Electric phase of the job. The portion of the installation which will permit 221-T wastes to be diverted to the 241-TX tank farm is essentially complete, however.

Cribbing of Second Cycle Wastes - B and T Plants

At T Plant, the cribbing of second cycle wastes in tank X-112-T was completed.

At B Plant, a total of 211,000 gallons from the X-105-B tank has been cribbed. Drainage from the crib remains slow limiting the jetting rate to approximately 6,000 gallons per day. Four test wells are being installed in the tile field for the purpose of determining that the drainage from the field is satisfactory. When these wells, which will terminate at the level of the tiles, are complete the crib will be permitted to overflow to the field.

200 Series Settling Tanks - B and T Plants

Soundings of the X-201-T tank indicated an additional capacity for settling of approximately 375 batches before the diversion of wastes to the X-202, 3 and 4-T tanks will be necessitated.

At B Plant, the Concentration Building wastes were diverted to the X-202, 3 and 4-B tanks when a slight increase in suspended solids in the effluent from the X-201-B tank resulted in an increase in the crib drainage time.

Crib and Tile Field - Canyon Drainage Water - B Plant

The drainage rate of the 5-6 crib, used for the disposal of cell drainage water from the 221-B Canyon Building, decreased to the extent that it became necessary to permit the crib to overflow to the tile field. Test wells have been installed in the tile field to permit the detection of unsatisfactory drainage or accumulation of liquid in the vicinity of the tile fingers.

Waste Status

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

B Plant

Bldg. 241 Tanks	Waste	Percentage Full			* Reserve Capacity In Batches to Process			
		B	C	BX	B	C	BX	Total
x101,2,3	Metal	100	100	75.3	0	0	66	66
x104,5,6	Metal	-	100	0	-	0	269	269
x201,2,3,4	Metal	0	100	-	-	0	-	-
x107,8,9	Metal	-	-	-	-	-	-	-
x107,8,9	1st Cycle	100	100	7.4	0	0	409	409
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	-	-	-	-	-	-	-
x104,5,6	2nd Cycle	68.6	-	-	200	-	-	200
x110,11,12	2nd Cycle	92.2	-	0	50	-	636	686

T Plant

Bldg. 241 Tanks	Waste	Percentage Full			* Reserve Capacity In Batches to Process			
		T	U	TX	T	U	TX	Total
x101,2,3	Metal	100	100	-	0	0	-	0
x104,5,6	Metal	-	100	--	-	0	-	0
x201,2,3,4	Metal	0	0	-	--	37	-	37
x107, 8,9	Metal	-	11.0	-	-	239	-	239
x107,8,9	1st Cycle	100	-	-	0	-	-	0
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	79.0	-	-	88	-	-	88
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	66.8	-	-	195	-	-	195

- Tabulated below are the figures used in the calculation of the reserve capacity in batches. Effect of volume reduction program is reflected in the first and second cycle waste figures.

	B Plant	T Plant
Metal Waste	5,900 gal./batch	5,900 gal./batch
1st Cycle	3,600 gal./batch	3,700 gal./batch
2nd Cycle	2,500 gal./batch	2,700 gal./batch

MECHANICAL PERFORMANCE

B and T Plants

Bismuth Metal Dissolvers - Project C-262

At B Plant the installation of the 271-B bismuth metal dissolver was completed and placed in operation on October 14, 1948. Its operation in the preparation of bismuth subnitrate has been satisfactory.

At T Plant the following modifications were made to the original installation.

(a) Installation of a ring type sparger
(b) Installation of an entrainment separator
(c) Replacement of the agitator shaft
(d) Installation of a longer specific gravity dip tube

All modifications were successful excepting the entrainment separator which will be redesigned.

Agitator Failure - B Plant

The agitator on the extraction precipitator (Section 8) failed on October 2, 1948 and was replaced. Investigation revealed the cause of the failure to be a separation of the shaft from the motor at the coupling. This assembly had been in service since June 26, 1947. The coupling pins on future agitator installations will be more positively secured.

Whiting Crane Brake Shaft Replacements

The low carbon, mild steel brake screw shafts on all S Division Whiting cranes with the exception of the 10 ton crane in B Canyon Building have now been replaced with the heavier alloy shafts as recommended by the Project Engineering Division in Recommendation Report No. 100.

Process Leak - T Plant

The first cycle product waste jet assembly was determined to be leaking through the action of the conductivity meter. It was necessary to replace the assembly.

S Division

SPECIAL HAZARDS

Stack Gas Contamination

a. Sand Filters

The T Plant sand bed filter was completed well in advance of schedule and put into operation on October 15, 1948. It has remained in constant use and is performing satisfactorily. An air flow rate averaging 23,000 cfm has been maintained accompanied by a pressure drop across the unit equivalent to 3.9 inches of water.

Sufficient laboratory analyses are not yet available to present an exact efficiency figure, but preliminary instrument surveys indicate a figure of approximately 99.5 percent.

With the early completion of the T Plant unit, every effort was focused on the installation at B Plant. All previous schedules were exceeded and the B Plant sand filter unit was placed in operation on October 30, 1948. In effecting this expeditious completion of construction it was necessary to use Monterey and Eau Claire sands as used at T Plant although the American Graded sand crushed flint had proven somewhat superior in the test units as was reported last month. Influencing this decision were the facts that procurement of the crushed flint would cause a delay of approximately one month in the completion of the filter, and that retention of particulate matter on the coarser aggregates in the production unit (not used in the test units) would probably result in an insignificant difference in efficiency for the completed unit. An increased quantity of sand was used, however, in order that the 20 - 40 mesh sand layer might be increased from two feet to three feet in depth. Compensation for this additional resistance has been overcome by a revision in duct work permitting operation of the two electrically operated ventilation fans in series. The preliminary operation of the unit appears very satisfactory.

b. Type 6 C. W. S. Filters

Installation of the revised fiberglass faced coil filters was completed in the B Plant Canyon Building and begun at T Plant. Due to other factors and the installation of the sand filter unit no significant evaluation has yet been possible.

c. Stack Sampler and Washer

A special apparatus for obtaining a representative sample from the top of the 200 foot ventilation stack has been designed and is well along toward completion at month end. Incorporated in this unit is a provision for introducing water into the inner stack. It is

hoped that this sampling device will provide a means of obtaining much desired information relative to the stack discharge gases. It will be put into service early in November.

DESIGN AND CONSTRUCTION CONSULTANT'S SECTION

Redox Development

The specifications for the Test Plant remote maintenance crane have been approved and an order has been placed for the basic crane unit. Experimental work on the binocular periscope for this crane is continuing; however, no definite selection of any one of the three systems under consideration (twin tube system, single tube flicker system, single tube polarized light system) has been made for final development.

Final G. E. approval has been given to the 201-R Building floor plan, sections, and elevations as proposed by the Architect-Engineer. The thickness of the concrete shielding in the cell covers, canyon walls, and crane parapet wall has also been established. Based on a recent agreement with the Health Instrument Division to accept a 1 mr/hr radiation level from all sources (direct radiation and sky shine) at grade level outside of the canyon area during charging, the thickness of the canyon roof is now being determined.

A third type of canyon exhaust stack, a simple unlined single stack, is being considered in the Test Plant design. Previous preliminary design and cost estimates have included (1) a stainless steel lined, double stack of concrete and acid brick construction, and (2) a self supporting stainless steel stack. The final decision in this matter will await the completion of the cost estimates and an evaluation of the desirability of each type of installation in view of past experience with stack gas contamination.

As a result of a meeting between representatives of the Design Division, the Metallurgical Group of the Technical Division, the S Division, and the Kellex Corporation, the blanket specification covering the heat treatment of 25-12 S Cb stainless steel after fabrication has been waived. It was felt by the Engineering and Metallurgical Groups present that this treatment was not essential to the proper resistance of the majority of the Test Plant equipment to corrosion or failure due to internal stresses. Heat treatment of specific items of equipment will, however, be requested by the Architect-Engineer and the General Electric Company. The requirements for special finish on vessel surfaces have been limited to the equivalent of a #4 finish on those vessels containing the final product solution which must be serviced by direct maintenance. No special finish other than the proper grinding of welds was specified for any remotely maintained equipment.

Design meetings are now in progress between the Redox Section of the General Electric Design Division and representatives of the Architect-Engineer, to establish mutually satisfactory equipment arrangements

for the Test Plant cells, tank sizes and tank top nozzle arrangements, and details associated with the remote installation of cell equipment and sub-assemblies. Based on the agreements reached on these points, one or more standard wall connector patterns will be established for the standard cell (s) of the Test Plant, and piping-through-concrete layouts will be prepared accordingly. Additional meetings have been held to reach agreements on the electrical and ventilation aspects of the Test Plant.

A document has been issued by the Process Group of the Redox Design Section (HDC-736, October 11, 1948) suggesting that serious consideration be given to the adoption of the ORNL solvent extraction process for uranium decontamination at Hanford, retaining the present Bismuth Phosphate process for the decontamination of plutonium and eliminating the Redox process as it now exists from further consideration at this time. This proposal is similar in intent to the coupling process suggested by the S Division some time ago. It is the opinion of the S Division that the adoption of an effective uranium recovery process which can be coupled to the existing $BiPO_4$ process would provide the most logical and least costly approach to the uranium recovery problem. It must be recognized that replacement of the eminently successful $BiPO_4$ process for plutonium production by an untried substitute may seriously jeopardize the meeting of future production commitments.

After a careful study of the changes involved, the second and third uranium decontamination cycles of the Redox Main Plant process flow sheet have been altered and condensed to form a continuous process. Since no plutonium is included in these operations, the batch size control consideration is not a governing factor. Among the advantages offered by this change is the elimination of ten large tanks and four "hot" pumps from the process.

BY Tank Farm

Excavation for the twelve 758,000 gallon tanks was completed during October and the forms, including the reinforcing steel for four tanks, were set. Detailed design work on the twelve tank waste storage farm (241-BY) continued during the past month. The availability of 9' x 30' steel plate in several thicknesses for the vertical walls of the tank liners has permitted the use of two rather than three lifts of steel in the fabrication of the tank liners with a resulting reduction in weld length for the tank farm of approximately 2,900 feet. This reduction in weld length combined with that previously made in the bottom dollar construction of the tank liners represents a total weld saving of approximately 0.7 mile for the BY Tank Farm over the equivalent construction in the TX Tank Farm. Improved prefabrication methods for the wall plates of the steel liners have also permitted an additional 2,500 feet of tank plate welding to be done by machine.

POWER DIVISION
OCTOBER 1948

GENERAL

A survey during the week ending October 21 on all Power Division steam line supporting poles revealed a total of 211 poles requiring replacement or stubbing. This work is scheduled for completion at an early date.

PERSONNEL AND ORGANIZATION

Number of employees on payroll	October
Beginning of month	418
End of month	423
Net Increase	5

The above indicated net increase of five employees was a result of the hiring of seven operators, the transfer into the Division of one supervisor-in-training, the termination of two operators and the transfer out of the Division of one operator.

On October 20, a Division organization change was effected when the 100 Areas Chief Supervisor was assigned to head up a newly formed power facilities inspection group. He was succeeded by the transfer of the 200, 300, White Bluffs Areas Chief Supervisor. The 200 Areas Area Supervisor was promoted to Assistant Chief Supervisor, assuming charge of power operations for the 200, 300, and White Bluffs Areas. The 200-E Area Senior Supervisor was made Area Supervisor for the 200 Areas, and was succeeded by the promotion of a shift supervisor.

100 AREAS

The screens in the process water pump discharge lines were inspected during the month for the B and F Areas, and conditions reported as satisfactory.

On October 6, the export water system was sectionalized to facilitate independent area operation, with the B Area exporting the supply to the 200 Areas. This arrangement was necessary to effect isolation of a section requiring temporary suspension at the intersection of the new 72-inch sewer line being constructed in the D Area.

In the D Area, the south 225 psi steam loop was removed from service for eleven hours on October 13 while a connection was made to supply the group of process water pumps being installed.

On October 17, in the B Area, a line break occurred in the fire and sanitary water main, near the elevated storage tank. Repairs were completed and services restored on October 18.

Power Division

The Nos. 1, 4, 7, 8, and 9 process water pumps in the D Area were each out of service successively for several days to install discharge line connections to supply lines to the Dr pile building.

On October 15, the No. 8 process water pump motor windings failed in the F Area. Repairs have been completed.

A special shipment of Washington coal was received in the F Area and tests conducted to determine effects of lowering overfire air pipes on No. 3 boiler. Results of tests were incomplete at the end of the month.

In the F Area pile building valve pit, the hot water recirculating system was conditioned for service on October 22 at the request of the "P" Division.

200 AREAS

On October 4, steam service to the Canyon Building in the West Area was disrupted when several steam line supporting poles broke. Eleven poles were replaced and the line returned to service on October 5. No interruption to normal processing was effected.

Steam service was interrupted to the West Area Isolation Building for seven hours on October 30 to make connection for the supply line to the construction area.

300 AREA

Construction on No. 3 boiler was virtually complete at the month's end; however, several minor changes to piping, completion of combustion control, and safety attachments must be completed prior to putting this unit into service. The sub-contractor failed to meet his schedule date of October 15.

WHITE BLUFFS

Operations normal with ice production yield approximately 15 tons daily. One hundred eighty tons of ice in storage at month's end.

POWER DIVISION STATISTICS

From October 1, 1948

Through October 31, 1948

			AREAS		
			100-B	100-D	100-F
RIVER PUMP HOUSE (Building 181)					
River stage	Feet above sea level	(max)	388.00	380.0	366.5
		(min)	386.7	379.2	365.5
		(avg)	387.4	379.6	366.0
River temperature	avg. °F.		57.4	57.9	58.5
Water pumped to Reservoir	gpm avg. rate		39673	37505	35003
Water pumped to Refg. Condensers	gpm avg. rate			0	0
RESERVOIR (Building 182)					
Water pumped to Filter Plant	gpm avg. rate		32945	33062	30917
Water pumped to Condenser System	gpm avg. rate		3863	3854	4060
Water pumped to Export System	gpm avg. rate		2865	589	26
	gpm normal rate		3480	3480	3480
Chlorine added at #1 inlet	pounds		15875	16340	10000
FILTER PLANT (Building 183)					
Filtered water to Power House	gpm avg. rate		274	284	252
Filtered water to Process	gpm avg. rate		29477	30067	28798
Filtered water to Fire & Sanitary	gpm avg. rate		134	169	147
Chlorine used in Water Treatment	pounds		5836	6960	6800
	ppm avg.		1.55	1.74	1.36
Lime used in Water Treatment	pounds		24637	13700	12000
	ppm avg.		2.0	1.1	1.0
Coagulant used in Water Treatment	pounds		113553	124820	120000
	ppm avg.		9.2	10.2	10.4
Raw Water pH	pH avg.		8.02	8.0	8.2
Finished Water pH	pH avg.		7.50	7.42	7.40
Alkalinity, M. O. - Raw	ppm avg.		60	58	60
Finished	ppm avg.		58	52	52
Residual Chlorine - Settled	ppm avg.		.30	.37	.21
Finished	ppm avg.		.097	.17	.14
Iron - Raw	ppm avg.		.07	.07	.06
North Clearwell	ppm avg.		.017	.02	.02
South Clearwell	ppm avg.		.016	.02	.02
Hardness - Finished	ppm avg.		71	72	72
Turbidity - Raw	ppm avg.		3.7	3.0	4.0
Filtered	ppm avg.		0	0	0
REFRIGERATION (Building 189)					
Refrigeration produced	Tons per day			-	-
Temperature, Process Water In	avg. °F.			-	-
3. Temperature, Process Water Out	avg. °F.			-	-

Power Division

POWER HOUSE (Building 184)

Steam generated - Total	M pounds	99029.8	101116	94682
Average rate	lbs./hr.	133105	135908	127260
225 psi Steam to plant (est.)	M pounds	86658	88494	83100
15 psi Steam to plant (est.)	M pounds	488	488	220
Coal consumed	Tons	7390	7435	6962
Coal in storage (est.)	Tons	40117	43640	43667

DEAERATOR PLANT (Building 185)

Water flow	gpm avg. rate	29227	29817	28548
Chemicals consumed:				
Dichromate	pounds	24565	20000	21500
Sodium Silicate	pounds	138706	195520	219500
Chemical Analysis:				
pH	pH avg.	7.67	7.68	7.66
Dichromate	ppm avg.	1.9	1.9	2.0
Silica	ppm avg.	3.5	5.5	5.5
Dissolved Iron	ppm avg.	.016	.02	.02
Free Chlorine	ppm avg.	.083	.14	.12

PROCESS PUMP ROOM (Building 190)

Total Water pumped	gpm avg. rate	29052	29642	28373
	gpm normal rate	31541	32147	32340
Water temperature	avg. °F.	59.9	60.4	60.1

VALVE PIT (Building 105)

Chemicals consumed:					
Solids	pounds		2400	2000	1900
Chemical analysis:					
A, B, C, & D Headers					
Standard limits					
pH 7.5-7.8	pH	(max)	7.70	7.70	7.70
		(min)	7.60	7.60	7.60
		(avg.)	7.65	7.65	7.65
SiO_2	ppm	(max)	4.5	6.0	6.0
		(min)	3.0	5.0	5.0
		(avg)	3.5	5.5	5.4
$Na_2Cr_2O_7$	ppm	(max)	2.0	2.0	2.1
		(min)	1.8	1.8	1.9
		(avg)	1.9	1.9	2.0
Iron	ppm	(max)	.02	.02	.03
		(min)	.01	.01	.01
		(avg)	.016	.02	.02
Chlorides	ppm avg.		1.7	1.7	1.5

Power Division

From October 1, 1948

Through October 31, 1948

		200 AREAS	
Reservoir (Building 282)		**200-E**	**200-W**
Raw water pumped	gpm avg. rate	1747	1733
Filter Plant (Building 283)			
Filtered Water Pumped	gpm avg. rate	438	358
Chlorine Consumed	lb.	243	223
Alum Consumed	lb.	1500	2000
Chlorine Residual - Sanitary Water	ppm	.75	.7
Power House (Building 284)			
Steam Generated - Total	M lb.	17762	25455
Steam Generated - Ave. Rate	lb./hr.	23874	34214
Coal Consumed (Est.)	tons	1344	1619
Coal in Storage (Est.)	tons	13641	12705

		300 AREA
Power House (Building 384)		
Steam Generated - Total	M lb.	11227
Steam Generated - Avg. Rate	lb./hr.	15090
Coal Consumed - Total (Est.)	tons	1125
Coal in Storage (Est.)	tons	863
Sanitary and Fire System (300)		
Well Water Pumped - Total	gal.	30,635,000
Well Water Per Day	gal/day	988,000
Well Water	gpm avg. rate	686
Chlorine Residual	ppm	0.2

INSTRUMENT DIVISION

MONTHLY REPORT

OCTOBER, 1948

November 2, 1948

GENERAL

Dr. G. W. Dunlap of the General Engineering and Consulting Laboratory spent several days with members of the Instrument Division discussing instrument problems.

The Instrument Division was represented at the Information Meetings held at Argonne, October 18, 1948, and the Gas Discharge Conference held at Brookhaven October 27 through 29, 1948.

A representative also attended a conference on the P-10 Project held at Argonne during the month.

Organization and Personnel

Number of employees on payroll:

	October
Beginning of Month	206
End of Month	207
Net increase	1

Reason: 1 new hire, 3 transfers from other Divisions, 2 terminations, 1 transfer out of Division.

100 AREAS (Reference Report HW-11431)

After completion of graphite packing job at 105-DR, the "P" Division requested that 100-D Area Instrument Division conduct a tube survey for vertical bowing. Necessary equipment was assembled and on October 9, 1948, the Construction Lay-Out Group, under Instrument Division supervision began tests on a representative number of tubes in the 105-DR pile. Subsequent readings indicated a sag beyond tolerance in the center section of the unit. During the restacking which followed, tube surveys were made to insure alignment as the stacking progressed.

Previous to survey mentioned above the 100 Areas Instrument Division set up necessary equipment and followed 105-DR foil test procedures as required by Technical Division. Approximately 175 manhours were expended on the job. The same coverage was again required when tests were repeated following completion of repacking the unit.

No. 1 and 4 pump discharge lines (190-D) tie-ins to the 105-DR headers have been completed. Flushing was carried out with orifice plate in the No. 1 line. Construction Division has been advised to leave plates out of remaining lines until flushing has been completed.

Increasing difficulty in all areas has been recently experienced due to the

Instrument Division

100 Areas (Cont.)

tendency of master pressure controllers to respond to pressure changes in air supply. A study has been completed indicating that compressor oil is passing the filters. Corrective measures are now being tried out in 100-B and 100-F Areas.

Installation of the proportional counting equipment in control panels near the control desk has been completed in all three areas. Clocks will also be installed when received.

A work order was received for the removal of material and temperature recorder from 108-B and 108-F. The job is approximately 25% complete. This is in preparation for the P-10 Project.

Continued moisture readings have been taken during the drying-out of the 100B unit. Last readings indicate that #95 plenum chamber sample is still high compared to inlet and exit readings.

The Quadrantial Monitoring System of 105-F has been completed to the satisfaction of "P" and Technical Divisions, however, some additional work is anticipated in repositioning chambers to bring the galvonometer spot to the proper location on the scale during normal operation. The "A" hole chamber will be removed as soon as Production Test is authorized.

On October 20, 1948, at 4:15 A.M. the 105-F unit was shut down due to process water tube leak. Again the vicinity of the leak was determined by the dew point analysis of the plenum chambers.

The 105-F was also shut down at 6:50 A.M. on October 1, 1948, immediately after start-up. In this instance failure of No. 2 Control Beckman was blamed. Trouble was traced to chamber or cable connections (undetermined); perhaps moisture that accumulated during shutdown.

Instrumentation for CO_2 addition to pile atmospheres in 100-B and 100-F Areas has been requested. To date purchase requisitions for 100-B instruments have been placed but orders for 100-F will be held up pending current developments toward procurement of 100-H instrumentation.

200 AREAS (Reference Report No. HW-11432)

Instruments for the stack air sand filter were put in service on October 14, 1948, in 200 West Area. The instrumentation provided was differential pressure across the filter, differential pressure across either of the three exhaust fans, measurement of air flow in the vent duct and measurement of sample air flow from the filter inlet and outlet. Special flow measuring manometers with an expanded range for low rates were fabricated in the instrument shop. All instruments performed satisfactorily with minor changes when the unit was put in service. Several other jobs incidental to the use of the sand filter became necessary. All draft gauges measuring cell and canyon pressures had to have the measuring fluid changed due to the pressure change, the controller to the steam driven fan had to be serviced and reconnected and considerable time was spent in making special pressure measurments in 224-T to allow installation of proper orifices in the exhaust systems to maintain a pressure balance. The same type of instrumentation is now being installed in 200 East Area and should be completed well ahead of the scheduled start-up time.

Instruments were installed and put in service for the new Bismuth sub-nitrate facilities in 271-B. The experimental facilities in 271-T are now being revised along the same lines.

Instrument Division

200 AREAS (Cont.)

Conduits housing the cables from the ionization chambers in the canyon to the Beckman amplifiers in the operating gallery have been sealed at the canyon and at the pull box in the gallery in both 221-B and 221-T. The contaminated Beckman amplifier multiple switch and L&N recorder were removed from Section 12 panel in 221-B and replaced by instruments from inactive Panel 19. Survey of the instruments removed indicates that the wiring and working parts are so grossly contaminated that it is not advisable to attempt salvage of any part of them. As replacements for these instruments are received the contaminated instruments in Section 13 will be likewise replaced. Survey of these instruments indicates a higher degree of contamination than those at Section 12. A Beckman amplifier was removed from Section 5 in 221-T for repair prior to the sealing of the conduits and found to be contaminated to the extent that immediate repair was impossible. It has not yet been determined whether the instrument can eventually be repaired or will be replaced.

Work has been started for putting cell #2, Building 231-W, into operation. As complete instrumentation had not been provided in the original construction, those instruments have been requisitioned. Thermohms and titrometer electrodes are being installed with the necessary leads so they may be put in service upon receipt of the instruments.

New line-operated alpha-amplifiers with newly designed standard and horizontal chambers were put in service in 200 East and West. Some time was required in putting both instruments in satisfactory operating condition. Due to the increased workload in counting air samples both of the original battery operated alpha counters have been left in service. This heavy work load has presented a serious problem in taking these instruments out of service long enough to care for satisfactory maintenance and repair.

The automatic sample changer for alpha-counting has undergone extensive tests and has now been put in service. About 20% to 25% of the samples have required a re-run because of erratic operation which is much better performance than has been previously attained. Sensitivity to room noises has been decreased somewhat by dampening the amplifier chamber with a sheet-rubber coating, but still remains a problem.

A preliminary survey of the air conditioning equipment and controls was made in 200 West Area buildings for the purpose of determining the number and types of control systems in service. This survey and subsequent work on the systems revealed some controls to be inoperative and all controls in general to be in poor condition. Special tools and test equipment have been set up in the power house and a similar test bench is being set up in the 271-T instrument shop to handle this work. Repairs and adjustments now being made go only so far as is necessary to put the controls in operation. After all systems have been serviced in this manner it will be necessary to completely inspect and repair every control and check its operation on the test bench. A list of parts needed is being compiled as encountered and a history of repairs necessary for proper maintenance of operation is being prepared. In view of what has been found it will probably be some time before maintenance of these controls can be kept on a current basis. The systems in 200 East Area have not yet been touched.

The 120-ton railraod scales at Riverland Yard were overhauled and calibrated during the first week of the month. Scale mechanics from both 200 Areas were used on the job with assistance from the Transportation Labor Group. All

Instrument Division

200 AREAS (Cont.)

pivots and ways were removed, cleaned and given a protective coating of lubricant. Of the 125 pivots and ways cleaned, eight were found to be chipped but not to the extent that accuracy of the scale would be impaired. Calibration was accomplished by using two rail cars of known weight and adding available scale weights to cover the intervening span. Accuracy across the scale appeared to be within 20 lbs. From the condition of this scale it seems that an annual overhaul would be advisable.

300 AREA (Reference Report No. HW-11433)

C-171 - Crane Periscopes

Present operating area conditions have delayed work on this project. The completion date has been modified from August 31, 1948, to December 31, 1948.

C-219 - Additional Health Instruments

The 20 CP survey meters manufactured at Hanford Works have been accepted by the H.I. Calibrations Group and are now in field service. The 30 units being manufactured by Technical Associates have not been received.

The 20 Junos manufactured at Hanford Works have been altered by adding individual potentiometer range adjustments and by changing the meter faces to conform with the curvature of the radiation calibration curves. The 30 units manufactured by Technical Associates have been received and are being checked, in preparation for the scanning and calibration test.

Design approval of the neutron survey meters was received recently from the H.I. Division. An urgent request was received to expedite the completion of this part of the project at an early date. Most of the component parts have been fabricated by the Machine Shop in preparation for Electronic Construction Shop assembly which is scheduled for the first part of the next month.

Approximately 45 per cent of the proposed work on this project is now complete

C-290 - Fabrication and Installation of Neutron Spectrometer

A copy of the directive covering this project has been received. Some clarification concerning the completion date and the division of responsibility has been requested. Because of present commitments, work on this project cannot be started before late December or early January.

C-220 - Building 3708

All pouring forms and supports have been removed. A complete crew of carpenters, electricians, and pipe fitters are working on the installation of the drop-ceiling, Mono-rail supports, inside framing, and the covering for the roof. Available information indicates that most of the work mentioned above should be finished during November.

Optical Shop

A 0.003 inch thick disc of uranium glass was successfully polished in furnishing a new fluorescence standard for the H.I. photometer.

Instrument Division

300 AREA (Cont.)

Optical Shop (Cont.)

Several attempts have been made to evaporate nickel onto glass. Destructive alloying of the nickel with the tungsten heater wire has not permitted successful results in obtaining desired film thickness. Experiments are being continued with an indirect heating method.

Maintenance Section

The question of the accuracy of the thermocouples in the 303 Area canning baths was raised again this month. To improve our checking procedure, the freeze point method of calibration was abandoned and a thermocouple checking furnace was used. Comparison tests are made against a standard platinum, platinum-radium thermocouple. The checks have shown only 14 thermocouples, of the 90 tested, to be outside a range of plus or minus one degree at 600 degrees Centigrade. A further check on the overall performance of the canning pot potentiometers showed that they were indicating within 0.4 of a degree of the correct temperature. It is planned to continue using calibrated chromel-alumel thermocouples on the canning baths and to make a weekly check of overall performance with a portable potentiometer. Studies are being made to determine the proper frequency of replacement.

Development Section

Power level indicator for 100 Areas -- Shop tests of the input flow resistor indicated an accuracy of better than one quarter of one per cent on all ranges. Power readings on the Model DR unit showed an accuracy of one half of one per cent when using a resistance box as a dummy thermohm. Operating instructions are being prepared.

Cover motion recorder for 100 Areas -- The Unit has been shop tested in Building 3706 and is now being installed in the 100-D Area. The Bailey recorder has not been received. The readings are to be temporarily indicated by using a calibrated slide wire in conjunction with a voltage-null detector.

Design Section

Current work involve the design of instruments for measuring bowing in process tubes, cross sectional contour of process tubes and bowing of thimble tubes. Additional problems include an infinitely variable timing device for IDL Scalers, and a "Thermal Precipator" and "Scalematic Unit" for dust particle analysis.

700 AREA (Reference Report No. HW-11434)

Standard Section

Equipment was provided and set up to calibrate a large number of Chromel-Alumel thermocouples with an accuracy of plus or minus 1°C at 600°C. They were checked against a platinum to platinum rhodium thermocouple. This thermocouple has been calibrated at the bureau of standards, and its accuracy was certified at ± 0.5°C in the range used on our test. Its temperature coefficient at 600°C is 5.5 microvolts per degree centigrade, and this emf was checked against a type K potentiometer using a extra high voltage sensitive galvanometer. The component limiting the accuracy of this

Instruments Division

700 AREA (Cont.)

Standards Section (Cont.)

combination was the standard cell in the potentiometer circuit, having an emf known to 1.0 microvolts, which is five times as precise as the thermocouple. The standard and test thermocouples were heated in a suitable comparator block in a calibrating furnace having close enough temperature control to keep the gradient between the thermocouple holes so low that it could not be measured.

Tube Shop

Production Report

25 Mica Window Tubes
27 Thin Wall Glass Tubes
3 Neutron Chambers (Type GL-617)

To date a total of three type GL-617 chambers have been reclaimed by cutting them open, cleaning the guard ring and insulating surfaces inside the case, resealing, evacuating, and refilling. On current leakage test their performance has compared well with that of new chambers, and they have been sent to 105-B to be checked under the operating unit.

DESIGN AND CONSTRUCTION (Reference Report No. HW-11435)

General

Design work for both the 100-H Area and 234-5 Building projects is essentially complete. One new man has been assigned to each project to keep the as-built drawings up to date.

J. M. Holeman made a trip to Seattle to witness a demonstration of television equipment developed by Remington-Rand primarily for viewing industrial processes. This is a portable unit which may have application in Redox and other processes.

Preliminary specifications for modification of instrumentation for a new pile area has been started. The program has not been completely detailed, merely roughed out. When details have been worked out and all problems to be investigated are known a schedule will be set up.

100-H Area

All design work completed and requisition for procurement of the Main Control Desk, and Panel was issued on 10-15-48.

Specification and requisition was also issued for the fabrication of thermocouples for process tube exit temperature monitoring.

A model of Work Area and Control Room of 105-H Building has been made up to study the best method of prefabrication of the pressure monitor tubing. This is much more complicated than DR Area due to relocation of the Control Room.

Follow up on construction activities in this entire area is being maintained to insure proper facilities are provided for installation of instrument equipment.

Instrument Division

DESIGN AND CONSTRUCTION (Reference Report No. HW-11435)

234-5 Building

All design work for Phase I of this project has been completed with the exception of review of ventilation control requisitions being prepared by Giffels and Vallet at Detroit. These are promised for delivery on 11/1/48.

Assembly equipment in the various instrument panels for this project is continuing at the Instrument Shop at White Bluffs. The following is the status of these panels:

a) Hoods 5, 6, 7 -- complete, tested, ready for installation.
b) Hood 10 -------- complete except for push button stations and alarm switches
c) Hoods 29,30 --- complete except for purge rotameter connections.
d) Hood 19 ------- complete except for volt and ammeter.
e) Hood 17 --------complete except for oxygen recorder.
f) Hood 14 ------- complete except for push button, volt and ammeter.
g) Hood 8 ------- 75% complete.

The balance have not been started.

Redox

Kellex design process instrument flow prints were submitted for the Test Plant. These are being reviewed and an instrument functional take-off made. This was reviewed with operating process and technical groups to be sure of proper interpretation of requirements. A review of the Kellex design prints will follow.

321 Building

The instrument installation work on the Horizontal Contactor Unit is essentially complete. The control valves have been packed and gasketed, and control lines and changeover valves installed. The effluent control systems have been completed and installed. Calibration and check of operation remains to be done.

The Scale-Up instrumentation was designed on the assumption that flow rates would be maintained for reasonably long periods. It now develops that frequent changes over a very wide range (30 to 1) are required. Tools have been made up and a system worked out to reduce orifice changes to a simple quick operation.

105-DR AREA

The installation of thermocouples inside the process unit was completed but due to stacking difficulties the greater number of these had to be removed and reinstalled. Reinstallation is now about complete. It was necessary to reroute the "S" couple leads because these were damaged in removal of the graphite thermocouples in layer 56. To effect the re-installation of the "S" couples holes were drilled through the side cast iron blocks and leads brought to the passage through the "B" block by laying these in the space between the graphite and cast iron blocks.

Building 190-D

Four of the pump discharges have been revised to supply either 105-D or 105-DR. Orifices were installed and meters returned to service without

DESIGN AND CONSTRUCTION (cont.)

Building 190-D (Cont.)

incidence.

The M panel board for control of the new pumps has been installed and regulator equipment set up ready for correction. This work is proceeding as fast as conditions permit.

MAINTENANCE DIVISION
OCTOBER, 1948

GENERAL:

A mechanic in the 300 Area received a fracture of the right ankle on January 28, 1948. The injured was hospitalized for surgery to his ankle on September 14, 1948. This injury was classified as a major injury on October 25, 1948

The construction of the 291 T and 291-B Sand Filters were completed. The 291 T filter started operation on October 15 and the 291-B filter on October 30, 1948.

Work was started during the month on installing the equipment for the "P-10" operation in Building 108-B.

ORGANIZATION AND PERSONNEL:

Employees on Roll	October
Beginning of Month	599
End of Month	603
Net increase	4

WORK ORDER SUMMARY:

Area	Backlog Mandays 11 1-48	Men on Roll	Backlog Days 11-1-48
100	3998	129	30.9
200	4116	149	27.6
300	2008	67	29.9
Minor Construction	22304	146	152.7
Totals	32426	491	66.0

The total backlog increased from 29874 to 32426 mandays during the month. The average number of days to complete all work increased from 59.1 to 66 days.

100 AREAS:

Process water tube #3169 was removed from the 105 B unit when a small pin hole leak was detected. A new tube of type 72S aluminum was installed.

The 10" fire and sanitary water main from 183-B Building broke approximately 30 feet west of the transportation garage and at the entrance to the bus and truck parking lot. One length of 10" Class D cast iron pipe and one 10" X 12" long sleeve was used in the repairs.

The 28 vertical safety rod thimbles in the 105 D pile had the contaminated dust cleaned out of the bottom ends. This was accomplished by using especially designed pipe, hose, filters, and separators with a standard industrial vacuum cleaner.

An automatic reversing gear type of oil pump was installed on #9 exhaust fan turbine in 105-D Building. This pump will supply oil to the turbine bearings regardless of the turbine rotation, and will prevent bearing failures.

The 105-F unit was shut down October 19, 1948 due to a leaking process tube #3169 This tube was replaced with a DR unit tube. This tube was later removed to boroscope the hole. At this time tubes #1579, 2002, 2666, 2682, 3069, and 3179 were removed and the holes were boroscoped and then replaced with DR unit tubes.

A ladder was installed in the 115-F Building tunnes for escape through #3 drier room, should the tunnel plug be installed while a person is in the tunnel

Nine barrels of Silica Gel (1080#) were added to each #1, #2, and #3 drying towers in the 115-F Building. This raised the Silica Gel layer thickness from 6' to 14". This was done to increase the drying capacity of the driers and speed up the removing of water from the 105 unit.

The capacity of #1 refrigeration compressor in the 146 Building was increased 25% by increasing the speed of operation. This also improved the overall cooling efficiency by 35%.

200 AREAS:

A new brake screw shaft was installed in the 75 ton crane for the ten ton hook. This was in compliance with Recommendation Report #100. Also, four one inch bolts, which had sheared off in the main girder, were replaced. One idler wheel and bearing which had failed, were replaced.

The installation of one inch stainless steel pipe line from B-4 tank to F-1 and from E-2 to B-4 tank in the 224-B Building was completed. A 10 GPM jet was also installed to give more efficient operation.

The brake screw shafts on the 30 ton cranes in all three 200-North Buildings were replaced as per Recommendation Report #100. Also the friction plates were machined and replaced on these cranes.

The 1½" Chapman #660 valve was revised so it had a GX plug on the stem, a GX backseat gasket and GX annular rings of packing. The valve

was installed in a line where it would be subjected to severe HF service. After twenty-seven days use the steel seat crystallized and fractured, thus permitting the valve to leak. Inspection revealed that the altered parts showed no appreciable wear so they were installed in another similar valve body and the test is being repeated.

The original plow and skimmer in the 18-2 centrifuge, Building 221-T, was replaced with a Holt reinforced skimmer. These new skimmers were pre-drilled on a mock-up jig. The assembly fit so well that very little calibrating and adjusting was required.

The replacement of brake screw shafts was completed in all canyon cranes, Building 221-T, in accordance with Recommendation Report #100.

Leaks in the bottom of tank H-304, Building 221-T, were repaired by welding. Close inspection revealed that this tank is badly eroded and will need additional repairs in the near future.

The installation of new 25-12 SCB piping was completed from E-2 centrifuge to B-4 tank, from B-2 centrifuge to F-1 tank and from F-1 tank to F-9 tank in the 224-T Building. This allowed by-pass transfers which did not formally exist.

Two sets of two skimmers each were installed in the standby building F cell centrifuges in the 224-T Building. The original skimmers were of the non-reinforced type and had previously been used as spares.

Ten broken steam hanger poles were replaced on the 8" steam supply main near the "T" Area. Double poles were installed at critical stress points.

Sixty-five oil drums were altered for use as scrap containers in the scrap salvage program. These will be used in all areas.

300 AREA:

Work is now in progress recovering the 17 wood hutments in the area with asbestos roofing compound.

In order to determine the feasibility of reducing the contamination in the air in the 314 Melt Plant by the installation of a suction fan on the furnaces, a temporary installation was made and data collected by the P" Division. A further installation will be made during the coming month to enable them to obtain additional data

A new top section for the Scale-Up 8" Column in the 321 Building was made and installed and ready for operation on November 1. This will enable them to collect additional necessary data for future construction requirements. In addition, many other experimental devices were fabricated for use in the Redox Program.

4 Maintenance Division

Changes in the 3706 Laboratory necessitated the removal of the equipment in rooms 7, 9, and 11 and 13 so that new laboratories could be installed. The vacuum lines in 3706, which were originally made of mild steel, are corroding enough so that flakes of rust are clogging the vacuum systems. A program of installing stainless steel piping has been started.

ELECTRICAL DIVISION

OCTOBER, 1948

GENERAL

Work Order Summary - Estimated Mandays:

Area	Work on Hand Sept. 30 Estimated Man Days	Work Completed to Oct. 31 Estimated Man Days	Work on Hand Oct. 31 Estimated Man Days
100-B	323.9	254.6	340.8
100-D	397.4	305.0	362.0
100-F	320.0	315.0	375.0
200-E	365.5	272.0	345.0
200-W	307.5	236.2	361.1
300	180.4	200.0	184.4
Telephone	1520.0	431.0	3384.0
Minor Const.	366.0	285.2	376.8
Distribution	3754.7	943.0	3262.0
Total	7535.4	3242.0	8991.1

The foregoing summary includes routine work as well as Project construction work and regular work orders. The increase of telephone backlog results from the addition of Project C-276 during the month (2000 mandays).

All work areas are now on five days per week schedule. Exceptions are Dispatchers and Substation Operators of the Distribution group, and the Telephone Section as necessary due to heavy work backlog and lack of skilled help in these categories.

The attached load chart for the peak day of the month, October 30, shows a peak of 58.9 MW for the entire project with coincidental 66 KV demand of 22.0 M.W. The non-coincidental 66 KV peak was 22.5 M.W. This compares to 45.0 M.W. and 16.0 M.W., respectively, for October, 1947 and reflects not only seasonal factors but also expected increase of both plant and village demand.

Under Project C-177 (new 115 KV system), Subcontractors continue work on transmission line and village substations. It is now anticipated that the Electrical Division will start electrical work within the stations toward the middle of November. Energization date for the transmission line has been established for December 21; north substation date is dependent on construction program and may be early January.

Principal work of the Electrical Standards Committee during the month has been the establishment of grounding materials standards. The Electrical Division is now developing ground test schedules and procedures. Standards and standard drawings adopted during the last few months are now being issued.

Discussions took place with the Design and Construction Divisions relative to emergency power supply to the Redox test plant.

Electrical Division

A request for project was made for the consolidation of all Osmose treatment and pole replacement programs for all areas into one general project.

A code has been established (390-127) for area shift costs to be split at month end in accordance with actual work distribution.

Because of another pole top fire as reported last month, and based on further studies, a work order has been issued to bond all dead end and three pole structure hardware, 220 KV system, as a preventive measure.

The nine point program was discussed individually with all supervision, and the program is well under way within the division.

ORGANIZATION AND PERSONNEL

In October there were four terminations, comprising three Substation Operators and one Minor Construction Foreman, Mr. R. E. Wood. He resigned to enter into a private business, and will not be replaced at this time.

There were seven new hires during the month, including one Electrician A, one Electrician B, one Telephone Serviceman C, one Utility Man, and three Helpers.

	October	
Number of employees on payroll:	Exempt	Non-Exempt
Beginning of month	46	224
End of month	46	227
Net increase		3

AREA ACTIVITIES

1. 100 Areas

A. General

An area wide blackout test was conducted on October 27 during the 12-8 a.m. shift. Results in the 100 Areas were quite satisfactory. Some difficulty was encountered by the "P" Division in extinguishing the lights in the 107 Retention Basin Inlet houses, particularly in the 100-F Area where the area is a special hazard zone. These lights will be connected to the street lighting circuit to facilitate future blackouts.

B. 100-B Area

105 Pile Building

The conduit and wiring installation for the 14 strain gauges on the pile unit was completed.

The "dummy" elevator portable control station was moved to a permanent location on the south wall of the wash pad and an additional control station was installed on the south end of the elevator structure.

Various tests were made on the D.C. drive on No. 4 horizontal shim rod. Oscillographs were made of the emergency drive motor current with a 60 cycle reference voltage to check time required for operation. A complete report is to be issued by the Design Division.

C. 100-D Area

Eighteen fluorescent light fixtures were installed in the Technical Division Laboratory in Building 185.

Considerable trouble is being experienced with the twisted pair cable on the area public address system. A complete inspection is being made and the results of this inspection will determine the advisability of replacing the entire cable.

105 Pile Building

Work was continued on the installation of conduit and wiring for the strain gauges on top of the unit. The work is about 75 percent complete.

Work was started on a conduit run from the far side "0" level to the top of the unit for a motion recorder instrument.

100-DR Area

In continuation of previous month's report, a large proportion of time is being utilized for requirements of 100-DR construction program. The following specific items were of interest.

(a) The final tie-in of the switchgear for filter supply pump motor No. 9 in the 182 Reservoir Building was completed. The equipment is now awaiting acceptance tests.

(b) All work in the Process Water Building 190 is complete except the actual tie-ins which cannot be made until the extended shut-down which will be made for this purpose.

(c) Work in the 115 Building is complete except for about 10 feet between our installation and the construction junction box on the south side of the barrier wall in the 115 tunnel.

An Electrical Foreman has been assigned to 105-DR and associate building to act as Electrical Division representative and to assist in inspection and testing as necessary.

D. 100-F Area

On October 15 at 6:55 p.m., 800 h.p. process pump motor No. 8 in the 190 Building burned out on start up. This failure was similar in all respects to the previous failures except that it failed in the pole phase group at the top of the stator rather than the upper left hand quadrant. The motor was rewound in the 100-D Area shop and was returned to the 100-F Area for installation on October 29.

Process pump motor No. 10 in the 190 Process Water Building developed an unusual amount of vibration. Bearings were checked and found to be in

excellent condition so the unit was turned over to the Maintenance Division for realignment. Work has not been completed.

Temporary rectifiers on vertical safety rod clutches were replaced with permanent units in the 105 Pile Building.

2. 200 Areas

A. General

There was a practice blackout at approximately 5:15 a.m. on October 27, 1948. The most effective means of blacking out the North areas and the surrounding territory is to open C8-X5 oil circuit breaker in the A-8 substation as outlined in the blackout procedure. To avoid a process power interruption in the 200-E Area, bus tie breaker E8-X55 in the C8-S3 substation had been closed. During the practice blackout, the bus-tie breaker E8-X55 tripped open interrupting the process power to half of the 200-E Area. The breaker was reclosed immediately with no result in damage. The trouble was attributed to a faulty operation of the latching arrangement of the mechanically operated breaker.

With respect to stainless steel corrosion studies, final test data have been taken and report is essentially complete.

B. 200-E Area

A 10 KVA transformer was installed near the 241-BX Tank Farm to supply flood lights for the 241-BY Tank Farm construction. This transformer was connected to the E8-L53 feeder.

A 15 KVA transformer was installed to supply power to the 241 BY Tank Farm Construction Badge House. This transformer was connected to the fence lighting primary circuit.

The generator breaker on the MG charging panel in the 284 Building had to be repaired. The main contacts failed to properly clear which allowed the battery to motorize the generator. The generator failed to build up charge and the indicating lights did not indicate properly. A support bolt i the mechanism had come loose and prevented operation of the main contacts and the auxiliary contacts. This was repaired and returned to service.

On October 4, the right hand optical unit on the 221 Canyon Building crane failed in its operation. The unit rotated to its full extent and the gears jammed, which caused the Selsyn motor to fail. The new Selsyn motor was installed and the crane returned to service.

On October 25, the No. 2 pump motor in the 200-R Area tripped off the line. Investigation showed that one of the 2300 volt lead wires had slipped out of its kearney connector and had caused the motor to single phase. This was repaired and the other two kearney connectors were also tightened. This repair work entailed a complete outage on the 200-R Area from 12:30 to 1:15 p.m. on the above date.

Eighteen motors were repaired in the 200-E Area Electrical Shop during the month.

Electrical Division

Under Project C-106, the sand filter installation is electrically 95 percent complete. The filter was put in service on October 30, 1948. The electrical work remaining to be done is the installation of thermostats and heater for the water warmers, and the dismantling of temporary services used in the construction of this building.

C. 200-W Area

Project C-105, Installation of Sand Filter in 291-T Building, is 90 percent complete. The filter was put in operation on October 15. Electrical work remaining to be completed is the installation of a thermostat for the water warmers, establishing service to the Guard Tower, the relocation of three fence light poles, and the removal of the services to the construction buildings.

Balance of work in this area comprised normal maintenance and minor repairs.

3. 300 Area

The tendency of the generators which supply power to the induction furnaces (314 Melt Plant Building) to hunt has made it impossible to set the generator overload relays at a value to afford proper protection for the generators. The effect of the hunting on the relays is transient and of short duration. A capacitor was connected across the overload coils which has now permitted making the proper overload setting.

A single phase condition developed at 8:30 a.m. on October 4 on feeder L-1 from the 351-A Substation. This feeder supplies lighting to all buildings in the south end of the area. The breaker was opened and immediately reclosed at 9:30 a.m. which restored the feeder to normal.

Inspection and repairs are to be made at a later date when outage can be arranged for.

All project minor construction work in this area is proceeding according to schedule.

4. Distribution and Transmission

Escort duties for movement of construction equipment and protection of overhead lines as well as personnel continues heavy in Richland and vicinity.

The following work was done on pole treatment and replacement program during the month:

	Inspected	Condemned	Treated	Replaced
200-E Area				29
Inter Area	428	52	374	

Thirty-six transformers were cleaned and tested during the month.

The following radio equipment was serviced during the month:

1198848

Electrical Division

Mobile units serviced	122
Mobile units overhauled	25
Stationary units serviced	8
Stationary units overhauled	4
Mobile units removed	8
Mobile units installed	12

Line work in Richland continues at a high rate as associated with the expansion program in the Village.

Two full time line crews are assigned to re-routing and rebuilding 7.2 KV lines in Richland for tie to new 115 KV stations, Project C-177. This work is now estimated at 35 percent complete.

A new transformer bank for increased light and cooking load at the Desert Inn was completed ready to cut in service.

A 7.2 KV line from Station B1-S1 along Kuhn Street to Wright Avenue was constructed to provide service to the "F" Housing Area. This work required re-routing of other circuits and dismantling fifteen spans of old line.

Primary service to the new transformer vault at the Columbia High School was connected. The old transformer bank consisting of three KVA transformers was disconnected and dismantled.

Upon completion by Construction of the 7.2 KV line west on Van Giesen, this line was energized and all load formerly fed on line L-13 was cut over to the new section of line L-12. This included the Batch Plant located south of bypass highway.

Due to an overload condition on circuit D1-L1 during temporary construction work, which will provide adequate service to this line, several outages occurred on the night of October 21. Fuses were replaced with 200 amps and service was restored to normal at 6:36 p.m.

Work of placing the control house and control cables at the Hanford Substation in a semi-permanent condition is approximately 75 percent complete.

Power Supply Interruptions

Date	Area	Volt.	Circuit Affected	Duration	Remarks
There were no unscheduled interruptions during the month on the 230 KV system.					
			66 KV		
Oct. 4	300	6.9	No's. 3 and 4 wells	1 hr. 59 Min.	Fuse blown
Oct. 21	Richland	6.9	D1-L1 from new disconnects to D1-LX29	49 min.	Blown fuse
Oct. 21	Richland	6.9	" " "	19 min.	Blown fuse
Oct. 25	Richland	6.9	All street lights	55 min.	Clock stopped

5. Telephone Section

The second group of 300 lines was placed in service in the North Richland exchange on October 31, 1948.

A plan has been developed to install a third position in the White Bluffs exchange.

The 13 and 27 quad Richland to "BY" trunk cables were transferred to the underground cable on George Washington Way. This will permit removal of the overhead Richland to "BY" trunk cables from Williams Boulevard to Van Giesen west of George Washington Way.

Project C-276, Overall Telephone Project, wa released and work is underway on various cable installations in Richland and vicinity.

The temporary rubber covered telephone cable (underground) serving the "A" Housing Area was broken twice by Construction personnel. This area is now being served through the permanent underground cable on George Washington Way.

Fifteen Hundred dials were installed on manual instruments and 275 of these instruments were installed in residences.

The following telephones were moved during the month:

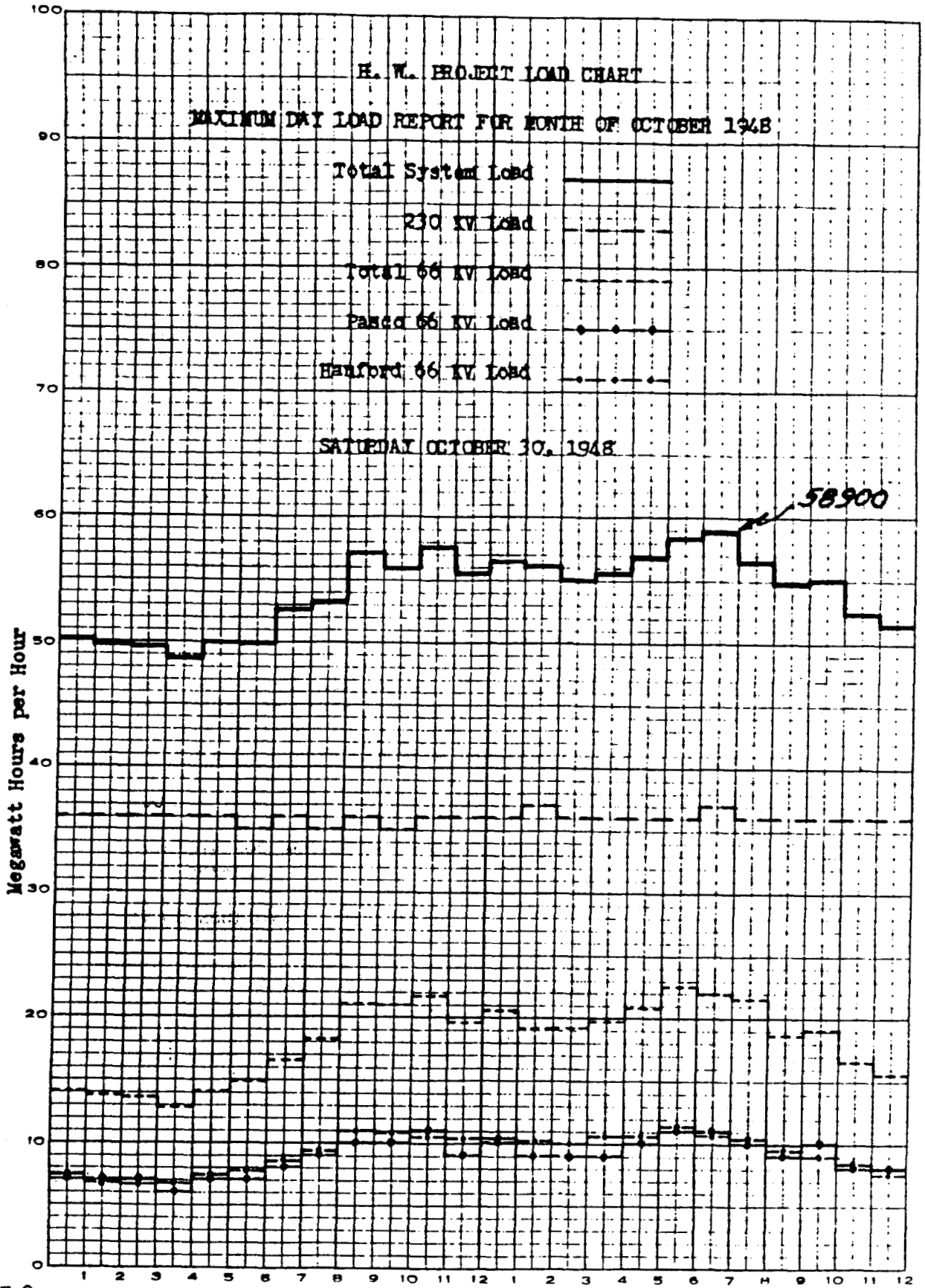
Area	Installed	Removed
All work areas (active)	42	28
Richland	257	232
North Richland	118	109
White Bluffs, Hanford and 100-H	59	22
	476	389

POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING OCTOBER 31, 1948

ITEM	ENERGY - MW HRS. Sept.	ENERGY - MW HRS. Oct.	MAX. DEMAND - KW Sept.	MAX. DEMAND - KW Oct.	LOAD FACTOR - % Sept.	LOAD FACTOR - % Oct.
230 KV SYSTEM						
A-2 Out (100-B)	6,590	7,390	11,100	11,200	82.5	88.7
A-4 Out (100-D)	7,580	7,530	13,000	12,800	81.0	79.1
A-6 Out (100-F)	5,880	6,440	11,400	11,300	71.6	76.6
A-8 Out (200 Areas)	1,890	2,150	3,300	3,700	79.5	78.1
TOTAL OUT	21,940	23,510	38,800**	39,000**	-	-
MIDWAY IN	22,261	23,816	36,000*	36,800*	85.9	87.0
Transm. Loss	321	306				
Per Cent Loss	1.4	1.3				
66 KV SYSTEM						
B1-S1 Out (Richland)	2,291	3,414	6,300	9,700	50.5	47.3
B1-S3 Out "	1,580	2,117	4,500	5,100	48.8	55.8
B1-S2 Out "	1,987	1,882	4,161	4,335	66.3	58.4
B3-S4 Out (300 Area)	182	206	420	456	60.2	60.7
B3-S5 Out "	588	606	1,320	1,220	61.9	66.8
B1-S4 Out (North Richland)	1,776	2,074	3,514	4,204	70.2	66.3
B7-S10 Out (White Bluffs)	393	411	1,102	1,080	49.5	51.1
B9-S11 Out (100-H)	72	211	640	640	15.6	44.3
Hanford Out	302	334	500	500	83.9	89.8
TOTAL OUT	9,171	11,255	22,457**	27,235**	-	-
Hanford In	5,220	6,019	19,600*	12,000*	37.0	67.4
Pasco In	4,254	5,458	15,200*	12,600*	38.9	58.2
TOTAL IN	9,474	11,477	34,800**	24,600**	37.8	62.7
Transm. Loss	303	222				
Per Cent Loss	3.2	1.9				
PROJECT TOTAL						
230 KV (Item 5)	21,940	23,510	38,800**	39,000**	-	-
66 KV (Item 15)	9,171	11,255	22,457**	27,235**	-	-
TOTAL OUT	31,111	34,765	61,257**	66,235**	-	-
230 KV (Item 6)	22,261	23,816	36,000*	36,800*	85.9	87.0
66 KV (Item 18)	9,474	11,477	34,800**	24,600**	37.8	62.7
TOTAL IN	31,735	35,293	55,300	58,900	79.7	80.5
Transm. Loss	624	528				
Per Cent Loss	2.0	1.5				

* Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System—98.5
Average Power Factor - 66 KV System—95.2



TRANSPORTATION DIVISION

MONTHLY REPORT

OCTOBER 1948

GENERAL

Absenteeism in the Transportation Division for the month of October was 1.84% which is an increase of .03% over September.

ORGANIZATION AND PERSONNEL

Nine Point Better Job Program interviews were held with all Transportation exempt personnel during the month.

Force of the Transportation Division for October was as follows:

Number of employees on payroll		
First of month		738
End of month		739
Net increase		1
New hires	9	
Transferred from other Divisions	3	
Returned to work	1	
Total	13	
Terminated	9	
Transferred to other Division	1	
Removed from Payroll	2	
	12	
Net increase	1	

Total force of Morrison-Knudsen, Track Maintenance Subcontractor, as of October 31 was 282 which is an increase of 33 over September.

OPERATIONAL ACTIVITIES

1. Railroad Operations

Railroad operations continued in a routine manner with train movements being effected as scheduled. There were 4,478 cars handled compared with 5,271 in September. This difference of 793 cars resulted from a substantial decrease in commercial tonnage. Process movements increased somewhat as the 100-B Area is now on a regular schedule. Frequently it has been necessary to handle movements from three Areas on the same day.

Non-routine work consisted of work train service for the movement of aggregate from White Bluffs to the 241-BY Area in 200-East and the 234-5 Area in 200-West. Work train service was also provided for the bank widening project between May Junction and North Richland.

2. Railroad Repairs

Repairs on Baldwin Locomotive 39-3724 are 90% complete. This unit was taken out of service last month for repairs to the traction motors and replacement of wheels.

Alco Locomotive 39-3729, which was damaged in a crossing accident, has been repaired and returned to service.

Installation of steam pumps and steam lines for use in heating engines is complete except for small amount of lagging on the steam line.

3. Railroad Track Maintenance

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. General

Replaced broken rail on Asphalt Spur; cut and replaced track on Hudson Spur for pipe line construction; unloaded five cars of cross ties, two cars of switch ties, and one car of tie plates.

b. 100-B Area

Removed derail and unused turnout on coal track. Installed permanent crossing on main lead. Replaced ten defective rails and 180 ties.

c. 200-West Area

Replaced ties on 221-T lead and repaired 234-5 track.

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

1) Constructed grade, installed temporary turnout and completed laying 90% of the track for a temporary spur to the 241-BY Area in 200-East.

2) Project C-185 (Richland By-Pass) Completed ballast unloading, track lining and dressing. Salvaged used materials from a point 600 feet west of Lee Boulevard to the old track junction by the Airport.

3) Project C-214 (Rehabilitation of Plant Railroads) Installed six permanent crossings and renewed 16,000 ties.

AUTOMOTIVE OPERATIONS AND REPAIRS

1. Automotive Operations

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

Fifty-nine of the new GMC suburban type coaches have been placed in operation replacing all of the K-7 International busses in Area service. The Driver Training Program continued throughout the month with very satisfactory results as virtually all of our Bus Drivers have completed their preliminary training and received qualifying certificates.

Effective October 25, 1948 special bus service was established to and from all Areas for Patrol personnel. This service is in effect on all three shifts seven days a week. One bus is dispatched to each of the Areas 24 minutes before the regular "to work" schedule and from each of the Areas 12 minutes after the regular "to Richland" schedule.

b. The extent of Area bus traffic is indicated by the monthly total passenger count of 126,991 and the extent of Village Local bus traffic is indicated by the monthly total passenger count of 64,448.

c. The extent of automotive equipment usage is indicated by the monthly total mileage of 1,385,340.

[redacted]

LABOR SECTION ACTIVITIES

1. Roads and Streets

Graded and stabilized approximately one and one-half miles of road at Midway. This job required the hauling of 500 cubic yards of ballast and 733 cubic yards of 3/4 minus.

Crushed and stockpiled 1,700 cubic yards of road aggregate.

Approximately 750 man-hours were expended in hauling materials for 200-East Sand Filter and construction of 300 Area Retention Basin.

2. Areas

Work in the Areas of a non-routine type was as follows:

a. 100-B

Suspense Code 10240 (Alterations to 108 Building) Excavated 250 cubic yards of earth for crib and sewer; backfilled 40 cubic yards from a spoil pile; expended 66 man-hours in mixing mortar and setting bricks in the 108 Building.

b. 100-D

Project C-238 (Effluent Sewer Line 105-F to 107-F) Expended 250 man-hours in hand excavation, concrete and steel placement, and hauling material for the 105-D West Gate Box. Backfilling on the 105-DR Effluent Line required 84 man-hours.

c. 100-F

Project C-238 (Effluent Sewer Line 105-F to 107-F) Backfilled 3,500 cubic yards of earth on the 107 Effluent Line and cleaned up 1,250 cubic yards of excess earth from a spoil pile.

Project C-269 (Radio-Botany Laboratory) Excavated 35 cubic yards and placed one and one-fourth cubic yards of concrete for a cess pool.

d. 200-East

Suspense Code 10225. Backfilled 480 cubic yards of earth, placed 1,100 cubic yards of concrete, and expended 2,700 man-hours in handling materials and excavation work for the 291-B Sand Filter Building construction.

Project C-133 (Special Test Wells) Wells 62.5-90, 34-88.5, 25-80 and 34-51.5 were started in September and have present depths of 163, 337, 323 and 302 feet respectively. Well 55-88.5 was started during the month and has a present depth of 62 feet. Footage on all wells drilled to date totals 15,108.

e. 200-West

Suspense Code 10225. Backfilled 800 cubic yards of earth and placed 63 cubic yards of concrete. Expended approximately 1,000 man-hours in hand excavation work, handling and placement of materials and form work for the 291-T Sand Filter Building construction.

Project C-163 (Additional Waste Storage) Excavated 800 cubic yards of earth for seven line encasements, backfilled 450 cubic yards of earth for 221-U Catch Tanks and seven line encasements, and placed 45 cubic yards of concrete for seven line encasements.

f. 300 Area

Project C-104 (3707-C Building) Expended 516 man-hours on excavations, backfillings, concrete placements, fence work and general cleanup.

Project C-220 (3708 Building) Expended 290 man-hours on excavations, material handling, assisting carpenters and general cleanup.

Project C-227 (3706 Building) Expended 80 man-hours on sewer line work, grading and general cleanup.

Work Orders E-39774 and E-39776. Placed 154 cubic yards of concrete slab for the 303, 303-E and 303-D Buildings.

Suspense Code 10242 (Auxiliary Waste Disposal Pond) Well 303-1 was started during the month and has a present depth of 35 feet. Footage on all wells drilled to date totals 35. Approximately 350 man-hours were expended on excavation work for the new retention basin.

g. 700-1100

Approximately 200 man-hours were expended on concrete work for the Lutheran Church.

EQUIPMENT CONTROL SECTION ACTIVITIES

Thirteen miscellaneous vehicles were transferred to the Design and Construction Divisions on P.I.T.'s making a total of 555 vehicles transferred to date.

Two Motor Cranes and 16 Pontiac Station Wagons were transferred from the Design and Construction Division to Operations.

Effective October 1, 1948 a Reserve Pool of Automotive Equipment was established at the 1131 Garage. The purpose of this pool is to have equipment available when it is needed. When the equipment is not in use it must be returned to the pool thereby more people have access to equipment which is to be primarily used for emergency or above normal needs. This equipment can be withdrawn for a period of one to five days by presenting a Reserve Pool Equipment Order (HW 6.447) authorized by the Division Superintendent or Assistant Superintendent for sedans and a Chief Supervisor for all other types of vehicles.

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TRAFFIC SECTION

1. In line with our request of August 30, 1948, the Milwaukee Road has published a rate of $.30 per cwt. on Poles from Plummer, Idaho to Hanford, Washington to become effective November 3, 1948. This is the rate presently applicable between Spokane and Hanford and will provide savings of $.04 per cwt. or approximately $32.00 per car.

2. As a result of our proposal of March 12, 1948 to the transcontinental railroads to reduce their rates to meet inter-coastal water competition the carriers have established a rate of $1.23 per cwt. from Baltimore, Maryland to Hanford and Pasco, Washington on Ammonium Silicofluoride to become effective November 15, 1948. This will result in a savings of $.91 per cwt. or $455.00 per car, but all rail rates will still be approximately $.45 per cwt. or $225.00 per car higher than water-truck or water-rail shipments.

3. As a result of our request of February 13, 1948 for a reduced rate on Sodium Nitrite from Gibbstown, New Jersey and/or Solvay, New York to Hanford, the transcontinental carriers have approved a rate of $1.43 per cwt. minimum weight 60,000 pounds, to become effective November 15. This will provide savings of $.61 per cwt. or approximately $366.00 per car.

4. As a result of our request of October 12, 1948 the Milwaukee Road has reduced their rate on Sheet Steel from Hanford to Seattle to $.25 per cwt. minimum 40,000 pounds, effective October 20, 1948. This will provide savings of $.17 per cwt. or approximately $68.00 per car.

5. As a result of rate reductions secured from the carriers, there was a total savings in freight charges for the month of October amounting to $100,115.78.

PROJECT ENGINEERING DIVISION

MONTHLY REPORT

October 1948

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	15	8-19-47	486,000
C-184	Experimental Animal Farm - Part I (Part II Awaiting Auth. for Additional $507,000)	0	10-27-47	286,000
C-222	Dismantling Unoperated Equipment in 105 Valve Pits	18	2-10-48	4,000
C-238	Effluent Sewer Line 105-F to 107-F	90	3-26-48	207,000
C-269	Temporary Radio Biological Lab. 100-F Area	0	7-28-48	10,100
C-290	Fabricate & Install Spectrometer	0	9-29-48	9,000
SC 10239	Segmental Discharge Devices (to Model II)	30	9-1-48	30,000
SC 10240	Special Technical Laboratory (P-10)	10	9-22-48	215,000*
TOTAL Estimated Cost 100 Area Projects				$1,247,100

200 AREAS

C-133	Special Test Wells 200-E and W	97	1-30-47	180,600
C-163	Additional Waste Storage & Tie Lines 200-W (G.E. Portion Only - Subcontract not Included)	72	7-25-47	600,000
C-171	Alterations to Six Periscope Assemblies	83	8-6-47	7,200
C-262	Bismuth Subnitrate Preparation Fac.	99	7-13-48	23,000
C-273	Water Supply & Plumbing-Bldg. 622-A	0	8-4-48	13,500
SC 10155	Physical Testing Equipment	65	9-1-47	17,600*

* High Spot Estimate

Project Engineering Division

Projects, Suspense Codes Authorized and Under Construction (cont.)

Project Number		% Phys. Complete	Date Auth.	Est. Cost.
SC 10225	Stack Filtration Facilities	65	11-28-47	840,000*
TOTAL Estimated Cost 200 Area Projects				$1,681,900
	300 AREA			
C-189	Building 3745-A X-Ray Facility Part I. (Part II Awaiting Auth. for Additional $11,000)	91	8-20-47	22,000
C-219	Construction of Additional H.I. Instruments	38	1-27-48	97,200
C-220	Optical Instrument Bldg. and Elect. Shop 3708 - 300 Area	65	1-30-48	82,000
C-227	Conversion of Offices to Labs. - Bldg. 3706 & Construction of 3707-C Change House	50	3-15-48	429,000
C-237	Nine Tube Mock-Up Bldg. & Equipment	38	4-12-48	106,000
SC 10242	Process Sewer Effluent Pond - 300 Area	25	10-13-48	30,000*
SC 10241	Additional Ventilation Bldg. 314		9-24-48	200,000*
TOTAL Estimated Cost 300 Area Projects				$966,200
	GENERAL PLANT AREAS			
C-138	Richland Telephone Exchange - Bldg. 702	42	5-12-47	470,500
C-144	Additional Telephone Cables - Rich.	20	5-12-47	45,000
C-148	Combined Maintenance Shops	100	6-4-47	188,000
C-177	115 KV Power Transmission Line	49	8-14-47	1,167,000
C-195	Radio Communications for Railroad & Electrical Division	83	10-15-47	34,000
C-196	Electrical Distribution Headquarters Bldg. & Conversion of 2713-E to Garage	1	10-10-47	162,400

* High spot Estimate

Project Engineering Division

Projects, Suspense Codes Authorized and under Construction (cont.)

Project Number			% Phys. Complete	Date Auth.	Est. Cost.
C-214		Rehabilitation of Plant Railroad	46	2-18-48	3,214,000
C-245		Remodeling of Tract House L-859	100	4-15-48	7,000
C-256		Seal Coating of 36 Miles of Plant Highway	100	5-18-48	75,000
C-265		Additional Telephone Cable - Richland to Kennewick	30	7-29-48	30,000
C-276		Overall Plant Telephone Project	25	10-6-48	1,232,000
C-279		Improvements to Area Administration Bldgs.	0	8-20-48	98,200
TOTAL Estimated Cost Plant General					$6,723,100
GRAND TOTAL Est. Cost Authorized Work - All Areas					$10,618,300

Projects Being Routed for Authorization

941	(C-184) Part II	Experimental Animal Farm	507,000
A-464		Metering of Power - Process Areas	18,800
A-502	(C-284)	Transportation Consolidation	1,947,000
A-507		Workshop Addition to Bldg. 303-C for 300 Area Plant Assistance Group	57,000
1060		Revised Pile Shielding - Front Face Shield Nozzle Caps	88,000
2343	(C-298)	Decontamination Stations 221 T-B	33,000
2414		Waste Segregation Facilities 231-W	6,200
3060		Experimental Metallurgy Laboratory (Bldg. 3730)	140,000
3019	(C-189)	Building 3745-A X-Ray Facilities - Part II	11,000
TOTAL Estimated Cost of Projects Awaiting Authorization			$2,808,000

PROJECT ENGINEERING - AREA REPORTS

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

100 AREAS

E. R. No.		% Engineering Complete
A-1004	Downcomer Design 105-F	20
A-1034	Alterations to Bldgs. 186 and 185	17
A-1044	Outlet Charging Device (through proposed Model III)	30
A-1051	Remove Equip. in Valve Pits - Bldgs. 105-B & F	52
A-1054	Design Roller Flanging Device for Van Stone Joints	50
A-1055	Design and Estimate a Radiation Shield for Top Far Side of 105-D and F	90
A-1057	Prepare Project for Earth Crib 100-B & F	90
A-1059	Prepare Project for Steel Sewer Line at 100-B Area	20
A-1060	Increased Shielding Front Nozzle Caps	85
A-1061	Estimate Cost of Slack Cable Limit Switches	90
A-1062	Prepare Project for Mark II and Mark III Machines for Segmented Discharge	80
A-1063	Special Metal Splines	20
A-1064	Equipment Designs for Oxygen in Pile Atmosphere	10
A-1065	Equipment Designs for Large Scale CO_2 Evaporator	20
A-1066	Mock-Up Facilities for Metallurgical Studies	40
A-1067	Special Technical Laboratory (P-10)	30

200 AREAS

2277	Revise Cell Piping per Marked Prints	90
2279	Prepare Project for Regasketing Facilities 221-T & B	80
2285	"B" Jet Assembly	75
2287	Study Rail Alignment of 200-N Cranes	70
2288	Special Test Wells 200-E & W. 70 Wells Complete	89

Project Engineering Division

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

E. R. No.		% Engineering Complete
2309	Water Supply & Plumbing - 622 Building	95
2326	Mark Grade on Steam Line Supports - 200-W	10
2327	Study Possibility & Redesigning Connector Head to Simplify Gasket Changing	90
2353	Crane Alignment & Rail Elevation- 221-T	70
2355	TX Waste Storage (Field Engr. for Proj. C-163)	75
2368	Study & Recommend a Means of Preventing Steam Cell Piping from Creeping Through a Concrete Wall	100
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	95
2376	Cathodic Protection to Underground Waste Lines (Survey Work and As-Built Drawings)	95
2381	Design Acid Supply Tanks & Piping for 222-B	80
2385	Steel Stack Handling Equipment - 272-E & W	80
2393	Steam Jet with Remotely Removable Features	0
2400	Maintenance Hoist for Cranes 211 T-U-B	90
2401	Maintenance Hoist for Cranes 212 N-P-R	5
2403	Revision of 222 T & B Control Labs.	20
2417	Location Determination for Zone Signs & Directional Markers over BX Lines	75
2421	Procure & Install Lab. Equip. in 271 T-U-B Control Labs.	5
2422	Clothing Change House with Monitoring Facilities at 221 T & B	95
2423	Investigate Settling of Caustic Tanks & Recommend Remedy. (211-T Pump Relocated and Leaks Diverted to Sewer)	100
2425	Utilization of Tanks 241-U-107, 108 & 109 for Metal Waste	100

Project Engineering Division

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

E. R. No.		% Engineering Complete
2432	Identification of Stainless Steel Articles	100
2434	Prepare Project to Cover Mock-Up Facilities for Metallurgical Studies 200-N Area. Changed to 111-B Building	60
2435	Design Waste Disposal Sumps 222-B	5
2436	Study Ventilation & Cooling System 221-T Gallery for Improvement of Present Facilities	100
2437	Prepare Project for the Study of Process Waste Separation 200-B-T-U	3
2438	Design and Estimate Improved Well Sampling Device	25
2441	Air Sample Piping from Top of Stack - 291 T B	100
2442	Recommend Remedies for Agitator Tank Bearing Failures to Philadelphia Gear Works	25
2443	Design Piping for Parallel Operation of Cells in 221 T & B	60
2444	Design Method of Storing 42 instead of 30 Buckets per Row in 212 N P R	10
2445	Design and Estimate a Dark Room for 222-B	100
2446	Make a Composite Map of 200-W Area with H.I. Features	75
2447	Sample Container 231 Building	0
	300 AREA	
A-3057	Design Cooling Coil for Bldg. 313 Chip Recovery Press	70
A-3058	Study & Recommend Design Changes for Air Conditioning System - Bldg. 321	80
A-3059	Evaluate Construction of "P" Div. Change House in the 303 Area	60
A-3060	Temporary Metal Melting and Fabrication Bldg.	65
A-3061	Increased Ventilation - 313 and 314 Bldgs.	15
A-3062	Installation of Rolling Mill in Bldg. 314	5

Project Engineering Division

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

E. R. No.		% Engineering Complete
A-3063	Evaluate CO_2 System for Rooms 4A and 6 - Bldg. 3706	75
A-3064	Study Backfiring of Stokes Pumps	20
A-3065	Process Sewer Effluent Pond	70
A-3066	Revise Maps - 300 Area Water & Sewer Systems	0
A-3067	Billet Lifting Tongs	0
A-3068	Automatic CO_2 Fire Extinguishers - Bldg. 3706	0
A-3069	Solvents Storage - 3706 Bldg.	0
	GENERAL PLANT AREAS	
828	Bldg. 702 - Automatic Dial Exchange	97
872-R	Improvement to Area Administration Bldgs.	40
912-R	Acid Storage & Handling Facilities - 706 Bldg.	100
941	Designs for Experimental Animal Farm - Project C-184	90
962	Designs for 115 KV Power Line through Richland	75
972	Survey of Effluent Lines 100 B, D & F Areas	80
973	Designs & Engr. for Elec. Dist. Hdqts. Bldg. near 251 Substation & Conversion of Bldg. 2713-E to Garage. Project C-196	75
990-R	Fencing All Areas	50
997	Deodorizer for Building 705	100
A-401	Telephone Cable Layout - Bldg. 720	20
A-409	Telephone Cable Layout for Bldgs. 703, 705, 760 & 770	0
A-420	Engineering Work for Rehabilitation of Plant Railroad. Project C-214.	75
A-445	Electrical Design for Bldg. 3706, 3703 and 3707	90
A-452	Prepare Project for Expansion of Main Plant Telephone System (Design Work Only)	60
A-463	Electrical Drawings for Charging Device	45

Project Engineering Division

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

E. R. No.		% Engineering Complete
A-464-R	Metering of Power - All Process Areas	20
A-489	Study Road Improvement Between Midway and Priest Rapids	75
A-492	Preparation of Project Additional Telephone Cable Richland to Kennewick (Design work only)	85
A-496	Design Work for Temporary Biological Laboratory Facilities - 100-F Area (Project C-296)	95
A-498-R	Prepare Project for Addition to Fire Station 200-W Area	20
A-499	Lighting Study - Rooms 2240-1-2-3, 703 Bldg.	30
A-501	Ice Flaking Machine Installation - Hospital	100
A-502	Prepare Project for Transportation Consolidation	5
A-505	Electrical Standards	15
A-506	Project for Hanford High School Conversion	30
A-507	Project for Workshop Addition to 313 Building	30
A-509	Drafting for 300 Area Planning Committee	50
A-510	Prepare Project for Badge House Addition - 300 Area	0
A-511	Prepare Project for Butt Treatment of Power Line Poles	50
A-512	Acreage Computations of Land Bordering Irrigation Ditch	100
A-513	Study of Air Conditioning First Aid Bldgs. - 300 and 100-B & F Areas	20
A-514	Prepare Project for Improvement to Area Fence Lighting	0

ENGINEERING STUDIES GROUP REPORT

Studies Completed This Month

E. R. No.		Date Completed
4341	Transportation Consolidation	9-20

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Project Engineering Division

ENGINEERING STUDIES GROUP REPORT (Cont.)

Studies Added This Month

E. R. No.		Date Completed
4352	Lubrication Specification 105 DR	10-13
4353	Telephone Cost Analysis	10-15

ACTIVE STUDIES

E. R. No.		% Complete
A-489-S	Improved Midway - Priest Rapids Road	80
4318	Packing & Gasket Standards	40
4326	Use of Inhibited Turbine Oil	85
4327	Maintenance of Pitched Roofs	40
4336	Review Oil Coding System	5
4339	Standard Sign Catalog	98
4342	Analysis of Heavy Duty Lacquers	60
4343	Forced Draft Fan J. I.	95
4344	Operating Standards for Hydrocrane	50
4345	Automatic Machining Equipment for Bldg. 313	95
4346	Welding Line Analysis	80
4347	Frost Test Line	80
4348	Soft Water System - Kadlec Hospital	60
4349	Pistol Range Sanitary System	90
4350	Inspection and Care of Wire Rope	95
4351	Asbestos Shakes vs Painted Siding	90
4352	Lubrication Specs. - 105 DR	20
4353	Telephone Cost Analysis	55

BACKLOG SUMMARY

	Work on Hand 9-30 Estimated Man Days	Work on Hand 10-31 Estimated Man Days
Studies	294	185
Project & Design	8,990	8,096
TOTAL	9,284	8,281

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80

TECHNICAL DIVISIONS

OCTOBER 1948

SUMMARY

Pile Technology Division

Alpha-rolled, lead-dipped slugs continue to show variable dimensional changes during irradiation, and are being limited to an exposure of 230 MD/ton. Alpha-rolled, triple-dipped slugs, examined after an exposure of 160 MD/ton, give promise of satisfactory performance at 400 MD/ton.

A process tube leak in the F Pile caused so great reactivity loss that the pile could only be operated at 40 MW at month-end, although all poison columns and special request slugs had been discharged. The pile was shut down for four days pending a demonstration at the B Pile that operation of a wet pile did not establish a permanent loss of reactivity. At month-end, water was being removed at a rate of about one gallon per hour, with a reactivity recovery at a rate of about 0.7 inhour per hour.

The tube leaks at both B and F Piles were found to be caused by defective lithium fluoride slugs, and all such slugs were discharged from the piles. Preparations are underway to install tritium extraction facilities in Bldg. 108-B, but the schedule for use of these facilities is now uncertain.

Diffusion measurements at the DR Pile indicate an even higher graphite quality than had been shown by the Test Pile. By this test, the DR Pile will start with 400 inhours of reactivity greater than the F Pile did at start-up, and with 120 inhours greater than the F Pile had prior to the recent tube failure.

Process changes at Morganton include the conversion of three more graphitizing furnaces to purification furnaces, the operation of all fourteen purification furnaces with a two-high stacking, and the charging of all purification furnaces with gas-baked coke instead of with graphitized bars. This permits 60 to 65% of the total production to be purified, gas-baked coke, - with gains of 80 to 150 inhours of reactivity compared to the DR Pile, with intangible reduction in rate of graphite expansion during operation of the piles, and with relatively small changes in the over-all graphite cost for new piles in comparison with the DR Pile.

The graphite in the DR Pile stacked up to a height about 0.2 inches below the intended elevation. Tests with the one tube mock-up showed that this condition was undesirable in its effect on allowable slope of the graphite at the inner end of the gunbarrels and indicated the advisability of re-stacking the DR Pile.

At month end sufficient equipment had been assembled to commence segmented discharge on all pile tubes, if such procedure were to be required in order to reach product concentrations equivalent to 400 MD/ton. Development of improved equipment was continuing.

Separations Technology Division

There were no significant process difficulties or changes in operation of the Separations Plants during the month of October. Filtration of the T Plant ventilation air discharge by passage through a sand bed was started on October 15.

Separations Technology Division (continued)

Monitoring surveys have shown a 99.2 to 99.8% efficiency for activity removal to be obtained, with a pressure drop averaging four inches of water at total air flows of 23,000 to 27,000 CFM. The B Plant sand filter was placed in operation on October 30 and is expected to exceed 99.8% efficiency. Pilot plant sand filter testing is continuing, including studies of radio-iodine removal. Stack gas studies of iodine distribution have indicated that essentially all iodine liberated from process comes from the dissolving operation. Follow-up of stack gas activity discharge has revealed that significant amounts of activity are still being discharged.

Continued studies of packed columns for use in the Redox process have established the throughput vs. efficiency relationships for columns bracketing both the Redox Test and Production Plants. Packed with Raschig rings, a 3-inch column has produced an H.E.T.S. value of ca. 1.2 ft. over a four-fold range of throughput and an 8-inch column an H.E.T.S. of ca. 1.5 ft. over a two-fold range of throughput. Revisions of the experimental mixer-settler contactor models under study are proceeding. Flame-sprayed polyethylene has shown very promising resistance to certain Redox process solutions.

The study of possible methods of increasing ruthenium decontamination in the Redox process has been expanded to include the use of isotopic dilution, complexing agents, and volatilization. The adsorption of zirconium by glass wool and the extraction behavior of zirconium is being continued in study. Other laboratory research being carried out includes studies of crossover oxidation, oxidation of plutonium by ozone, heats of extraction, temperature coefficients of extraction, plutonium (VI) distribution ratios, X-ray diffraction measurements, filter aid product pick-up, solubility and partial pressure relationships, and H.E.T.S. measurements with a laboratory experimental column.

Metallurgy and Control Division

Production rolling of uranium rods for Hanford continued at Lockport, N.Y., and Aliquippa, Pa., under technical supervision by the 300 Area Plant Assistance group. During the run at Aliquippa, 52 billets were forged to 2" squares and then rolled to final rod size. This procedure is much faster than straight rolling; the structural suitability of the resultant rod remains to be determined.

Preliminary flowsheets were developed for two 300 Area process modifications which look promising: (1) the pickling of uranium turnings to give oxide-free briquettes and allow their direct remelting with improved billet yield; and (2) the chemical treatment of scrap uranium fines and oxides, as an alternate to burning (with its contamination control problems).

Good progress was made in the examination of uranium alloy samples being submitted by Battelle in the cooperative search for an effective grain refining agent. Some structural effects are being observed with several of the sixteen alloying elements studied to date.

PILE TECHNOLOGY DIVISION

OCTOBER 1948

VISITORS & BUSINESS TRIPS

There were no visitors during the month of October.

Business trips of Pile Technology Division personnel during October were as follows:

Messrs. A. A. Johnson, A. B. Carson, H. W. Ritchey and D. H. Curtiss visited the Argonne National Laboratory on October 18-22 to attend Information Meeting and Symposium. V. L. Redding visited the Argonne National Laboratory on October 18-20 to attend Information Meeting.

C. W. J. Wende spent October 5-8 at the Argonne National Laboratory attending the High Flux Reactor Meeting.

ORGANIZATION & PERSONNEL

	September	October
Pile Physics Section	33	34
Pile Engineering Section	20	21
Administration	3	5
Totals	56	60

Two physicists, one engineer and one laboratory assistant were added during the month; one section chief and one physicist were transferred to Administration.

At month-end there were two physicists awaiting Q clearance. One of the physicists has been loaned to Project Engineering pending receipt of clearance, but is included in the above report.

PILE PHYSICS

Tube Leaks

The F Pile was shut down during the month as a result of the leakage of a large volume of water from a process tube into the graphite. The leak in the tube was produced by the rupture of a Special Request No. 15 (lithium fluoride) slug and the discharge of part of its contents into the water stream. An examination of the Special Request No. 15 slugs which were discharged from the recent leaking tube at the B Pile (reported last month) revealed that in this case also a ruptured slug was responsible for the leak. Following this discovery, all lithium fluoride slugs were discharged from the piles and no more will be loaded until the cause of the rupture is discovered and corrected. Exposures of slugs containing a lithium aluminum alloy are in progress to determine its acceptability as a possible substitute for lithium fluoride.

It was known from previous experiments, and also from theoretical work, that a considerable portion of the water in the graphite would dissociate by the action of radiation if the pile were operated at full power. The possibility existed that the hydrogen might react chemically with the graphite, or otherwise become trapped there. The evidence from the B Pile recovery was, at first, inconclusive on this point, and since a possible permanent loss of 30 to 40 inhours at F Pile was involved, this pile was shut down after five hours operation at 100 MW. After four days, the evidence that no permanent reactivity loss had occurred at the B Pile became more conclusive and F Pile operation was resumed.

The loss of reactivity of the F Pile at the time of startup was 450 inhours. This limited the operating level to 40 MW after all poison columns and Special Requests had been discharged from the pile. There was no detectable power output from some 250 tubes in the wet zone of the pile and graphite in this region presumably remains at inlet water temperature. The drying rate was therefore not rapid. There was no detectable reactivity gain during the removal of the first 200 gallons of water. After this time, however, reactivity gains began to appear and at month end the rate of gain was 0.7 inhour per hour. The rate of water removal averaged one gallon per hour and a total of 286 gallons of water had been removed. Various means of accelerating the drying rate were under consideration at month end.

Graphite Development

The accumulation of favorable test results on GBF material (gas baked, then purified) reported last month has led to the following change in the graphite production program of the National Carbon Company: The present eleven purification furnaces will be switched to GBF production, on a two layer per heat basis, as rapidly as possible. Three additional graphitization furnaces will be converted to this process. When this conversion is complete, 60 to 65% of the total production will be GBF material, the remainder being CS graphite. The reactivity gain over 40% purified material, as in the DR Pile, will be 80 inhours in an unflattened pile and 150 inhours in a pile with 360 inhours of flattening. During the conversion period, production of CSF graphite will continue in two-layer heats.

An additional favorable property of GBF material was discovered in that it is as insensitive to thermal shock as regular CS and KC graphite. No change in strength occurred in samples of any of these materials when they were heated to 500°C. and then plunged into ice water.

Radioactivity measurements now indicate that samarium is one of the rare earths present in unpurified graphite. Concentrations of the order of 2 ppm. are indicated. An unidentified, long period activity was also present. Previously, europium in concentrations of the order of 0.1 ppm. was discovered. (This was erroneously reported as 5.0 ppm.) Total removal of the europium, samarium, and boron found in unpurified graphite would result in material of better quality than the present purified graphite. Spectroscopic tests indicate no rare earths remain in purified graphite in concentrations higher than 0.1 ppm. However, even these amounts of individual rare earths would produce significant neutron absorption.

Oxidation of gas baked coke which had been purified at 2000°C. left an iron residue. Only a small residue was found in material purified at 2250°C. This result will not in itself explain the large increase in quality obtained by this temperature increase but the removal of iron suggests that other impurities may also be removed in considerable quantity.

Neutron Diffusion Measurements at DR

The diffusion length for thermal neutrons was measured in the DR pile early in the month and then the measurements were repeated in the upper half of the pile after it had been restacked. These measurements were undertaken primarily to detect any neutron absorbing contaminants or any decrease in purity from the Test Pile results. No evidence of contamination was found in either set of measurements. The diffusion length in the central region of the tubed pile was 52.0 ± 0.6 cm. After correcting for the presence of the aluminum tubes, and the various holes in the graphite, this indicates a neutron absorption cross section for purified graphite of 3.20 ± 0.07 millibarns, and indicates a 35 per cent greater reactivity gain for the DR Pile than had been calculated from Test Pile results. On this basis the DR Pile will have, at startup, 400 inhours more than the F Pile did at its startup and 120 inhours more than the F Pile had prior to its recent tube failure.

Pile Operation

The conservative estimates of the shutdown limitations in a pile containing a 100 per cent carbon dioxide atmosphere have been revised by actual experience at 40 per cent. The principal difference arises from the slightly lower graphite temperatures realized in practice as compared with predictions. It now appears that, at 100 per cent, there will be a three hour spread between the time when the pile can be started up and the time when it must be started to avoid the use of temporary poison. The use of the reduced power startup procedure would increase this interval to eight hours.

General

The four process tube ion chambers which were installed in the F Pile last month are now being used routinely to actuate the galvanometer circuit formerly connected to the ion chamber in A test hole. This hole has thus been freed for experimental work.

A check of one of the tips of the DR vertical rods was carried out by the neutron beam method. Checks were made at one foot intervals in addition to passing the entire rod slowly through the beam. No quantitative values can be given because of the high neutron absorption, but it was found that the boron layer was uniform throughout the length of the rod section.

Reactivity

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

	B Pile	D Pile	F Pile
In rods	65 ih	60 ih	25 ih
In Special Requests			
Within Poison Pattern	0	72	0
Outside Poison Pattern	0	21	9
In Plant Assistance Irradiation	0	40	0
In lead-cadmium columns	164	224	0
In bismuth columns	110	110	107
In dummy columns (including empty fringe tubes)	5	3	80
In xenon	526	485	172
In over-all coefficient	-105	-150	- 31
Total cold, clean reactivity	765	865	362

The B Pile gained 125 inhours, largely due to water removal during the month. The D Pile gained 9 inhours. The F Pile lost 411 inhours due to leakage of water into the graphite.

Status of Special Irradiations

The status of the Special Request program on October 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. indicat 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. Th abbreviations ORNL and ANL after the request number refer to Oak Ridge National Laboratory and Argonne National Laboratory 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	Discharged	Shipped	P.T.	ih ab sorbe
	12-B(UCRL)	Pu^{239}	1 slug	1 yr.	5/25/48	1769D			200	5**
	13-5(ORNL)	Be_3N_2	19 slugs	6 mo.	2/2/48	1569D	8/4/48			
			19 slugs	6 mo.	1/18/48	2374D	6/29/48			
*			53 slugs	6 mo.	5/12/48	2374F	10/20/48			
*			53 slugs	6 mo.	5/12/48	1569F	10/20/48			
			38 slugs	6 mo.	6/6/48	3169D				17
			39 slugs	6 mo.	8/4/48	1569D				17
			53 slugs	6 mo.	8/13/48	1579D				17
*			36 slugs	6 mo.	8/4/48	1474F	10/20/48			
*			36 slugs	6 mo.	8/4/48	3274F	10/20/48			
	15-15(ANL)	LiF	4 slugs	3-4 wks.	8/4/48	3169B	8/31/48		55F	
	15-16(ANL)	LiF	4 slugs	3-4 wks.	8/4/48	3169B	8/31/48		55F	
	15-17(ANL)	LiF	30 slugs	3-4 wks.	7/1/48	2082B	8/4/48		55F	
			30 "	3-4 "	7/1/48	2682B	8/4/48			
			39 "	3-4 "	7/1/48	3179B	8/4/48			
			39 "	3-4 "	7/1/48	3169B	8/4/48			
			39 "	3-4 "	7/1/48	1579B	8/4/48			
*			2 "	3-4 "	9/23/48	1569B	10/4/48			
*	15-18(ANL)	LiF	10 slugs	3-4 wks.	6/29/48	2066D	7/19/48	10/13/48	55F	
*			12 "	3-4 "	6/29/48	2666D	7/19/48	10/13/48		
*			15 "	3-4 "	6/29/48	2682D	7/19/48	10/13/48		
*			22 "	3-4 "	6/29/48	3179D	7/19/48	10/13/48		
*			22 "	3-4 "	6/29/48	3274D	7/19/48	10/13/48		
*			19 "	3-4 "	6/29/48	1579D	7/19/48	10/13/48		
*			35 "	3-4 "	6/29/48	2374D	7/19/48	10/13/48		
			39 "	3-4 "	7/1/48	2374B	8/4/48			

**Tube 1769D also contains 1 pc. SR-64, 4 pcs. SR-63, UCRL-100-105, 1 pc. SR ANL-111, and 2 cobalt slugs.

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
15-18(ANL)	LiF	39 slugs	3-4 wks.	7/1/48	1569B	8/4/48			
		6 "	3-4 "	7/6/48	3169F	7/27/48			
		24 "	3-4 "	7/19/48	1579D	8/13/48			
		10 "	3-4 "	7/19/48	2066D	8/13/48			
		12 "	3-4 "	7/19/48	2666D	8/13/48			
		35 "	3-4 "	7/19/48	2374D	8/13/48			
		23 "	3-4 "	7/19/48	2682D	8/13/48			
		22 "	3-4 "	7/19/48	3179D	8/13/48			
		22 "	3-4 "	7/19/48	3274D	8/13/48			
		17 "	3-4 "	7/27/48	3179F	8/19/48			
		6 "	3-4 "	7/27/48	3169F	8/19/48			
		17 "	3-4 "	7/27/48	1579F	8/19/48			
		21 "	3-4 "	8/4/48	3169B	8/31/48			
		28 "	3-4 "	8/4/48	1569B	8/31/48			
15-19(ANL)	LiF	29 "	3-4 "	8/31/48	3169B	9/23/48		55F	
		28 "	3-4 "	8/31/48	1569B	9/23/48			
*		35 "	3-4 "	9/23/48	3169B	10/4/48			
*		33 "	3-4 "	9/23/48	1569B	10/4/48			
*		9 "	3-4 "	10/6/48	2682F	10/20/48			
*		29 "	3-4 "	10/6/48	1579F	10/20/48			
*		9 "	3-4 "	10/6/48	2082F	10/20/48			
*		16 "	3-4 "	10/6/48	2666F	10/20/48			
*		7 "	3-4 "	10/19/48	1569B	10/26/48			
*15-20(ANL)	LiF	15 slugs	3-4 wks.	10/6/48	3169F	10/20/48		55F	
*		45 "	3-4 "	10/20/48	2066D	10/27/48			
*		45 "	3-4 "	10/20/48	3274D	10/27/48			
*		35 "	3-4 "	10/19/48	3169B	10/26/48			
*		28 "	3-4 "	10/19/48	1569B	10/26/48			
*		22 "	3-4 "	10/6/48	3179F	10/20/48			
28-5(ORNL)	Iron Enriched	1 casing	Indef.	4/4/48	BTHD			87C	0
28-6(ORNL)	Iron Enriched	1 casing	6 mo.	4/4/48	BTHD	11/16/48-T		87C	
28-7-12(ORNL)	Iron	6 casings	2 mo.						
29-5-10(ORNL)	P_2O_5	6 casings	60 days	10/22/48	DTHF			96B	0
40-1(KAPL)	Pu	3 slugs	1 wk.	11/5/48-T				148	
40-5(KAPL)	Pu	3 slugs	4 mo.	5/25/48	3177D	9/28/48		148	
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 rec'd					

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih a sorb
48(ANL)	BeO	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	1/14/48	128	
			1-30 da.	To be recanned					
			1-90 da.	12/23/47	2666F	4/4/48	4/14/48		
			1-180 da.	8/4/48	3876F				0
49(ANL)	Graphite-U Oxide	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	2/11/48	129	
			1-30 da.	11/5/48-T					
			1-90 da.	12/23/47	2666F	4/4/48	5/3/48		
			1-180 da.	Sample not received					
52(ORNL)	Al-U^{235} Alloy	229 slugs	100 da.	7/27/48	100F			208	0
				7/30/48	100D				0
59(ORNL)	Antimony	1 casing	6 mo.	1/27/48	BTHF			139	0
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	8/2/48	140	
			1-6 mo.	2/16/48	BTHD	8/26/48	9/23/48		
			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	
				1 pc.		3 pcs.	2 pcs.		
			5-5 mo.	4/25/48	2382F	7/19/48	5/3/48		
				2 pcs. 11/5/48-T			8 pcs. 9/3/48		
63(ORNL)	Al-U^{235} Alloy	21 slugs	7-3 mo.	4/11/48	1671D	7/15/48	9/3/48	146	
			7-6 mo.	(6)4/25/48	2382F				5
			7-12 mo.	(4)5/25/48	1769D				
				(3)11/5/48-T					
*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.	8/4/48	2578D	10/5/48	10/13/48		
			1-150 da.	2/16/48	1774D	7/19/48	9/3/48		
			1-300 da.	5/25/48	1769D				
*65-1	LiAl Alloy	49 slugs	15-1 mo.	10/27/48	3066D			143	17
			15-2 mo.	10/27/48	3274D				17
			19-3 mo.	10/27/48	2066D				20
79(KAPL)	U^{235}	Experiment being carried out by J. B. Lambert.							
80(ORNL)	HgO	4 casings	6 mo.	To be recanned				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

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih al sorbc
83(ORNL)	TiO_2	1 casing	6 mo.	4/25/48	DTHF			166	0
84(ORNL)	$AgNO_3$	1 casing	1 yr.	4/25/48	DTHF			167	0
85(ORNL)	Se	1 casing	1 yr.	To be recanned				181	
86(ORNL)	$Tl(NO_3)_3$	1 casing	1 yr.	To be recanned				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
ANL-100	Be	5 casings	6-12 mo.	3/24/48	BTHF	3 pcs. 9/13/48	3 pcs. 9/15/48	176	0
ANL-101	U^{238}	1 recept.	4-6 mo.	11/48-T					
ANL-107	Bi	1 slug	6 mo.	8/4/48	2173F			211	0
ANL-108	ThO_2	1 slug	6 mo.	11/5/48-T				218	
ANL-109	Pa_2O_5	1 slug	3 mo.	11/5/48-T				218	
ANL-110	PuO_2	1 slug	6 mo.	8/4/48	2974F			210	5
ANL-111	PuO_2	1 slug	1 yr.	5/25/48	1769D			200	
ANL-114	ThO_2	7 slugs	1 mo.-1yr.	11/5/48-T				215	
ANL-115	Mo	4 slugs	6 mo.-1yr.	11/5/48-T				215	
*ANL-116	Diamond, Be, C	1 casing	3 mo.	10/22/48	DTHF			221	
ANL-119	Stainless Steel	2 recept.	6 mo.						
ANL-120	Stainless Steel	1 recept.	6 mo.						
ANL-121	Nickel	1 recept.	6 mo.						
ANL-122	Nickel	2 recept.	6 mo.						
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	
UCRL-106	Tissue Ash	72 casings	2-3 wks.	(12 casings received)				189	
UCRL-107	Osmium	1 slug	1 mo.						
UCRL-108	Tantalum	1 slug	1 mo.						
UCRL-109	Phosphorus	1 slug	1 mo.						
UCRL-110	Selenium	1 slug	1 mo.						
UCRL-111	Palladium	1 slug	1 mo.						
UCRL-112	Rhenium	1 slug	1 mo.						
UCRL-113	Iridium	1 slug	1 mo.						
UCRL-114	Tungsten	1 slug	1 mo.						

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih al sorbe
*ORNL-100	$CaCO_3$	8 casings	18 mo.	9/3/48	DTHF			182	0
ORNL-102	Zr	1 slug	6 mo.	8/4/48	3876F			204	
*ORNL-103	Be	30 slugs	3 mo.-1 yr.	10/22/48	1980F			217	4
					2385F				1
					2473F				1
ORNL-104	Metals	8 slugs	3-6 mo.						
*ORNL-105	NaCl	3 casings	6 mo.-1 yr.	10/22/48	DTHF			219	
ORNL-106	Th	1000 slugs	125 days						
ORNL-107	Cobanic Alloy & Cobalt	3 slugs	1 mo.						

The following requests have been approved but the samples have not been received: ANL-105, ANL-112, ANL-113, ANL-117, ORNL-101, ORNL-108, ORNL-109, ORNL-110.

PILE ENGINEERING

Corrosion and Blistering of Slugs

Examination of additional four-inch, alpha-rolled, lead-dipped slugs confirms the results reported last month. However, five tubes of alpha-rolled, lead-dipped slugs which had not been annealed showed greater dimensional stability than the annealed slugs after an exposure of 230 MD/ton. Only ten per cent of these slugs grow longer and thinner, while the remainder grow shorter and thicker. Maximum changes are approximately half those observed on similar annealed slugs.

One tube of alpha-rolled, triple-dipped slugs after an exposure of 160 MD/ton demonstrated relatively superior behavior. Dimensional stability is superior to that of alpha-rolled, lead-dipped material, and negligible blistering was exhibited. The prospect for going to 400 MD/ton irradiation of this type of slug is encouraging.

Corrosion of Process Tubes

As discussed in the Pile Physics section of this report, the recent tube leaks in the B and F Piles are now attributed to the presence of defective lithium fluoride slugs. Borescopic examination after removal of the tube from the F Pile showed that the graphite adjacent to the leak was wet but apparently undamaged.

Corrosion of Van Stone Flanges

At the F Pile magnesium gaskets have been installed on seven inlet flanges, magnesium alloy gaskets on six outlet flanges, and magnesium alloy slugs in 25 outlet nozzles in order to test their effectiveness in furnishing cathodic protection to the Van Stone flange.

Flow-cup tests of couples between 2S aluminum and the surface of galvanized stainless steel show the galvanize protects aluminum from corrosion at temperatures up to approximately 50°C. The potential reverses, however, so that aluminum corrodes at 60°C. These data, if representative of behavior on an operating pile, show that galvanizing the interior surface of stainless steel nozzles may not solve the corrosion problem on outlet Van Stone flanges in the hot zones.

It was demonstrated that one-half inch of engaged threads between the gun barrel and flange will support a load of 45 tons. This indicates that additional room for re-Van Stoning can be provided by relieving the threads on the back of the flange and further shortening of the gun barrel.

Graphite Expansion

Tests on the one-tube mock-up were made with relative gun barrel and graphite positi similar to that at the DR Pile after the first lay-up. A load of 960 pounds was placed over the inner end of the gun barrel and a load of 1025 pounds was distribute along the four-foot graphite block to simulate the load above tube 4674 from thermal blocks and graphite. With the graphite 0.385 inches below the gun barrel, the graph block broke at a slope of 0.24 in./ft.; with the graphite 0.21 inches below, at a slope of 0.4 in./ft.; and with the graphite level, breaking occurred at a slope of 0.5 in./ft.

These tests indicate that such a misalignment of graphite and gun barrels when combined with the tilting action due to graphite expansion could significantly shorten the life of a pile. This adverse condition has been corrected at the DR Pile by re-laying the graphite with special filler blocks in certain process tube layers tailored to greater than nominal thickness.

Segmented Discharge

At month's end sufficient equipment of the Model II reel and spline type was on hand to carry out segmented discharge as a standard operating procedure if required. Work is progressing on Model III equipment which will permit discharge of adjacent horizontal rows.

Assistance to New Construction

A gun barrel and doughnut assembly of the DR design was inserted into the A hole at the D Pile as the first stage of an experiment to evaluate radiation shielding of various doughnut designs.

The "B Hole" type sample-loading facility is being redesigned to reduce radiation exposure of personnel during removal of samples.

Pile Helium System

Inspection of the silica gel bed of the No. 1 helium dryer at the F Pile indicated that the relatively poor performance of this dryer could not be attributed to channel ing of the gas through the bed.

P-10 Project

At month end the schedule for the P-10 project was confused because of the operating difficulty with the lithium fluoride slugs during irradiation. However, work had commenced on preparing Building 108-B for installation of tritium extraction faciliti

W. K. W.

SEPARATIONS TECHNOLOGY DIVISION

OCTOBER, 1948

VISITORS & BUSINESS TRIPS

J. B. Holmes, of the Chemical Department at Pittsfield, visited here on October 7 and 8 for a technical consultation with the division.

H. A. Moulthrop visited the Research Laboratory on October 4-9 for consultations concerning the 234-5 Project

O. H. Greager, R. H. Beaton, R B. Richards, V. R. Cooper, and F. W. Woodfield visited Argonne National Laboratory on October 4-5 to attend a Redox process symposium. From there, R. B. Richards and V. R. Cooper continued to the Standard Oil Development Company, Bayway, N. J., to consult with F. W. Schumacher on Redox mixer-settler design and performance.

F. W. Albaugh, J. B. Work, D. W. Pearce, H. R. Schmidt, C. Groot, W. H. McVey, and C. M. Slansky attended the Information Meeting at the Argonne National Laboratory on October 18-20. Pearce also attended the Standards Meeting, held on October 21-22.

B. Weidenbaum and E. V. Plock visited A. G. Natwick at the Crown Willamette Paper Company of Camas, Washington,on October 21-22, where they inspected a precipitator installation.

ORGANIZATION & PERSONNEL

Personnel totals in the Separations Technology Division may be summarized as follows:

	September	October
Process Section	22	23
Development Section	114*	94
Research Section	24	27
Tech. Grad. B's in training	-	27
Administration	1	1
	161	172

*This figure included the Technical Graduate B employees in training.

New hires were as follows: Two chemists and one chemical engineer were added to the Research Section. Two chemical engineers, two clerical employees, and three operators were added to the Development Section. One chemical engineer was added to the Process Section and two Technical Graduate B employees were added to the group being trained by the S Division.

Separations Technology Division

Two operators and one laboratorian were transferred into the Development Section. One clerical employee, one laboratorian, and one operator terminated during the month in the Development Section.

At month-end there were eight non-exempt personnel on the rolls awaiting security clearance.

200 AREA PLANT ASSISTANCE

Canyon Buildings

The phosphoric acid at B Plant increased in reducing material content, during storage, to a value two to five times greater than that permitted by the specifications for phosphoric acid receipts. Treatment of this acid with dichromate prior to the by-product precipitations lowered the second cycle by-product losses but had no significant effect on the first cycle losses.

Runs have been processed at T Plant with oxidant added to the tanks used for oxidizing the first and second cycle product solution prior to the receipt of the run in these tanks. In this manner the material trapped in the dip tubes was exposed to oxidizing conditions. A second oxidation was performed in the normal manner prior to precipitation. It was indicated that the second cycle by-product loss was not affected by this procedure, while the first cycle by-product loss may have been lowered by 0.1%. This procedure will be investigated further.

Concentration Buildings

Effective flushing of the F-1 metathesis tank with the wash effluent prior to the routine waste rework lowered the metathesis product loss by approximately 0.1% of 8-1MR. The average loss obtained under this procedure was found to be 0.06%.

Difficulties had been experienced at T Plant in transferring the lanthanum fluoride product cake from Centrifuge B-2 to Metathesis Tank B-4. Replacement of the transfer jet has apparently corrected the difficulties.

Following Run T-8-10-D-8 at T Plant, an acid flush of Centrifuge B-2 and Metathesis Tank B-4 was made. The product pick-up was 10.1%, an amount comparable to that usually found in the periodic Cell F flushes.

On the first twenty T Plant runs in the 8-09 series, the average product content in C-4 (first tank in 224 Building) agreed closely with the starting assay (8-1MR) less measured losses, although on individual runs discrepancies of as much as 12% existed. This is taken to establish the validity of the C-4P sample which is being taken routinely as a part of the current material balance study.

REDOX DEVELOPMENT

Demonstration Unit Studies

Studies in the Demonstration Unit have been devoted to limiting capacity and H.E.T.S. measurements in the 3-inch IA Column. The first group of studies summarized below was conducted under Scale-Up process conditions; i.e., simple column (no scrub section), IAX prepared from water-washed raw hexone, and omission of IAF dichromate.

DEMONSTRATION UNIT RUNS: THREE-INCH IA COLUMN

Conditions: Scale-Up Process (see above)

Run No.	Raschig Rings	Type of Study	Total Throughput Gal./Hr./Sq.Ft.	% ANL Flow Sheet	Uranium H.E.T.S., Ft. (Extraction Section)
17(1)	1/2" x 1/2"	Flooding	1129	634	1.9 (Approx.)
18	1/4" x 1/4"	H.E.T.S.	446	251	1.2
19	1/4" x 1/4"	Flooding	573	322(2)	---
20	1/4" x 1/4"	H.E.T.S.	447	251	1.0
21	1/4" x 1/4"	Flooding	756	425(2)	---

(1) Maximum capacity not attained at 670% of ANL flow sheet. Pumping equipment not adequate for greater rates.

(2) Point of complete flooding

Of the two flooding runs (19 and 21), the latter is felt to be more correct. Greater effort was made to attain rate stability. The last point of stable operation was found to be 375% of ANL volume velocity. The performance of 1/4 x 1/4-inch rings under these process conditions indicate at least a 4-fold capacity range (100% - 400% ANL) is possible at uranium H.E.T.S. values of less than 1.5 ft.

Following the above studies, the scrub section was added to the column and a series of runs was carried out under IA process conditions to define the H.E.T.S.-throughput relationship and to determine the limiting capacity. These studies are summarized below.

DEMONSTRATION UNIT RUNS: THREE-INCH IA COLUMN

Conditions: IA Flow Sheet

Packing: 1/4 x 1/4-inch Raschig rings

Run No.	Type of Study	Total Throughput Gal./Hr./Sq.Ft.	% of ANL Flow Sheet	Uranium H.E.T.S., Ft. (Extraction Section)
22	H.E.T.S.	445	254	1.1
23	Flooding	790	450(2)	---
24(1)	H.E.T.S.	176	100	1.3 (Approx.)

(1) Capacity = 1/25 nominal plant scale of 1.5 Metric Tons U/day. H.E.T.S. value reflects poor rate control due to faulty bellows pump.

(2) Last point of stable operation. Complete flooding point found to be approx. 500% ± 50%.

The above studies at least give a preliminary indication that, under strict IA process conditions, a 4-fold capacity range is possible. Studies are planned to define the H.E.T.S. - throughput curve more accurately and extend the relationship to rates below the nominal 1/25th scale. During the month, four routine IC recovery runs were conducted in the 10 ft., 4-inch stainless steel column packed with

1/4 x 1/4-inch Raschig rings and 3 runs with 1/2 x 1/2-inch Raschig rings. ICW uranium waste losses averaged <0.1 g./l. in most cases. A definitive study of the IC H.E.T.S. - throughput - diameter relationship is planned for the near future. Immediate plans for the Demonstration Unit call for IB studies in the 2-inch glass column and IA spray column studies in the 3-inch unit.

Scale-Up Studies

Efforts have been directed toward further defining the H.E.T.S. - capacity curve under Scale-Up process conditions for the 8-inch IA column packed with 1/2 x 1/2-inch Raschig rings. Five runs have been completed and the essential data are tabulated below.

SCALE-UP UNIT RUNS: EIGHT-INCH IA COLUMN (SIMPLE)

Extraction Length = ~~10.1~~ 19.1 ft.

Run No.	Total Throughput Gal./Hr./Sq.Ft.	% ANL Flow Sheet	IAW Losses, % of Feed U	H.E.T.S., Ft. (Extraction Section	Metric Tons U Per Day
1(1)	875	494	<0.1	1.5	2.4
2	1130	636	0.4	1.7	3.1
3	546	307	1.3	2.4	1.5
4	704	397	<0.1	1.5	1.9
5(2)	1220	684	1.1	1.5(2)	---
6	1470	829	<0.1	1.7	3.8

(1) Reported previously.

(2) Run conducted to reduce uranium content in a 0.04 M UNH feed. H.E.T.S. value only rough approximation.

During the final study at 1470 gal./hr./sq.ft. (3.8 metric tons of metal/day), operation of the unit was stable and uniform. Evidence of turbulence in the top disengaging section was noted, however. A 5 ft., 16-inch diameter section has been installed to alleviate this condition and to permit the limiting capacity to be approached without danger of aqueous entrainment in the IAU stream. During the above studies, the heat liberated by virtue of uranium transfer into the hexone phase (ca. 6000 calories per mol of U) was indicated by a column shell temperature rise of 5 to 8°C. The temperature attained a maximum at a point 9-10 ft. below the top of the 19.1 ft. packed section. The aqueous IAW stream returned to room temperature at the column exit port. During IC operation in the same column, a temperature drop of ca. 15-20°C. was noted about 5-6 ft. above the feed introduction port. All effluent streams (ICW & ICU), however, were at room temperature.

An attempted Service Extractor IC run (SE-1-CU) had to be terminated after 4 hours of operation because of emulsion formation in stages 4, 5, and 6. The HNO_3 was omitted from the ICX stream in order to keep to a minimum the amount of acid to be subsequently neutralized in the ICU stream. The run was continued in the 8-inch column with satisfactory recovery and low ICW losses (<0.5 g./l. UNH). A total of four IC recovery runs has been conducted in this column, in all cases the HNO_3 being omitted from the ICX stream. Definitive IC H.E.T.S. studies are planned for the near future.

Separations Technology Division

Equipment Development

Studies in the semi-works filtration test stand to define the utility of filter aids for dissolver metal clarification are continuing. Standard Super Cel and Super Filtrol precoated to the extent of ca. 53 g./sq.ft. on an "F" porosity sintered filter plate permit initial rates of 2-4 gal./min./sq.ft. at 14 p.s.i. pressure drop. These rates level off, however, at about 0.1-0.3 gal./min./sq.ft. after 1-2 hours filtration time. Premixing the filter aid to the extent of 0.1% to 1% does not appear to improve the filtration capacity. Satisfactory clarity improvement is obtained in all cases. Document HW-10960 (Redox Technical Data Study No. 8) dealing with the early filtration work was issued during the month.

During the month, hydraulic studies with IAX and IAS solutions in the S.O.D. 1/100t scale 21-stage mixer-settler unit continued to indicate unstable interface characteristics due to agitator pumping. One of the units is in the course of modification designed to give more positive interface control. Fifteen vibrating agitators have been fabricated to date for the purpose of reducing this pumping action. Studies in the 15-stage ANL box unit employing a labyrinth-type counter-current passage of the phases have indicated uranium stage efficiencies varying between 12 and 50% using 4-bladed opposed-pitch propellers Studies with larger opposed-pitch propellers, conical agitators, and vibrating plates are currently in progress.

Studies with the G.E. Turbine Pump No. 2 with enlarged suction ports produced greater pump capacity, but excessive wear of the outboard fluorothene (carbon-filled) bearing occurred after a 6-hour testing period with water. The pump is currently being revised to eliminate this wear. A test stand for studying Turbine Pump No. 3 under submerged conditions is being fabricated. A magnetically coupled turbine pump has been received from the Kellex Corporation and is being readied for test. Redox Equipment Testing Report No. 6 (Document HW-11280) covering progress to October 15 was issued during the month.

IAX immersion tests with concrete blocks coated with flame-sprayed polyethylene indicate that a low molecular weight variety (Imperial Chemical Industries) shows good resistance after 30 days. U.C.C. high molecular weight polyethylene showed signs of solution penetration after this period. Both types of coatings exhibit surface cracking after 8 days of immersion in 60% HNO_3.

Process Laboratory

The preparation of ferrous sulfamate in accordance with the ANL procedure has been found to be satisfactory. It has also been noted that only 5-6% of Fe^{+2} is oxidized after the ferrous sulfamate solution has aged approximately 6 weeks at room temperature. A IB counter-current batch cascade uranium equilibrium study is currently in progress. A bench-scale continuous evaporator has been fabricated for the purpose of arriving at optimum conditions for ICU hexone removal and concentration. The removal of hexone from ICU by extraction with solvents such as benzene and iso-octane was studied in a preliminary manner. The evaluation of results is awaiting a satisfactory method for detecting small quantities of hexone in aqueous solutions.

Separations Technology Division

REDOX RESEARCH

Decontamination with Respect to Ruthenium

Isotopic Dilution - An investigation of the effect of isotopic dilution on the distribution of ruthenium activity is in progress. Limited preliminary data indicate that a very high degree of removal of ruthenium activity from the hexone phase can be accomplished in one or two scrub stages, provided exchange of the tracer and carrier has been accomplished by joint distillation of the carrier and tracer as the tetroxide. When carrier and tracer are separately distilled into HNO_3-H_2O_2 solutions and these solutions joined together for use in extraction experiments, exchange does not appear to be complete. Although the ruthenium color is completely removed from the hexone phase in one scrub, the distribution ratio based on counts is no different than in the absence of carrier ruthenium. Attempts to obtain exchange of the carrier and tracer in solution by oxidation with Ce(IV) have, to date, been unsuccessful.

Investigation of Complexing Agents - A number of possible agents for the complexing of ruthenium have been tested. Of these, only mesityl oxide has shown a pronounced effect. Using 1% by volume of mesityl oxide in the aqueous phase (composition: 1.3 M $Al(NO_3)_3$, 0.15 M HNO_3, 0.1 M $Na_2Cr_2O_7$) $E(\frac{h}{a})$ was decreased by a factor of 10-12 in extraction contacts and ca. 2 in each of the first two scrub contacts (1.3 M $Al(NO_3)_3$), when the aqueous phase containing mesityl oxide was heated 30 min. at 75° prior to addition of the dichromate. The effect was less marked if the dichromate were added before heating. Addition of 1% mesityl oxide to the hexone extracts, with or without heating, had only a slight effect on the subsequent scrub stages.

Dithio-oxamide was found to decrease $E(\frac{h}{a})$ appreciably in the extraction contact but crud formation was observed.

Distillation of RuO_4 - Removal of RuO_4 by various oxidizing agents has been further tested, using glass apparatus and simulated dissolver solution spiked with ruthenium tracer. Using an oxygen stream containing about 4% ozone at a temperature of 75°, removal of ruthenium was slow without a catalyst, 6.2% of the original Ru remaining after two hours. Under the same conditions, except that 0.01 M Ag^+ was present, essentially all of the ruthenium was removed. In the presence of ozone, a considerably higher percentage of the overhead ruthenium carried through to the second caustic trap than has been observed using $KMnO_4$ as oxidizing agent.

Further experiments with $KMnO_4$ indicate that 0.01 M is a satisfactory concentration (glass apparatus). Complete removal of ruthenium using $KMnO_4$ has been demonstrated

Cerium (IV) has been found to be as effective as permanganate in removing ruthenium from solution. The ruthenium has shown a marked tendency to deposit on the walls of the still, however. This behavior is not yet understood but may possibly be caused by the presence of materials in the cerium reagents which distill out with the ruthenium. Ozone and permanganate exhibit this behavior only to a small degree.

Separations Technology Division

Zirconium Studies

Adsorption by Glass Wool - Starting with plant 4-8-MS solution (ca. 50% UNH) and employing simulated flow sheet conditions, one extraction and one scrub contact gave zirconium and gross gamma decontamination factors of 868 and 559, respectively. These values are to be compared with previously reported values of 4.7×10^5 and 2.3×10^4 obtained under comparable conditions, except that extractic and scrub contacts were preceded by three contacts of the dissolver solution with glass wool.

Extraction Behavior - No significant differences in zirconium distribution were observed when distilled hexone which had been freed of oxidizing impurity and distilled hexone which contained an appreciable amount of oxidizing impurity were contacted with an aqueous aluminum nitrate solution containing potassium dichromate. The presence of macro amounts of inactive zirconium appeared to worsen the decontamination of zirconium under the above conditions

Kinetic Studies

Crossover Oxidation - Further studies of the crossover oxidation under the June 1, 1948 ANL flow sheet conditions confirm previous results to the effect that the oxidation of Pu(IV) to (VI) by 0.02 M dichromate at room temperature is much slower at the production plant concentrations than at tracer concentrations. At 0.025, 0.5, and 1% of flow sheet Pu concentration, the half-time found for oxidation to (VI) was 80 minutes; at 100% of flow sheet (0.4 g Pu/l), the half-time, determined both spectrophotometrically and by means of zirconium phenyl arsonate carrier, was 20 hours. These data indicate that plutonium should be almost entirely in the (IV) state in Col. IIA.

Oxidation of Plutonium by Ozone - Preliminary experiments have been performed on the oxidation of macro concentrations of plutonium by ozone in Redox solutions. If successful, this would permit simultaneous oxidation of product and removal of ruthenium in solutions such as dissolver feed or IBP. Elimination of dichromate in IA or its reduction to the role of a dilute holding oxidant is a speculative possibility.

A ten ml. volume of simulated IBP solution containing 0.5 g Pu(III)/liter was made 0.5 M in HNO_3 and 0.01 M in $AgNO_3$. Through this solution 10 ml/min. of an oxygen stream containing ca. 4% ozone was bubbled for one hour at room temperature Spectrophotometric analysis showed that 25% of the Pu was in the (VI) state and 75% in the (IV) state. After three hours, 54% was in the (VI) state. The solution was then ozonized for one hour at 75°C, after which all of the Pu was found to be in the (VI) state.

Physical Properties and Distribution Coefficients

Heats of Extraction - Preliminary values for heats of transfer of UNH and HNO_3 have been measured calorimetrically, employing hexone and aqueous phases corresponding to IA and IC operation. Transfer of HNO_3 appears to involve only slight heat effects. A ΔH value of 2900 cal./mol. found for transfer of UNH into water from a hexone solution 0.5 M in UNH, 0.1 M in HNO_3 is in rough agreement with the refrigeration observed during IC operation of the 8-inch column. Values obtained for systems corresponding to IA operation cannot be checked against column operation until a complete IA heat balance has been determined

Specific heats of process solutions are being obtained in order to permit more accurate determination of heats of transfer.

Separations Technology Division

Temperature Coefficients of Extraction - Over the range of 0 to 60°C, temperature coefficients of extraction have been determined for three systems having the following aqueous phase compositions: (1) ca. 1.5 M UNH, (2) ca. 0.6 M HNO_3, and (3) ca. 1.4 M UNH, ca. 0.39 M HNO_3. Using the distribution data, K values were calculated assuming the simple reactions:

$$UO_2^{++}(aq.) + 2\ NO_3^-(aq.) \rightleftharpoons UO_2(NO_3)_2(org.)$$

$$H^+(aq.) + NO_3^-(aq.) \rightleftharpoons HNO_3(org.)$$

The equilibrium constant data were used for calculation of ΔH values to check the calorimetric results previously described, but the results are not considered reliable owing to uncertainties in regard to activity co-efficients.

Plutonium (VI) Distribution Ratios - Determination of Pu(VI) distribution ratios in $Al(NO_3)_3$-UNH-HNO_3-hexone-water systems is continuing. Difficulties encountered in the assay of hexone phases have been overcome by using the alkaline precipitation procedure for elimination of interfering aluminum and chromium.

X-Ray Diffraction Studies - A powder diffration camera has been set up for the study of precipitates and cruds arising in the Redox Process.

A yellow precipitate found on evaporation of ICU solution in the semi-works has been found to contain uranyl acetate and another as yet unidentified constituent.

Filter Air Product Pick-Up - Supercel (diatomaceous earth) and filtrol (activated clay), which engineering tests have shown to be effective for clarification of dissolver feed, have been compared in respect to product pick-up and desorption when used as 1% and 2% slurries in simulated feed solutions. In the (VI) state, ca. 0.1% of Pu was picked up by each material. Using Pu(IV), Filtrol was considerably inferior, ca. 8% of the Pu being adsorbed whereas only about 0.4% was adsorbed by Supercel and, of this, 90% was removed in three leachings with 6 M HNO_3.

Improved Equations for the Solubility and Partial Pressure of Hexone in Water - An equation representing the solubility of hexone in water with greater accuracy than the one previously reported (HW-10780) has been obtained. Using the postulate of a hexone hydrate and employing a thermodynamic treatment with some simplifying assumptions, a new form for the empirical equation was derived. Fitting this to the data, it was found that:

$$\text{Wt. \% Hexone} = 3021.0332\ e^{-2825/T} + 0.0042466\ e^{1775/T}$$

The activities of hexone and water in saturated solutions have been further investigated. This has led to an equation for the activity of hexone in the saturated solution:

$$\log_{10} a_{(\text{hexone})} = 0.15224 + \frac{37.2856}{T}$$

A much improved equation for the partial pressure of hexone in the saturated solution was also obtained:

$$\log P = 23.51562 - \frac{2753.0}{T} - 5.2566 \log t$$

Within experimental error, the activity of water in these solutions is unity and the partial pressure is equal to that of pure water.

H.E.T.S. Studies with the Experimental Column - Studies with the experimental column using 3/16-inch Fenske helices, IAFS feed solution made from crystalline UNH, and water-washed raw hexone have continued. The normal H.E.T.S. value of ca. 1.75 ft. for UNH transfer was lowered 0.4 - 0.6 ft. by addition of trace amounts of Fe^{+3} or Cu^{++}. Treatment of the packing with palmitic acid to render the surface hydrophobic increased the H.E.T.S. about 0.4 ft. Inversion of the column, employing hexone as the continuous phase, approximately doubled the stage height.

Emulsification of Water in Hexone as a Factor in Decontamination - Assuming the true solubility of cesium in hexone solutions to be vanishingly small, apparent distribution ratios of cesium tracer in Redox systems have been employed as a measure of the tendency of the aqueous phase to remain dispersed in the hexone phase following agitation. As expected, this effect was greater for $Al(NO_3)_3$ systems than for NH_4NO_3 systems. A considerably larger hold-up effect was noted when UNH was present than when UNH was absent.

STACK GAS DISPOSAL

The T Plant sand filter was placed in operation on October 15 and the B Plant sand filter was started up October 30. Based on instrument surveys of monitoring filters, the T Plant sand filter, with 24 inches of sand, has been removing 99.2 to 99.8% of the activity in the Canyon ventilation air. Laboratory analyses of the monitors have shown comparable efficiencies (98.8 to 99.7%). The pressure drop across this filter was approximately four inches of water with a total air flow of 23,000 to 27,000 CFM. The B Plant filter, with 36 inches of filtering sand, was expected to exceed 99.8% efficiency. The pressure drop across this filter, with two fans in series, was approximately six inches of water at an estimated air flow of 25,000 CFM.

Pilot plant sand filter studies have been continued with increased linear velocities, using 30-40 mesh crushed flint. The efficiency was somewhat higher than expected at the high flows; based on laboratory results it was found to be 98.9% at 40 feet per minute. Retesting of Hanford sand is now in progress pending arrival of a glass fiber, now on order. This glass fiber will be tested as a filter medium in a unit of the sand filter type.

The extended sand filter run in 292-B has been continued. This test was temporarily interrupted in order to connect the filter to a new sample line in the upstream plant sand filter ductwork to replace the previous sampling point in the stack breeching. This unit, charged with Ottawa 30-40 mesh sand, showed an efficiency of 98.6% (based on laboratory beta analyses) after 33 to 40 days of operation, compared with 99.2% after 16 days and 96.4% after 20 to 27 days. An increase in pressure drop obtained is believed to be due to condensation in the lines and sand filter. These will be drained and dried to determine more accurately the effect of extended use on pressure drop.

Runs evaluating the utility of a sand filter for I^{131} removal indicated a widely varying efficiency, which reached a maximum of 25% on one run.

Final data for two scrubbing runs of seven days duration indicated that an average of 69 (in the first run) and 65 (on the second) millicuries of I^{131} passed the 50-foot level of the stack per twenty-four hours. This is about 1% of the

theoretical iodine activity in the slugs at the time of dissolving. The data confirm earlier results obtained when samples were taken from the off-gas line directly. It is thus indicated that most, if not all, of the iodine evolved from the stack originates in the dissolver off-gas rather than from the general ventilation air.

Sample filter evaluations of the ventilation air were continued. The B Plant activity level dropped coincidentally with the complete reinstallation of C.W.S. cell filters, but was higher than that observed immediately after the first set of filters was installed several months ago. Following the installation, a steady increase in activity was noted. Activity in the T Plant Canyon ventilation air was found to be consistent with Canyon operations. Sampling from the stack 50-foot level at T Plant (downstream from the sand filter) indicated that significant amounts of activity were still going out the stack, presumably due to dissolver off-gas or to residual activity in the stack and fan system.

A gas sampling line has been run to the top of the stack at T Plant. Upon completion of the necessary auxiliaries, samples will be drawn from this point.

METALLURGY & CONTROL DIVISION

OCTOBER 1948

VISITORS & BUSINESS TRIPS

L. L. Wyman of the Knolls Atomic Power Laboratory spent October 18-19 with the Metallurgy Laboratory Section reviewing present and proposed programs in uranium metallurgy.

Business trips of personnel in this division during October were as follows:

C. G. Stevenson and E. A. Webb attended an Atomic Energy Commission Librarians' Conference at Argonne National Laboratory on October 15-16.

R. Ward, W. W. Marshall and L. D. Turner attended the Project Information Meeting at Argonne National Laboratory on October 18-21. R. Ward spent October 25-27 at the ASM Convention in Philadelphia making personnel contacts. L. D. Turner visited the Knolls Atomic Power Laboratory on October 25-26 to discuss hot metallurgy design problems.

W. T. Kattner and R. Teats supervised the rolling of uranium rods for Hanford at Lockport, N. Y., from October 23-31. T. S. Jones visited Aliquippa, Pa. for the same purpose October 18-31.

D. F. Shepard spent the week of October 25-29 at the Oak Ridge National Laboratory investigating Redox Analytical methods.

ORGANIZATION & PERSONNEL

Personnel totals in the several sub-divisions are summarized below:

	September 30	October 31
300 Area Plant Assistance Group	11	12
Metallurgy Laboratory Section	21	20
Analytical Section	397	410
Statistics Group	9	9
Information Group	44	46
Administration	2	2
Totals	484	499

One exempt metallurgist was added to the 300 Area Plant Assistance Group, as a transfer from the Metallurgy Laboratory. The Information Group employed four non-exempt Files personnel. Analytical employed three monthly-roll chemists, one engineer-on-assignment (to head Glass Shop), one supervisor-in-training, seven non-exempt chemists and twelve laboratory assistants. This section transferred one laboratory assistant to the Manufacturing Divisions and two laboratory assistants to other Technical Divisions. There were eight terminations, none due to lack of housing.

At month-end, this Division had no exempt and 14 non-exempt personnel on the rolls awaiting security clearance for classified work. Most of these were Analytical Section personnel.

Metallurgy & Control Division

300 AREA PLANT ASSISTANCE

Uranium Melting and Casting

Results of 11 trial casting heats made in the melt plant with charges containing briquettes prepared from pickled uranium turnings (essentially oxide-free) indicate this chip pretreatment to effect an 8.6% improvement in the billet casting yield. This higher yield results in a reduction of about 25 pounds per casting heat in the uranium which has to be burned from the crucible and shipped off-site for chemical recovery. Although there is a turnings weight loss during pickling (about 8%), the overall metal yield is still sufficiently high (91.2%) to make pickling very attractive. The results of this investigation have been recorded in Doc. HW-11,311 (dated Oct. 20, 1948) which includes a flowsheet for the proposed chip pickling process.

Uranium Rolling

Uranium billets were rolled at Lockport, N.Y., and at Aliquippa, Pa., during the month under the supervision of 300 Area Plant Assistance personnel.

During the run at Aliquippa, 52 billets were forged to 2" squares and finish-rolled to 1.45" rounds to evaluate this promising method of fabrication. Forging and rolling were accomplished without incident, and these rods are to be included in the regular shipment to Hanford.

Uranium Machining

Results of machining of the 79 tons of Type B uranium rolled during the first production at Aliquippa (in August) showed a rod to slug yield of 72.3%. This is identical to the yield obtained with 38 tons of Type B rods rolled at Lockport, previously.

Slug Canning

Results with the pickling of 4" slugs (under PT 313-105-M) using a one-minute pickle (instead of the standard four-minute pickle) showed (1) this shorter time to be satisfactory for both machined and recovered slugs, provided the recovered slugs were not straightened prior to pickling, and (2) this pickling time did not cause the objectionable uranium pick-up in the flux noted with the 30-second pickle. Further, it was determined that straightening did not affect the canning yield with recovered 4" slugs. Process change papers are in process to incorporate this shorter pickle cycle in the Canning Process.

Investigation of the cause for pinholes in the weld beads of canned slugs showed that they were caused by flaws in the caps. It developed that the caps had been turned from 1 3/8" diameter bar stock, and the flaws were sections of the bar surface that failed to clean-up during machining. All of the thin caps on hand were scrapped by the P Division and thicker caps (of the type formerly used with 8" slugs) have been substituted until thin caps turned from 1-1/2" diameter stock can be procured.

Metallurgy & Control Division

Investigation (under PT-313-107-M) of the effect of sleeve assembly preheating on the incidence of non-seat canning rejects showed preheat time to determine the canning bath temperature at which rejects of this type are produced. Although it is possible to reduce the number of this type of reject by canning above this minimum temperature, the thickness of the can wall is reduced below the desired 0.010" thickness when this is done. This means that, it is impossible to eliminate both types of defects simultaneously. A supplemental test is being written to cover investigation of the combined effects of slug diameter bath composition and temperature, and sleeve preheating.

Contact was maintained with Schenectady regarding the planned trials of induction heating with uranium rods and slugs at KAPL. Indications are that these experiments can be scheduled for early November.

Uranium Oxide and Fines Recovery

As a substitute for the rather hazardous burning of uranium oxides and metallic fines a chemical treatment was developed to convert uranium scrap of this type to sodium uranyl nitrate for shipment off-site. This process has been recorded in Doc. HW-11,304, dated Oct. 19, 1948.

Miscellaneous

Results of corrosion tests with strips of stainless steel coated with Al-Si, which were conducted for the Pile Engineering Section, indicated this type of coating to be a promising means for reducing the corrosion of Van Stone flanges on the 100 Area piles. Methods for applying this coating to stainless steel tubing and pile-type nozzles are being investigated.

METALLURGY LABORATORY

Heat Treatment of Alpha Rolled Material

Two-inch sections of alpha rolled uranium rod heat treated at 680° to 700°C (1256-1292°F) for 1-1/2 to 2 minutes, followed by water quenching, showed an almost complete lack of the columnar grain structure normally found in triple-dipped slugs. The resultant grain size was smaller by a factor of 5, and the structure appeared to be more uniform than that of normal triple-dipped alpha rolled metal. From these investigations it appears that the rate of cooling through the beta to alpha transformation may be important in controlling the resultant grain size.

Uranium Alloys

Heat treatment and microscopic examination were continued on Battelle samples of uranium alloy with Mn, Ni, Fe, In, Au, Ti, Cu, and Sn, and work was begun on alloys of Be, Pd, Ag, Th, Co, Al, Si, and Sb. Microscopic examination is made in the as received condition and after the following heat treatments: (1) samples air cooled after holding for 15 minutes at 600 and 700°C, and (2) samples water quenched after holding 1 minute at 700° and 800°C, 15 minutes at 700°C, and 30 minutes at 800°C. Results of these examinations indicate that some grain refinement is obtained in the 1.0 atomic per cent manganese alloy after holding 1 or 15 minutes at 700°C; in the 0.01 atomic per cent Au, 1.0 atomic per cent Sn,

and in the 0.1 and 1.0 atomic per cent Co alloys water quenched after 1 minute at 800°C; and in the 1.0 atomic per cent Th water quenched from 1 minute at 700°C.

Vickers hardness measurements (30 kg. load and diamond pyramid indentor) have been made on over one hundred of the experimental uranium alloy samples. In general, it has been found that (1) longitudinal "as received" specimens are harder than transverse "as received" specimens, (2) hardness increases with alloy content, (3) specimens quenched from the beta phase have about the same hardness as "as received" specimens, and (4) specimens quenched from the gamma phase are harder than "as received" specimens. Brief data indicate that specimens quenched from 600°C are harder than "as received" specimens, and that air cooling from the beta phase gives a lower hardness than a quench from the beta phase. The hardest specimens to date have been the 1.0 per cent manganese sample quenched from the beta phase, and the 1.0 per cent iron sample quenched from the gamma phase.

X-ray Crystallography

Considerable effort was spent in trying to find a structure which would account for the eleven extraneous lines which have been found in certain uranium samples. Assuming that this structure is that of a more stable phase of uranium, cubic, hexagonal, and tetragonal forms were tried. None of these accounted for all of the lines. The body centered tetragonal structure seemed to hold the most promise as far as fitting the lines is concerned. The calculated density using the simple cell (four atoms per unit) is much too low. It is possible that a more complex unit cell will agree with the measured density, as well as fit the lines.

Specimens were prepared of transverse and longitudinal sections of (1) alpha rolled, annealed, (2) alpha-rolled, unannealed, and (3) alpha-rolled, heat-treated uranium. Tracings of these samples are now being made.

A preliminary Invention Report was made on an adjustable sample holder. A more detailed report is now being prepared.

Studies of Irradiated Materials

The original plan for the construction of long caves for use in experiments on irradiated materials has been abandoned in favor of small cell operation. Work is progressing on the design of these cells, and on the design of casks and equipment for these studies.

Investigation of Corroded Stainless Steel Rods

The Purchasing Section reported that a group of Type 309 stainless steel rods received from the Bethlehem Steel Company appeared to be unsatisfactory as received. Metallurgical examination indicated that some type of corrosion had begun on the surface, and two theories as to its cause have been suggested: (1) the pickling solution was not completely removed by rinsing and the acid is beginning to show its effect on the surface of the rods; and (2) the rods were not passivated after pickling.

Metallurgy & Control

Macroetching of one rod showed a peculiar effect in the center of the rod. It appeared that much segregation was present, but a microexamination of this section showed no such effect. Several surface defects, such as seams and scarfing marks, are being sectioned for examination.

Redox Corrosion Testing

One-month dynamic corrosion tests have been completed on stainless steels T-347, T-309-SCb, T-316-ELC, and T-318, in the as-received, as-welded, and welded heat-treated conditions, all in LAS-$Al(NO_3)_3$, LAX, and LBX-$Al(NO_3)_3$ Redox solutions. Three-month exposures have been completed in LBX-$Al(NO_3)_3$ and LAF Redox solutions, using these same alloy steels with identical fabrication conditions.

Arrangements were completed for the chemist in charge of this corrosion work to visit several large industrial laboratories in the east during November.

ANALYTICAL LABORATORIES

Work Volume Statistics

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

	September		October	
	Samples	Determinations	Samples	Determinations
Routine Control - 200	1874	3146	2160	3674
Routine Control - 300	1883	9539	1527	8320
Water Control - 100, 700	13512	25562	13512	25562
Redox Control	1991	6277	2266	7411
Process Reagents	731	1411	816	1530
Essential Materials	166	840	142	965
Special Samples	3299	8091	3462	7268
Stack Gas			90	207
TOTALS	23456	54866	23975	54937

200 Area Process Control

General

Responsibility for the filter analyses involved in the stack gas decontamination program was transferred from 222-U (Health Instrument Division laboratory) to 222-B (B Plant Control Laboratory). Changes in analytical procedures were made with the agreement of the Separations Technology Division. Considerable difficulty was experienced at first in dissolving the filters, but it subsequently was found that fuming nitric or concentrated nitric plus sodium dichromate gave complete dissolution and reproducible assays.

Metallurgy & Control

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

Laboratory	Ave. Geometry (%)	No. Tests
B Plant (222-B)	50.49	134
T Plant (222-T)	50.53	125
Isolation Bldg. (231)	50.53	48

The precision of the analytical results of 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:

Sample	Period Ending 9-30-48		Period Ending 10-31-48	
	Precision (±%)	Weeks Covered	Precision(±%)	Weeks Covered
8-1-MR	1.44	38	1.42	43
P-1	2.04	38	2.09	43
AT	2.00	12	1.97	17

It was planned that a separate detailed precision report on the 8-1-MR, P-1 and AT analyses would be issued on a monthly basis. The Statistics Group have assumed the responsibility for this report, since they normally make the necessary calculations.

The results of the synthetic 8-1-MR assays are tabulated below. The standard precipitation procedure (CA-2a) was used, and the per cent recovery based on 2.077×10^6 c/m/ml.

Month	Laboratory	Ave. Results ($\times 10^6$)	No. Assays	% Recovery
September	222-B	2.038	26	98.1
	222-T	2.045	15	98.5
October	222-B	2.048	23	98.6
	222-T	2.029	17	97.7

The standard iron solution used in the Isolation Bldg. Laboratory to check the chemical titration of plutonium was analyzed a total of 143 times during the month. There were 69, 44 and 30 results inside ± 1%, ± 2% and outside ± 2% of the assay value, respectively. The average precision for duplicate titrations was ±2.95% as compared to ± 2.23% for September. A summary of the results follows:

Assay Value	Group Ave.	% Diff.	Determinations	Precision (±%) Single	Precision (±%) Duplicate
10.76	10.84	+ 0.8	22	4.66	3.30
14.84	14.80	- 0.2	26	4.80	3.39
14.84	14.79	0.0	30	4.81	3.40
10.76	10.82	+ 0.3	38	3.81	2.69
10.18	10.24	+ 0.6	28	2.82	1.99

Metallurgy & Control Division

300 Area and Essential Material Control

General

At the request of the 300 Area "P" Division, samples of the retention pond are being tested for pH on a routine basis.

The introduction of Zirconite into the melt plant process has necessitated the determination of zirconium in uranium. A satisfactory method has been developed employing alizarin as a colorimetric reagent.

The Atlas "Weatherometer" has been placed in service, and accelerated weathering tests are now being made on a variety of protective coatings.

Redox Process Control

At month end, 88 people were assigned to the Redox Control Laboratories as follows: 76 in Building 3706, and 12 in training in the 100 Areas Laboratories.

Analytical Development - Redox

Thirteen LAW type samples have been analyzed polarographically for UNH. Calculations indicate that the standard deviation ranges from 1.7% to 13.1% in inverse proportion to the UNH concentration between 0.1 and 95 g/l of the salt.

It has been demonstrated that the first wave obtained in the polarographic reduction of UNH is equivalent to a transfer of one-half electron. Calculations of the diffusion coefficient using the Ilkovic equation confirm these data.

The reaction of Nichterle and Hudlicky (Coll. Cyechoslv. Chem Commus., 12, 661-7) for the colorimetric determination of ketones is being studied as a method for the determination of hexone. Preliminary results indicate that a satisfactory procedure may be developed.

Continued study of the Karl Fischer procedure for the determination of water in hexone has resulted in an improved method for determining the endpoint. With this technique, samples as small as 50 Lambda may be accurately analyzed.

The effect of iron on the determination of plutonium by procedure CA-2c was studied. It was found that ferrous iron, in the presence of fluoride, reduced U (VI) to U(IV) and the latter precipitated as the fluoride along with the plutonium and lanthanum. The interference was eliminated by oxidizing the iron to the ferric state by boiling with nitric acid. Plutonium was subsequently reduced with hydroxylamine before precipitation with LaF_3 as a carrier.

A method has been developed for the determination of sulfamate ion in the presence of iron, aluminum and uranium. The sulfamate is titrated in dilute phosphoric acid with sodium nitrite at 50-60° C. Since ferrous iron interferes, it is previously oxidized quantitatively with permanganate. In this way both constituents are determined on the same sample.

The conductimetric method for locating the endpoint of titrations has been found satisfactory for the determination of acids in organic solvents. However, it is not applicable to column samples because of their high salt concentrations.

Indications are that a satisfactory procedure for the colorimetric determination of mesityl oxide can be developed using a wave length in the ultra-violet region. Interference from MIBC has not been completely disproven, but this compound appears to be transparent in the desired wave length range.

Miscellaneous Analyses

An ASO, low-background, alpha counter was placed in operation. It was found experimentally that the background ranges between one-half to one count per minute, and that this is due to electrical disturbances that cannot be eliminated.

The rubeanic acid method for the determination of copper was tested and found to be of value. Information as to interfering elements is not yet complete.

Special Hazard Control

The finding of a highly contaminated piece of paper in the lunch room of the 222-T Laboratory was investigated. The source of this material has not been determined to date. The incident will receive wide publicity to forestall any similar occurrence there or in other laboratory buildings.

Replacements have been received for the contaminated benches in 222-T Laboratory. These will be installed within a few weeks.

A work order has been placed for the fabrication of filters for the vacuum lines in the Isolation Bldg. Laboratory. It is planned to discontinue the use of water aspirators to minimize the amount of liquid waste going to the 231 crib. The filters should protect the vacuum lines from contamination.

A new phosphate ion panel board was designed and fabricated by the Experimental Shop group. Several improvements have been incorporated; the most significant being that all operations after the original sample transfer are performed by remote control.

STATISTICAL STUDIES

Uranium Slug Distortion

A non-signficiant correlation coefficient of -0.0384 was obtained between diameter and length of 4" alpha rolled uranium slugs before exposure in the pile, and a highly significant correlation coefficient of -0.8680 between diameter and length was obtained after exposure.

An analysis of variance applied to the dimensions of uranium slugs after exposure showed highly significant diameter and length differences between slugs from different manufacturing lots, and between slugs fabricated from different shipments of rods. This indicates that slugs from different rod shipments may be expected to manifest different distortion under irradiation, and it introduces an additional uncertainty into the prediction of the pile behavior of slugs fabricated from any particular shipment of rolled rods.

An equation was fitted to data submitted by the Pile Engineering Section relating the percent of excessively warped slugs to total exposure of individual slugs.

Diffusion Measurements

From diffusion measurements submitted by the Pile Physics Section, estimates of diffusion length in the DR pile were obtained by fitting linear equations by the least squares method to the relationship between the radius and the logarithm of the product of the radius and neutron activity.

Van Stone Flange Corrosion

From data obtained in the annual sample inspection of Van Stone flange corrosion in the B and F piles, estimates have been made of both corrosion rate and the extent of corrosion now present. A forecast has been given the Pile Engineering Section of the time the pile can remain in operation before a complete inspection for Van Stone flange replacements throughout the entire pile will be necessary.

Chemical Research Data

Regression coefficients were determined for an equation relating temperature to the activity of hexone (ratio of partial pressure of hexone above a hexone-aqueous mixture to hexone vapor pressure).

An exponential equation was fitted to data submitted by the Chemical Research Section relating hexone solubility in water to temperature.

Using data from these equations (and several others previously reported), a new set of activity coefficients for hexone aqueous systems was computed. Quadratic equations were fitted to the relationship between temperature and solubility of hexone in aqueous solutions containing varying amounts of UNH, HNO_3, and $Al(NO_3)_3$.

Some additional work was done on the relationship between the viscosity of equilibrated aqueous and hexone phases, and the UNH concentration in the aqueous phase.

Metallurgy & Control Division

Analytical Laboratory Data

From data submitted by the Analytical Section, a calibration curve was determined (by the least squares method) for the polarographic determination of uranium.

The first of a series of monthly statistical reports of analytical precision and accuracy was issued, covering September 1948.

Current Problems

Statistics problems in process are: (1) diffusion lengths in the DR pile, (2) the relationship between the appearance and quality of slugs and their previous fabrication history, (3) calibration curves for the X-ray photometer, (4) additional Van Stone flange corrosion data, (5) critical size calculation for the Pile Physics Section, (6) extension of analytical laboratory precision and accuracy control, (7) control of dimensions of canned slugs, and (8) extended quality control program in 300 Area operations.

LIBRARY AND FILES

Plant Library

Work on the acquisition, cataloging, and circulation of books proceeded routinely. A large shipment of bound periodicals was received from the book bindery including runs of the American Journal of Physics, Comptes Rendus, and the Receuil des Travaux Chemique de Pays-Bas et de la Belgique, and other periodicals which will substantially add to the reference resources available in the library. In this connection, a "want list" was prepared by the library and circulated to a number of dealers in out-of-print periodical issues. As a result, approximately 80% of our incomplete volumes were completed, and the balance will probably be located with further searching.

It was decided to change the present basic filing system of the book catalog from a letter-by-letter method (originally selected as being easier for untrained help to learn) to a word-to-word method. The latter seems more acceptable to the users of the catalog. The catalog in the W-10 Branch of the library was completely changed over, and work was begun on its duplicate in the 300 Area library. This change will bring the filing method for the book catalog and the report catalog into line.

Fifty-three medical books were cataloged for the Kadlec Hospital library.

Two issues of The Information Bulletin were prepared, assembled and distributed.

Library statistics were as follows:

	September	October
Number of books on order received	130	185
Number of books fully cataloged	180	201

Metallurgy & Control Division

	September	October
Number of bound periodicals processed but not fully cataloged	125	251
Pamphlets added to pamphlet file	1154	300
Miscellaneous material received, processed, and routed (Included maps, photostats, patents, etc.)	30	50
Books and periodicals circulated	750	957
Reference services rendered	930	991

	Main Library	W-10 Branch	Total
Number of books	3379	1256	4635
Number of bound periodicals	2444	100	2544

Classified Files

Work on the receipt and issuance of documents proceeded routinely. A study of the basic Files' procedures continued, and a number of these were announced and developed during the month. A modification of the present HW numbering system to include all Hanford Works UNCLASSIFIED and RESTRICTED scientific and technical reports distributed off-site, either in accordance with the Standard Distribution List (M-3679) or by any other assigned off-site distribution, and UNCLASSIFIED and RESTRICTED manuals of a technical nature, was developed and information regarding its future use transmitted to personnel concerned with the issuance of such material. The current report routing procedures were revised to insure consistency of charge-out records in both Files units.

A first step towards the full integration of the current report abstracting service, which is proceeding smoothly, into a basic Files procedure was taken by establishing, in the 300 Area, a numerical report file for on-site technical reports. All reports and correspondence of technical significance, both issued and received, will be filed in numerical order using the card catalog as a reference key to this material. This procedure will be extended as quickly as possible to include the 700 Area Classified Files. Its full use will eliminate a basic difficulty in the Classified Files routines; i.e., the subject marking of highly technical material by a non-technically trained staff.

Following the submission some weeks ago to the Technical Information Division of the AEC at Oak Ridge of a complete list of our uncataloged reports (as pointed out in the August Monthly Report), a large shipment of index cards covering these was received and added to the card catalog.

Metallurgy & Control Division

A proposal outlining the need at Hanford Works for a centralized report processing and issue service, similar to that recently instituted by the General Electric Research Laboratory at Schenectady, was drafted and submitted for consideration.

The packaging of off-site mail, streamlined as reported recently by the addition of an automatic gummed tape dispenser, was further expedited by the receipt of pads of gummed pre-printed address labels covering all the addresses on the Standard Distribution List (M-3679) plus some others frequently used here.

The Files Assistance Unit prepared from their mail file a complete mailing list for the 300 Area which was distributed to those interested. This list, which it is planned to revise periodically, contained the name and room location of everyone receiving mail in the 300 Area, and will greatly assist in insuring that this mail is properly and adequately addressed.

Work statistics for the Classified Files were as follows:

	September	October
Documents routed	9109	8892
Documents issued	5497	5265
Reference services rendered	4609	5702

Files Assistance Unit statistics were as follows:

	September	October
Ditto masters run	759	712
Mimeograph stencils run	419	341
Ditto master copies prepared	40,275	36,930
Mimeographed copies prepared	30,041	19,023

MEDICAL DIVISION

OCTOBER 1948

General

The Medical Division roll increased from 516 to 532. All except four employees were replacements. Three of these were clerical workers needed because of the decentralization of accounting functions. The fourth was a health educator, which may be classified as a long delayed replacement.

Dr. Shields Warren, Dr. Alan Gregg, and the members of the A.E.C. Advisory Committee on Medicine and Biology spent two days at the project. Dr. Warren advised that studies to determine the effect of inhaling active particles by laboratory animals would be started at an early date in Rochester. Dr. H. L. Hardy, industrial physician at the Los Alamos project, visited this works for an exchange of ideas. Dr. P. A. Fuqua attended the A.E.C. General Information Meeting in Chicago on Medicine and Biology October 18th to 21st.

Dr. R. R. Sachs attended a three day conference on Poliomyelitis at Seattle. Dr. R. R. De Nicola spent a week in study at the Lahey Clinic in Boston.

Filters with an estimated efficiency greater than 99% are in operation in each of the 200 Areas, thus tremendously reducing the potential hazard. There was no evidence of injury to any employee during the month due to radiation.

No major serious complications have resulted from the 42 carbon tetrachloride cases reported last month.

Employee physical examinations and first aid treatments decreased slightly.

Absenteeism due to sickness remained low at 1.07%, though slightly higher than the previous month.

Twenty-three major and seventy-four sub-major injuries were treated. Of these, two major and four sub-major injuries were sustained by G.E. employees.

The monthly health topic was "Dental Care".

The average daily hospital census was 88, identical with the previous month but 40% higher than the census a year ago. The average hospital stay was 5.3 days as compared with 5.9 days a year ago

Clinic visits were 8824 as compared with 8472 for September and 4395 for October, 1947. The increase was thus 4% over the previous month and 100% over the previous year.

Dental clinic visits were 3446 as compared with 2783 in September, and 2431 in October, 1947.

A charge for ambulance service was started during the month, and increased revenue by $306.50.

General (Continued)

The incidence of communicable disease remained low.

The first conservation of hearing clinic was held on October 15th.

A provisional certificate of approval enables our social workers to license foster homes and to place children who are in need of temporary care outside their own homes.

In controlling mosquitoes in the area, a total of 20,000 gallons of 5% D.D.T. larvicide and adulticide was sprayed over 30,000 acres by means of ground equipment and aircraft during the season.

Little improvement has been noted in the sanitation of eating establishments due to the still existent limitations of space and facilities.

MEDICAL DIVISION

OCTOBER 1948

Plant Medical Section

Physical Examinations	September	October	Year to date
Pre-employment (G.E.)	317	256	3720
Annual	737	619	2582
Sub-contractors & food handlers	3476	3527	32139
Rechecks	335	547	5735
Interval Rechecks (Area)	601	545	7080
Terminations & Transfers (G.E.)	342	147	7197
Army & Government	23	31	261
Assist to A & H Ins., Clinic, Etc	0	0	0
Total	5831	5672	58714

Laboratory Examinations
Clinical Laboratory

Government	180	187	769
Pre-employment, terminations, transfers	12514	14065	153596
Annual	4485	4006	16080
Rechecks (Area)	3118	2996	36447
First Aid	258	262	876
Plant Visitors	0	0	12
Clinic	3780	3398	27890
Hospital	3106	3253	30444
Public Health (Inc. food handlers)	803	816	7418
Total	28244	28983	273534

X-Ray

Government	26	8	76
Pre-employment, terminations, transfers	1889	2343	26460
Annual	756	628	2659
First Aid	362	360	2976
Clinic	429	406	3349
Hospital	239	285	2284
Public Health (Inc. food handlers)	107	145	1730
Total	3808	4155	39534

Electrocardiographs

Industrial	326	255	1181
Clinic	13	19	125
Hospital	17	23	191
Total	356	297	1497

Allergy

Skin Tests	51	26	383

MEDICAL DIVISION

OCTOBER 1948

First Aid Treatments	September	October	Year to date
Occupational Treatments	2958	2880	28341
Occupational Retreatments	11251	10019	88291
Welfare Treatments	6333	6682	60266
Total	20542	19581	176898

Absenteeism Investigation Report

Total number calls requested	14	29	219
Total number calls made	14	29	219
Number absent due to illness in family	0	0	1
Number not at home when call was made	0	0	3

General

No major serious complications to date have resulted from the 42 carbon tetrachloride cases seen in September.

One new first aid station began operation in the 200-E area for construction employees. The temporary building was converted from an existing building and is located in the immediate vicinity of the tank farm construction.

One member of the section was sent to the A.E.C. General Information Meeting in Chicago, held October 18th to 21st. The meeting was concerned with biology and medicine. Specific problems discussed included "Berylliosis", "Low Dosage Radiation Exposure", and "New Permissible Exposure Levels". A report of all discussions was made to our entire group of industrial physicians.

Dr. Harriet L. Hardy of Los Alamos visited this plant during the month. Exposure problems of both locations were compared and discussed.

The total number of examinations done during October decreased from 5831 in September to 5672. The 1947 figure was 5268. First aid treatments also decreased slightly from 20,542 in September to 19,581 in October. The 1947 figure was 9,031.

	September	October
Major injuries were as follows:		
General Electric	1	2
Atkinson & Jones	11	18
Nettleton-Sound	1	0
Morrison-Knudsen	0	1
McNeil Construction	0	2
Sub-major injuries were as follows:		
General Electric	4	4
Atkinson & Jones	55	64
Nettleton-Sound	1	0
Morrison-Knudsen	2	2
McNeil Construction	0	4

MEDICAL DIVISION

OCTOBER 1948

General (continued)

The health topic for the month dealt with dental care. Material on this subject was distributed throughout the plant for discussion.

Absenteeism for the month was as follows:

Total absenteeism weekly employees all causes	1.91%
Total absenteeism weekly employees sickness only	1.07%
Total days lost by male employees due to sickness	1119
Total days lost by female employees due to sickness	670
Total days lost due to sickness	1789

Village Medical Section

Clinic Visits	September	October	Year to date
Medical	1758	1967	14323
Pediatrics	839	886	7712
Surgical	827	764	8214
Gynecological	738	692	5268
Obstetric (new)	94	98	884
Obstetric (recheck)	801	677	6737
Venereal Disease	518	443	6353
Ear, Nose & Throat	338	400	3459
Eye	263	270	2823
Visits handled by nurses(Hypo, dressings)	1508	1916	11413
Night clinic visits	788	711	7701
Total	8472	8824	74887
Total clinic visits per day	326	345	288
Seen in Well-baby Clinic	386	234	2417

Home Visits

Doctors	217	195	2202
Nurses	130	113	1510
Total	347	308	3712

Kadlec Hospital

Census

Admissions	499	529	4985
Discharges:			
Surgical	142	128	1254
Medical	109	98	1014
Obstetric & Gynecologic	110	123	1023
Eye, Ear, Nose & Throat	50	52	591
Pediatrics: Children	29	49	445
Newborn	67	74	644
Total Discharges	507	524	4981

MEDICAL DIVISION

OCTOBER 1948

Kadlec Hospital	September	October	Year to date
Patient Days	2668	2720	26888
Average Stay	5.3	5.1	5.3
Average Daily Census	88.9	87.7	88.2
Discharged against advice	2	6	32
One-day cases	96	79	821
Operations			
Transfusions	60	48	402
Eye, Ear, Nose & Throat	28	36	302
Dental	3	2	13
Casts	21	21	197
Minors	53	70	610
Majors	64	55	500
Vital Statistics			
Deaths	3	5	35
Deliveries	65	73	638
Stillborn	1	1	6
Physiotherapy Treatments			
Clinic	75	90	1218
Hospital	95	50	675
Industrial: Plant	200	187	3634
Personal	80	50	496
Total	450	377	6023
Pharmacy			
Number of prescriptions filled	3298	3448	30568
Patient Meals			
Regulars	3390	3323	34777
Lights	64	117	564
Softs	1307	1200	14927
Surgical Liquids	87	77	897
Tonsils & Adenoids	68	116	835
Specials	980	1311	8370
Liquids	319	250	3605
Total	6215	6394	63975
Cafeteria Meals			
Breakfast	40	6	113
Noon	2611	2701	25311
Night	368	393	3517
Total	3019	3100	28941

MEDICAL DIVISION

OCTOBER 1948

Nursing Personnel	September	October
First Aid Nurses	55	57
Clinic Nurses	17	17
Public Health Nurses	13	12
Hospital General Nurses	77	76
Aides & Orderlies	56	56
Total	218	218

General

529 Patients were admitted to the hospital, which is a 7% increase over September, and 42% over one year ago. The average census was 88, no change from the previous month.

Clinic visits increased by about 4%, and were 100% higher than a year ago.

Personnel in the division increased from 516 to 552. There were four additional employees, the rest were replacements. Three of the additional employees were clerks added to accounting, and one was a nurse Health Educator. The accounting clerks were added due to the decentralization of accounting functions. We have been seeking a health educator for many months.

A charge for ambulance service was started during the month, which increased our revenue $306.50.

Public Health Section

Administration	September	October	Year to date
Newspaper Articles	22	26	180
Committee Meetings	6	8	34
Attendance	20	35	164
Staff Meetings	6	4	36
Lectures & Talks	0	0	38
Attendance	0	0	2191
Conferences	6	40	117
Attendance	35	75	331
Radio Broadcasts	0	0	3

Immunizations

Cholera	0	0	3
Diphtheria	434	52	2453
Influenza	0	173	202
Rocky Mt. Spotted Fever	2	0	45
Schick Test	0	0	1
Smallpox	151	33	824
Tetanus	61	26	272
Typhoid	0	0	668
Whooping Cough	57	0	332
Total	705	284	4800

MEDICAL DIVISION

OCTOBER 1948

Social Service

Fourteen new cases were admitted to Social Service during October. This figure added to the 76 cases carried over from September made a case load of 90. Twenty-nine cases were closed, leaving 61. Sources of referral included the following:

Public Health	8
Interested Persons	2
Doctors	2
Children's Orthopedic Hospital	1
Other Agencies	1

A provisional certificate of approval as a child placement agency was granted by the State of Washington Department of Social Security. This will enable the social workers to license foster homes and to place children who are in need of temporary care outside their own homes. If there proves to be considerable need in the community for this service, at the end of the six months' provisional period, the certificate will be made permanent.

Sanitation	September	October	Year to date
Inspections	379	403	2531
Bacteriological Laboratory			
Treated Water Samples	195	236	2375
Milk Samples (Inc. cream & ice cream)	112	119	1414
Other bacteriological tests	295	367	3748
Total	602	722	7535
Communicable Diseases			
Chickenpox	0	10	102
German Measles	9	6	95
Gonorrhea	25	27	203
Impetigo	8	0	16
Influenza	0	8	74
Measles	3	5	752
Meningococcic Meningitis	0	0	2
Mumps	6	3	987
Pediculosis	1	3	8
Pinkeye	2	6	16
Poliomyelitis	0	1	1
Ringworm	1	4	8
Scabies	0	3	40
Scarlet Fever	0	0	18
Syphilis	39	35	304
Thrush	0	0	2
Tuberculosis	0	0	12
Vincent's Infection	4	3	13

MEDICAL DIVISION

OCTOBER 1948

Communicable Diseases (continued)	September	October	Year to date
Whooping Cough	0	0	48
Malaria	0	0	1
Food Poisoning	0	0	7
Total	98	114	2709
Total number field nursing visits	692	660	12369

General

During the month, communicable and morbidity visits continued to remain the same. The first conservation of hearing clinic was held on October 15th at Kadlec Hospital.

All new water lines and individual house service lines will be sterilized and approved by bacteriological samples and analyses prior to releasing the houses for occupancy.

A total of 20,000 gallons of 5% D.D.T. larvicide and adulticide was sprayed over 30,000 acres by means of ground equipment and aircraft. The cost of new equipment was more than offset by the savings in man hours and materials.

Little improvement has been noted in the sanitation of eating establishments due to the still existent limitations of space and facilities.

Dental Section	September	October	Year to date
Patients treated	2783	3446	29897

MEDICAL DIVISION PERSONNEL SUMMARY

October 31, 1948

AREAS	Physicians	Dentists	Nurses	Aides & Orderlies	Technicians	Office Workers	Others
100-DR			4				
100-H			3				
234-5			2				
White Bluffs			3				
Pasco			1				
101			1				
3000	12	2	10	6	9	34	12
100-B			)			)	
100-D			5)		2*	1)	
100-F			)		2*	)	
200-E			3		2*	2)	
200-W			3		2**	)	
300			2		2**	1	
Plant General	7		18				
700-1100	25	11	107	50	28	96	72
Total	44	13	162	56	39	134	84

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

Number of employees on payroll:

Beginning of month	516
End of month	532
Net increase	16

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HEALTH INSTRUMENT DIVISIONS

OCTOBER 1948

Summary

The force increased by nine. Five Class I Special Hazards Incidents were reported, none with serious consequences.

The Operational Division reported survey findings in the normal pattern. New was the release of large quantities of S^{35} to the Columbia River from condensate from the Gas Purification Building, following a water leak. Conservatism dictated the retention of this activity until better permissible limit data could be developed.

Another incident, which pointed up the weakness of preparation against a major disaster, was the release of 300 Area retention pond water to the Columbia River.

In the Control and Development Division, samples of water, air, and vegetation showed no major deviation from previous findings. There was continued difficulty with low yields in the plutonium analysis of urines, but no indication of positive results. Conversely, tests for uranium in urine of 300 Area employees were strongly positive, reflecting the continued substandard conditions in uranium metal fabrication.

Biology Division findings, already limited by totally inadequate laboratory facilities, were further reduced by
(1) down time of the 100-F Area Pile, affecting the fish program,
(2) predator raids on stock.

It was shown that rodents probably contributed to the weakening of the 300 Area pond walls.

HEALTH INSTRUMENT DIVISIONS

OCTOBER 1948

Organization

The composition and distribution of the force as of 10/31/48 was as follows:

	100-B	100-D	100-F	200-W	200-E	300	700	P.G.	Total
Supervisors	1	1	3	8	5	16	5	0	39
Engineers	4	4	7	11	12	7	1	0	46
Clerical	0	0	0	1	0	4	4	0	9
Others	8	14	16	57	32	53	11	16	207
Total	13	19	26	77	49	80	21	16	301

Number of Employees on Payroll	October
Beginning of Month	292
End of Month	301
Net Increase	9

Additions to the roll were seven technical graduates, three clerks, a steno-typist, a moto-messenger, and the divisions' senior secretary (return to roll). Deletions were an engineer, transferred to the Village operation, one technologist, and two clerks terminated.

There has been internal pressure to increase the clerical force. Investigation has shown three valid reasons for such increases.

(1) removal of area clerical pools, and natural reluctance of other divisions to assign clerical time to H.I. work,
(2) relief of more highly skilled employees from incidental clerical work in the field,
(3) overall continuing increase in work load.

General

Initial results on active particle deposition, following completion of the sand filter in the 200-W Area showed a reduction by a factor of 4 only. Conclusions from this would be premature, but it is tempting to surmise that trouble may still be anticipated either from particles emitted from the stack itself, or redistributed after initial deposition.

Health Instrument Divisions

The H. I. training school operated a course of 26 lectures, with area visits and laboratory work for 19 new technical graduates, 2 other H.I. Divisions members, and 6 supervisors from other divisions.

The A.E.C. Advisory Committee on Biology and Medicine visited the site to discuss the present radiation protection and biology programs, and to review the proposed program of laboratory construction. Prior to this visit, an intensification of the active particle dissemination had led to a temporary cessation of some operations. The advice of this Committee was invoked to assess the operating risk until completion of the sand filters. This discussion has been documented in detail. (H.M. Parker to File: "Action taken with respect to apparent enhanced active particle hazard" 10/25/48, HW-11348 and GE-H-13488).*

During the month, eight members of the H.I. Divisions visited other locations. G.H Whipple reported his extrapolation chamber measurements in Chicago, and H.M. Parker reported on "Insurability of Atomic Energy Workers" in New York.

Five Class I Special Hazards Incidents occurred. Three involved personal contamination, one improper disposal of contaminated paper, and one improper removal of equipment from a danger zone. There was no actual significant exposure in any of these cases.

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* Because this document contains a verbatim transcription of the deliberations of a visiting committee it is not available for general reading.

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Health Instrument Divisions

OPERATIONAL DIVISION

100 Areas

General Statistics

	September				October				1948
	B	D	F	Total	B	D	F	Total	To Date
Special Work Permits	565	522	1195	2282	601	731	940	2272	20,677
Routine & Spec.Surveys	411	399	496	1306	472	380	518	1370	10,488
107 Effluent Surveys	56	82	49	187	93	80	23	196	1,697
Air Monitering Samples	103	31	102	236	104	42	172	318	*

* 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)	100-275	275	0-275
Average beta dosage-rate	(mrep/hr)	0.7	1.0	1.1
Average gamma dosage-rate	(mr/hr)	1.8	1.9	2.2
Average total dosage rate	(mrep/hr)	2.5	2.9	3.3
Average integrated dose in 24 hrs.	(mrep)	60	70	79
Maximum integrated dose in 24 hrs.	(mrep)	79	82	89
Maximum integrated dose in 24 hrs.-1948	(mrep)	94	115	101

Dirt and algae were removed from the north side of the 100-B Retention Basin and deposited in a trench about 100 feet south of the basin. Contamination spread was confined to the equipment and the ground between the basin and the trench.

100-B Area

A section of the leaky tube replaced in September was cut to make an 8 inch section containing the hole. The actual cutting and subsequent inspection of the section were accomplished with no over-exposure to personnel. Two special request pieces of the type removed from this tube were found ruptured in the storage basin. It was not possible to determine if the samples inside were intact or not.

During sample removal at the "B" experimental hole, momentary exposure-rates as high as 700 mr/hr were encountered. Contamination from swabs, retrieving rods, and other equipment was spread to the paper covering over the experimental level grating and to the zero level below. No personnel contamination was reported. Surveys at this hole during pit operation showed a slow neutron flux of 3600 $n/cm^2/sec$ and a fast flux of 200 $n/cm^2/sec$.

A piece of Kraft paper, which had evidently blown out of the burial trench, was found outside of the burial ground fence. This paper showed a surface dosage-rate of 8 mrep/hr. Other loose paper was also observed in the trench.

A fast neutron survey at the rod enclosure around the vertical rods revealed a maximum flux of 140 $n/cm^2/sec$. No fast neutrons were detectable at the top, far edge of the pile at the place where beams are observed in the other areas.

100-D Area

A 1-3/4 inch beam was observed at the "A" experimental hole, following the installation of a special gun barrel assembly. The intensity of the beam was estimated at about 800 mr/hr in addition to an uncorrected fast neutron flux of about 850 $n/cm^2/sec$ The equipment was later removed and stored on the zero level prior to burial. Exposure to personnel was maintained at a low level during all operations, and no spread of contamination was experienced.

Special request sample boxes and casks returned from the consignee showed gross alpha contamination. Surveys indicated the following maximum concentrations:

Outside of boxes	-	25,000 d/m
Inside of boxes	-	370,000 d/m
Outside of casks	-	220,000 d/m

Protective clothing is required for the handling of these boxes and casks in the area, but no precautions are taken prior to arrival here.

During normal discharge operations, a "P" Division operator contaminated his shirt sleeve to the extent of 2,000 d/m. The shirt was confiscated.

100-F Area

A water leak in process tube 3169 caused a shutdown of the pile on 10/20/48. The condensate from the driers in the Gas Purification Building was allowed to follow the normal route into the Columbia River until samples could be

analyzed by the H.I. Methods Laboratory. When results indicated a concentration of 29 mc/liter of S^{35} in the condensate, the "P" Division was requested to collect and bury all further condensate. It is estimated that approximately 1.7 curies of S^{35} entered the river during the 12-hour period beginning at 7:00 A.M. on 10/20/48. It is presumed that the leak in the tube was caused by the rupture of a special request piece.

Difficulty was encountered when attempts were made to start up the pile, and the water coolant in the "B" and "D" experimental holes was replaced with air. The change was accomplished without incident, but gross contamination was later apparent over all of the far side areas. High shoe counts, all easily reduced, were reported by the men who entered the area to start the water flow back into the lines.

A subsequent air filter sample gave a dosage-rate of 125 mrep/hr. The H. I. inspector who took the sample at the entrance of the zero level had hand contamination which jammed the five-fold counter, and had contamination up to 2,000 c/m on his coat and sweater. Both hands and clothing were successfully decontaminated, and smears of the nose and throat showed no significant read-

Health Instrument Divisions

200 Areas, T and B Plants

General Statistics

	September			October			1948
	T	B	Total	T	B	Total	To Date
Special Work Permits	314	468	782	348	514	862	7612
Routine & Special Surveys	540	300	840	430	296	726	6260
Air Monitoring Samples	523	478	1001	688	694	1382	9647
Thyroid Checks	167	84	251	122	104	226	2967

Canyon Buildings

In the T Plant, the canyon ventilating exhaust fans were shut down for about forty hours during the work of connecting the sand filter to the present ventilating system. Significant air contamination was noted in the canyon during this period with a maximum concentration of about 2.5×10^{-5} μc f.p/liter about 24 hours after fan shutdown. Significant air contamination was noted during this period in the operating gallery and 271-T Building, but decay measurements on the samples showed that most of this activity was due to the coincidence of above normal short-lived natural radioactivity in the air.

Continued work on canyon deck decontamination was done with maximum exposure-rate of 750 mrep/hr. Vegetation over the old waste line break in the R-19 danger zone showed absorbed activity with a maximum external dosage-rate on plants of 85 mrep/hr surface including 2 mr/hr at 2 inches.

In the B Plant, continued decontamination of the canyon deck is in progress, with maximum dosage-rates of 35 rep per hour surface including 500 mr/hr at 2 inches encountered. General contamination of the craneway floor has been noted, apparently resulting from the general deposition of air-borne activity, with sweepings showing dosage-rates of up to 40 mrep/hr surface.

During an eight hour test of reduced canyon exhaust air flow (15,000 cfm), significant general contamination of the canyon air was noted, with a maximum concentration of 4.1×10^{-6} μc f.p./liter reported during normal process operations. Other significant air samples were recorded during remote installation of cell exhaust air filters. During the fan shutdown for the installation of the sand filter ductwork, a maximum concentration of 6×10^{-6} μc f.p./liter was obtained in the canyon, but no significant air contamination was noted in the operating gallery. When the sand filter was placed in operation with an estimated flow of 25,000 cfm through the series connected fans, no significant reduction in the canyon air contamination was noted until the pipe trench block cracks were covered to cause greater flow through the cells. Approximately 48 hours after the fan was started, the canyon air continued to show concentrations of 1 to 2×10^{-6} μc f.p./liter. The canyon air condition was corrected when the make-up damper line was closed.

Control Laboratories

In the T Plant, 142 items, not regulated with respect to handling, were found contaminated on surveys by Technical and Health Instrument Division personnel. In addition, 18 contaminated floor locations were reported. A piece of absorbent paper was found in the lunch room trash can which showed a dosage-rate of about 5 rep per hour surface including 30 mr/hr at 2 inches. Thirty-two cases of fission product and forty-two cases of product hand contamination were reported, and all were successfully decontaminated.

In the B Plant, 206 items, not regulated with respect to handling, were found contaminated on surveys by Technical and Health Instrument Divisions personnel. In addition, 74 contaminated floor locations were reported. Seventeen cases of fission product and eleven cases of product hand contamination were reported, and all were successfully decontaminated. Stack gas filter samples are now being analyzed in the control laboratory with exposure-rates maintained below 100 mrep/hr.

Concentration Buildings

In the T Plant, an instrument mechanic received low-level hand contamination when he handled a roll of tape which was stored on the F-10 danger zone fence. Decontamination was successful. Investigation showed a maximum reading of 320,000 d/m of product on the roll of tape, and it was indicated that the tape had been used in the F-10 cage previously. While an S Division operator was papering the floor of the F-10 cage, the F-10 tank drip cup was dislodged, and the resultant splash caused gross product contamination of the wrist, ears, neck, and back of head. Maximum readings of 2,000,000 d/m on the wrist were reduced to 500 d/m, and readings of up to 50,000 d/m on the neck, ears, and head have been reduced to 1500 d/m, with further cleaning being limited by tender skin conditions. Both of these incidents have been investigated as Special Hazards Incidents, Class I. The removal of the orifice from the C-4 tank vent line was done with a maximum dosage-rate of 8.6 rep per hour surface, including 270 mr/hr at 2 inches, and the job was completed without contamination spread.

In the B Plant, the floor under the F-2 to F-10 gang valve steam vent in the operating gallery showed product contamination of 60,000 d/m, while the washer from this valve showed 25,000 d/m when removed. A valve in the C-8 to 241 gang valve showed 18,000 d/m during maintenance work. Manifolding of all gang valve vents back to the cells, as has been done in the canyon buildings, is under consideration. A floor spot of about 0.57 μg Pu was found just outside of the F-10 chained area.

Stack Areas

In the T Plant, the ductwork to install the sand filter in the ventilation system was accomplished with maximum planned exposures of 100 mrep per day. Some condensate leaked from the fans after temporary blanks were removed,

causing high dosage-rates until shielded with lead and plywood. Readings at the inlet flanges of the fans when opened showed dosage-rates of up to 35 rep per hour at about 6 inches.

In the B Plant, the work of sand filter tie-in was done with maximum exposure rates of 6 rep per hour and maximum planned exposures of 100 mrep per day. The incidence of rain on the second day of the work, and the need to use personnel not completely familiar with special hazards control techniques, resulted in considerable contamination spread. Twelve men who wore complete protective clothing still showed hand and leg contamination of 1000 to 60,000 c/m when surveyed after leaving the job. One employee who wore three pairs of coveralls inadvertently touched a knee to some contaminated paper on the ground, causing dosage-rates of 7.5 rep per hour surface on the outer coveralls, 500 mrep/hr surface on the innermost coveralls, and contamination of 100,000 c/m on the knee. In all cases survey and removal of contaminated clothing was done immediately after leaving the job, and all cases of skin contamination were successfully decontaminated.

Waste Disposal Areas

In the B Plant, the disposition of concentration building waste, which has been through the 201-B tank with overflow to the cribs, was altered by a connector change in the 252-B diversion box, to a cascade flow through tanks 204-B, 203-B, and 202-B, followed by overflow to the cribs.

The removal of discarded connectors from a carrier box to the burial ground trench resulted in gross contamination spread. Dosage-rates of up to 35 rep per hour with 5 roentgens per hour at 16 inches were found on the ground, and the floor of the crane used showed contamination of up to 16,000 c/m. Skin contamination of up to 5,000 c/m, probably attributable to the careless handling of protective gloves, was successfully reduced. Removal of such equipment from the carrier box to allow reuse of the box is considered questionable economy, when the increased radiation hazards involved are considered.

North Areas

In the B Plant, autoradiographs of Dustfoe filters worn for the major portion of each working day for a week on the Sand Filter construction job showed an average deposition of about one particle per filter. Spot surveys of other Dustfoe filters in the B Plant, worn only intermittently, showed an average deposition of about 1 particle per mask per month.

Twenty-four hour autoradiographs of air sample filters obtained during October showed the following approximate particle counts:

Location	Approx.Total Cu.Ft. Air	Approx. Particle Count
221-B Canyon	102,000	more than 3,000
222-B Lab.	33,000	43
224-B Bldg.	46,000	10
221-B Crane Cab	25,000	3
221-B Galleries	81,000	1

All thyroid counts in both areas were below the warning level.

The Isolation Building

General Statistics

Special Work Permits, October - 16
Special Work Permits, 1948 to date - 348

Air Monitoring

There were 217 spot air samples taken, of which four were above 10^{-11} µg Pu/cc. Two of these were taken in cells during SWP work when masks were worn and showed a maximum of 4×10^{-11} µg Pu/cc. The two others taken during normal operations showed a maximum of 1.8×10^{-11} µg Pu/cc. Sixteen continuous Little Sucker samples were all less than 4×10^{-12} µg Pu/cc. Eleven continuous samples of the 903 exhaust system air showed 2.4×10^{-12} µg Pu/cc as a maximum concentration.

Surface Contamination

A total of 409 items, not regulated with respect to handling, were found contaminated on surveys by Technical, Health Instrument, and 6 Division personnel. Thirty-three items showed greater than 20,000 d/m, of which 10 showed greater than 80,000 d/m. In addition, a total of 64 contaminated floor locations were reported, 40 of which were in the laboratories, and 24 in the operating cells. The maximum amount involved was 0.25 µg Pu in Cell #4.

All thirteen cases of product skin contamination were successfully reduced. The maximum individual amount involved was 0.13 µg Pu.

Gamma Radiation

P.R. Container	9 mr/hr (maximum)
Process Hood	2 mr/hr (maximum)
S.C.	4.6 mr/hr (maximum)

Laundry Monitoring

A total of 44 spot air samples and 44 continuous Big Sucker air samples were taken during Plant Laundry operations. The maximum concentration, calculated as plutonium, was 1.3×10^{-10} µg Pu/cc, taken at washer #2 during the processing of clothing from 231 Building and 300 Area.

The 300 Area

General Statistics

	September	October	1948 To Date
Special Work Permits	342	280	2786
Routine & Special Surveys	162	135	1378
Air Monitoring Samples	109	116	1061

Metal Fabrication Plant

Sixty-nine of eighty-five air filter samples were above 5×10^{-5} µg U/cc concentration as follows:

	No. Taken	No. above 5×10^{-5} µg U/cc	Maximum Concentration µg U/cc
Melt Plant	46	45	1.0×10^{-2} In burnout room
Oxide Burner	3	1	5.6×10^{-4} Loading & start-up
Chip Recovery	14	8	4.0×10^{-4} At press-operator's position
Machining	10	3	7.3×10^{-5} Roller turner lathe
Vicinity of 314	12	12	7.6×10^{-3} At furnace room exhaust fan

Early in the month three leaks were reported in the east wall of the waste pond. The water disappeared into the ground at the foot of the dike and reappeared about four feet from the river. Emergency repairs to the dike were made and plans for a new pond started immediately. At about 2:00 P.M. on 10/25/48, a large section of the dike at the northwest corner of the pond collapsed. The resulting rush of water flooded the adjacent area and ran east into the Columbia River. A temporary dike was built by 4:30 P.M. and prevented further direct flow into the river, but all of the water from the pond had disappeared by the next morning. Sample results, as far as available, indicated uranium as the only contaminant.

Contamination to the extent of 750 mrep/hr at the surface was found on the concrete pad and ground just south of the 314 building. Decontamination and dirt removal lowered the dosage-rate to 50 mrep/hr. The surfaces were recontaminated when buckets of hot oxide were placed here for cooling.

Technical Building

Two air filter samples taken in room 9 were above 5×10^{-5} µg U/cc. The maximum concentration of 6.3×10^{-4} µg U/cc was reported on a sample taken during the cutting of a uranium piece. Other samples taken were either below 5×10^{-5} µg U/cc or 2×10^{-11} µg Pu/cc.

A sample of oil from the vacuum pumps connected to the 3706 process hoods was sent to the H. I. Methods laboratory for analyses. Results showed a concentration of 0.04 μg Pu/liter.

A spill of NH solution in room 6 contaminated the floor to the extent of 10,000 d/m. Decontamination was partly successful.

321 Building

Five of fifty nine air filter samples taken were above 5×10^{-5} μg U/cc concentration. All were obtained in A cell. The maximum result of 2.5×10^{-3} μg U/cc was obtained while the A-2 centrifuge was in operation.

Plant General

A total of 88 frames exposed on the reservation and at Benton City and Pasco showed a deposition rate of 4.4×10^{10} particles per month. Frame studies completed in the 200 Areas indicated deposition rates of 1.4×10^{9} particles per month in 200-East, and 2.2×10^{9} particles per month in 200-West.

Sixteen particle traps exposed at Off-area locations during September and October were studied and positive results found as follows:

Eltopia	-	16.0 psf/month	Spokane	-	0.6 psf/month
Othello	-	0.9 " "	Coulee Dam	-	1.9 " "
Connell		4.7 " "	Ephrata	-	1.2 " "
Mesa		2.6 " "	Ellensburg	-	0.6 " "
Beverly		3.0 " "	Yakima	-	0.6 " "
Ritzville		2.9 " "	Zillah	-	1.2 " "
Sprague		43.0 " "	Prosser	-	1.5 " "

Particle inhalation, estimated by the use of filters, showed the following: (September results are included for comparison)

Location	Inhalation rate particles per month	
	Sept.	Oct.
200 East Area Gatehouse (outside)	20.0	30.0
200 East Area Gatehouse (inside)	5.0	6.0
B Plant Excl.Gatehouse (outside)	82.7	45.0
200 West Area Gatehouse (outside)	32.5	50.0
200 West Area Gatehouse (inside)	8.0	35.0
T Plant Excl.Gatehouse (outside)	25.0	30.0
3 ft. level Meteorological Tower	14.0	10.0
150 ft. level " "	32.5	25.0
250 ft. level " "	35.0	50.0
400 ft. level " "	35.0	40.0
100-F Area	3.0	3.5
100-D Area	1.5	2.5
100-B Area	1.0	3.8
Benton City	0.9	4.8
Richland	1.0	5.0

Health Instrument Divisions

Air samples taken inside various 200 Area buildings showed the following estimated particle inhalation rates.

Location		Particles inhaled per month
B Plant Canyon Operating Gallery	(4 samples)	15
B Plant Canyon Pipe Gallery	(1 sample)	4
222-B, Rm.1	(2 samples)	600
222-B, Rm. 7	(3 samples)	38
B Plant Concentration Bldg. Pipe Gal.	(1 sample)	11
B Plant Concentration Bldg. F-10	(1 sample)	44
B Plant Concentration Bldg. Operating Gal.	(2 samples)	429
2704-E Admin.Bldg.	(5 samples)	23
West Area Maintenance Shop	(4 samples)	24
East Area Maintenance Shop	(5 samples)	32
622 Bldg. Meteorological	(4 samples)	9

Air filters in Off-area locations showed the following results:

Location	Particles inhaled per Month
Spokane, Wn.	0.90
Mullan Pass, Mont.	none
Mt.Rainier, Wn.	Discontinued for winter season
Meacham, Ore.	1.80
Stampede Pass, Wn.	0.18
Lewiston, Idaho	0.36

Five filters which had been previously filmed for 74 hours were exposed to film for a 4-month period with the following results:

Location	Date	74-hr. Filming	4-month Filming
2701-E	5/7/48	10 particles	150 particles
2701-E	5/14/48	26 "	110 "
Tower, 350 ft.	5/21/48	10 "	75 "
Tower, 400 ft.	5/21/48	7 "	45 "
Richland	5/18/48	0 "	0 "
Blank	---	0 "	0 "

Health Instrument Divisions

PERSONNEL METERS

	100-B	100-D	100-F	E&N 200	200-W	300	Total	1948 To Date
Pencils								
Total Pencils Read	9,897	11,607	14,628	35,964	43,985	40,859	156,940	1,375,837
No. of Single Readings (100 to 280 mr)	40	45	22	59	77	156	399	4,373
No. of Paired Readings (100 to 280 mr)	0	0	0	0	0	1	1	34
No. of Single Readings (Over 280 mr)	95	116	63	87	107	345	813	8,936
No. of Paired Readings (Over 280 mr)	1	1	1	0	1	7	11	136
Paired Readings Lost	0	2	3	1	2	2	10	60

No significant pencil result was confirmed by the badge result. Investigation of lost readings where required showed no possibility of an over-exposure.

Health Instrument Divisions

Badge Resume, Construction Areas

	105-DR	241-TX	115-KV 384	241-BY	Total	1948 To Date
Badges Processed	7,542	5,423	421	909	14,295	152,381
No. of readings (100 to 500 mrep)	42	8	1	3	54	794
No. of readings (Over 500 mrep)	0	0	0	0	0	75
Lost Readings	2	0	0	1	3	109

Lost readings were accounted for as follows:
Lost badge - 2
Open window exposed to X-ray - 1

Badges

	100-B	100-D	100-F	200-E	R.R.T. 200-N	200-W	300	Total	1948 To Date
Badges Processed	1,770	2,140	2,245	2,919	478	3,636	8,487	19,439	224,251
No.of readings (100 to 500 mrep)	2	15	25	50	1	38	298	429	2,640
No.of readings (Over 500 mrep)	0	0	0	1	0	1	0	2	41
Lost readings	0	3	1	5	0	4	3	16	95

The result of over 500 mrep in the 200-W Area was a recovered lost badge, and occurred when a badge was lost near the stack fans and remained in the Danger Zone for several hours. Investigation showed no possible overexposure to the employee. The high result in the 200-East Area was not confirmed by pencils, or finger films. Investigation disclosed that the employee worked as a member of a two-man team and all Danger Zone entries were made together. Finger film results and pencil results for both men were the same, and the others' badge result was 0-0. No contamination was found on the badge. The cause of this apparent exposure anomaly was undetermined.

Lost readings were accounted for as follows:

Lost in processing	4
Damaged film	3
Lost badge	5
Stuck film	1
Badge dropped in water	1
Light leak	2

Total 1948 badges to date Operations - 224,251
" " " " "- Construction - 152,381

Grand Total - - - - - 376,632

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Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

Health Instrument Divisions

Investigation of lost readings showed no possible overexposure.

In addition, 2,192 items of non-routine nature were processed. The 1948 total to date is 19,642.

down the river and of those taken from the Pasco-Kennewick water indicated <15 μg/liter of uranium contamination. These locations are being monitored daily for confirmation of the results of the original analyses. To date, analyses of pond water and river water indicate <2 dis/min/liter of alpha activity from plutonium.

Atmospheric Monitoring

The integrons and "C" Chambers indicated average dosage rates as follows:

Location	Integrons (mrep/24 hours)		C Chambers (mrep/24 hours)	
	September	October	September	October
100-B Area	0.7	0.2	0.3	0.3
100-D Area	1.2	0.2	0.3	0.4
100-F Area	1.0	0.8	0.4	0.4
200-W Area	0.2	0.4	0.3	0.3
200-E Area	0.8	0.5	0.6	0.5
Riverland	1.5	0.6	---	---
Hanford	1.7	1.3	---	---
300 Area	0.6	1.5	0.4	0.5
700 Area	1.2	<0.1	---	---
Kennewick	0.3	<0.1	---	---
Pasco	0.5	0.2	---	---
Benton City	0.5	0.5	---	---

Detachable chamber readings in Hanford, 100-DR and White Bluffs averaged 0.5, 0.8, and 0.5 mrep/24 hours respectively. The maximum reading on a CI unit was 4.4×10^{-7} μc/liter at the 200 West Area. The maximum air filter sample was about 6×10^{-9} μc/liter taken from the 200 East Area. Air filters from 100-DR, Hanford and White Bluffs indicated 2.9×10^{-10}, 4.3×10^{-10}, and 1.7×10^{-10} μc/liter, respectively. Sixty-five rain samples were collected and analyzed for activity during the month; the maximum activity of any off-area sample was 8.8×10^{-3} μc/liter collected at Riverland.

Land and Vegetation Contamination

The average vegetation contamination was as follows:

Location	Average for September	uc I^{131} per kg. October Maximum	October Average
North of 200 Areas	0.04	0.11	0.04
Near the 200 Areas	0.11	1.88	0.12
South of 200 Areas	0.04	0.13	0.04
Richland	<0.04	0.09	<0.04
Pasco	<0.04	0.16	0.04
Kennewick	0.05	0.07	<0.04
Benton City	0.04	0.05	<0.04
Richland 'Y'	0.04	0.06	0.05
Hanford	0.08	0.08	<0.04

Seventy vegetation samples were taken from the Benton Gap Area; the average activity was 0.04 μc/kg with the maximum of 0.11 μc/kg collected at an elevation of 600 feet.

Twenty-two samples taken between Plymouth and Kennewick averaged <0.04 μc/kg; the maximum was 0.11 μc/kg. Vegetation samples were collected at off-area points covering the areas Horniston, Pullman, Ritzville, Spokane, Ellensburg, Moses Lake, Toppenish, and the Dalles. The overall average of all these samples was <0.04 μc/kg; the maximum individual sample was 0.10 μc/kg collected at Wallula.

Geology

The extent of detectable contamination in the water tables in the 361-B Area is apparently decreasing from that indicated in previous months, due primarily to the natural dilution by the ground water and to encroachment by the ground water into the contaminated zone, and to a lesser, though still important extent, by the half life decay of the radioactive contaminants.

No significant difference was detected in the elevation of the water table in the eleven wells in the 361-B reverse well area, and in the 224-B-4 Well, which were carefully checked during the month. No slope of the ground water table could therefore be determined.

No contamination was detected by the field check of the sediment samples from the four 9-foot observation test holes drilled in the 5-6 tile field for the "S" Division.

The level of the liquid in the three wells near the 241-T Area second cycle crib was checked and found to be the same as previously reported.

The results of an analysis of a sediment sample from a depth of about 20 foot below the No. 3 (2nd cycle) crib is as follows:

Fission products - Approximately 8 x 10^{-2} μc/kg
Alpha Contamination - Less than 4 x 10^{-2} μc/kg

Significant contamination is apparently present for the first time at this depth since the crib was put into use September 2, 1947. To date a total of about 2,000,000 gallons of 2nd cycle waste have been discharged into this crib. The level of activity of the contamination will be followed and the well deepened as the activity increases toward the limit of safe operation.

Heavy duty wiring and piano-wire reinforcement failed to prevent the armature of the casing sampler from short-circuiting on the first attempt to obtain a sample from the 35-foot level of Well 241-T-2. Following the short-circuiting of the motor on three previous occasions it was finally decided to purchase a new motor for the sampler, rather than to attempt to repair the old motor. During the above sampling operations, the sample auger hit a rock and shifted the entire machine, so that the lead plug used to seal the drilled holes was not inserted into the drilled hole, and was found in the sample cup on removal of the sampler from the well. No significant alpha or beta-gamma contamination was detected by the 222-U analysis of the portion of the 20.7 gram sample obtained.

The elevation of the water table in Well 231-2 was found to be nearly ten feet lower than that in Well 224-T-4, presumably owing to the proximity of Well 224-T-4 to the effluent discharge swamp. A 500-milliliter water sample was taken from Well 231-2 which had alpha activity of about 27 dis/min/liter. This result will be rechecked with a larger sample.

Well 303-1 located between the 300 Area waste pond and the river was begun on October 19, and was completed at a depth of 70 feet on October 25. No significant contamination was detected by the field check of the 5-foot interval sediment samples from the well. First results from the water table indicate alpha emitting contamination up to 20 dis/min/liter, but those samples were possibly diluted or contaminated by the water used in drilling the well. Other samples will be taken as soon as the water has had time for adequate circulation.

The following wells are in process of drilling on Project C-133, Part 2:

Well No.	Depth October 25	Date Begun	Estimated Depth to be Drilled	Yet to Drill
34-88.5	337	8/28/48	350	13
25-80	323	9/1/48	350	27
34.5-51.5	302	9/9/48	400	98
55-88.5	62	10/4/48	300	238
62.5-90	169	7/7/48	210	41
			Estimated yet to drill	417

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All drilling was shut down for the week of October 20-25, inclusive, while the drilling crews were employed on the 291-B Construction Project. Three drilling rigs are normally operating during periods of operation.

Elevation of 17 of the 25 wells have been determined accurately, and detailed ground water studies are underway by the U.S.G.S. field party.

Core drive samples have been obtained from Well 34-51.5 by means of a 3-foot section of split 1½-inch pipe. Core samples up to 2½ feet long have been obtained by the use of the pipe in conjunction with the 4-inch drilling jars. The sample pipe was broken while obtaining a sample and further sampling is postponed pending fabrication of heavier and improved sample pipes. All samples obtained in this manner from Well 34-51.5 have been exceedingly dry.

The electrical resistivity geophysical survey party of the U. S. Geological Survey ran a total of 4 lines during their two days of operation, October 25 and October 26. These lines, run in the most favorable sites in the area to be covered, were totally unsatisfactory, owing to the extremely dry nature of the sediments, and the consequent inability of the instrument to detect significant changes in the resistivity of the sediments and the underlying basalt bedrock. Two lines were run in the vicinity of Well 60-60, where bedrock, located by drilling, lies at a depth of about 120 feet, and two were run in the vicinity of Well 25-80. Basalt, in the latter location, crops out at the surface, yet gave no difference in resistivity to that of the sediments on either side of the outcrop.

The geophysical crew was aided by the two geologists of the Ground Water Division of the U. S. Geological Survey, and by one member of the Geology Group of the H. I. Divisions.

Meteorology

The mean temperature for the month of October was 50.9 degrees or about 1.7 degrees below normal for the month. The extreme maximum temperature for the month did not rise above that for October, for the years, 1945 through 1947, but the warmest minimum temperature of the month was 52 degrees or 8 degrees less than the warmest minimum for the month of October.

The lowest temperature for the month occurred on the 29th, being 22 degrees, which is within 1 degree of the lowest recorded for October, since Building 622 has been operating.

The rainfall for the month was .45 of an inch. This is 1.75 inches less than that for October 1947 but is still 3.50 inches above that for the normal for the year, up to date. No rain, excepting a trace, which fell

on the 23rd, for the period from 7th through the 29th. The greatest amount fell on the 6th and 30th.

The weather for the month had no unusual feature other than the following:

A Chinook wind occurred on the 7th; causing the temperature to rise from a maximum of 53 degrees on the 6th to that of 70 degrees on the 7th. No dust storms occurred but the wind attained velocities, at 200 feet, of 48 mph on the 3rd, 41 mph on the 14th and 42 mph on the 26th. However, blowing dust was observed in Richland on two occasions. Smoke apparently blown in by upper air, occurred, without restricting horizontal visibility to less than 9 miles, on the following dates: 19th, 20th, 21st, 22nd, 23rd and the 30th.

The first killing frost of the year came on the 17th, which is 6 days later than the earliest recorded here during the years that records have been kept. The length of time between the last killing frost of Spring and the first killing frost of Fall, for the year 1948, was 167 days, which is 21 days less than the average for the years of 1945, 46, and 47. The longest period of frost free days observed during the years mentioned being 210 and the shortest being of the current year.

Bioassay

Four hundred ten urine samples were analyzed for plutonium. There were thirteen samples with more than 0.65 d/m as a result of low spike values accompanying the batch analyses of urine samples. All of the high samples of last month requiring resamples were resampled and all showed less than 0.66 d/m except one sample which was 0.76 d/m again due to a low spiked sample. In addition to the urine samples, twelve water samples and eighty-two blank water samples were analyzed for plutonium. Investigations into the cause for the low yields are underway both in the Bioassay Group and in the Methods-Development group. Several promising results have been obtained.

Two hundred sixteen urine samples were analyzed for uranium by the fluorophotometer method. The average uranium content found in the urine of 300 Area employees is tabulated below for the month of October:

	µg/liter	
	Maximum	Average
Melt Plant	87	25
Material Handling	55	12
Machining	57	7
Plant Assistance	3	3
Canning & Dipping	34	4
Inspection	14	3
Building 305	3	1

22

Methods Development

Precipitron samples have been collected from the gas stream in 200 East to determine a distribution curve of number of particles vs. size. Statistical analyses of the samples collected have not been completed. Results indicate however, that the majority of the particles are less than 10 microns in diameter. The study of the slides showed many discrete small ($< 6 \mu$) translucent particles, believed to be caused by precipitated mist. The presence of a dry ice cooled condenser before the precipitron removed this mist from the precipitron samples. Approximately 5 cc. of contaminated water was collected from 45 cubic feet of air by the condenser. The contamination level in the condensate was approximately 1 μc/liter.

The effect of various percents of carbon dioxide on counting rates in the modified Simpson counter has been determined. As much as 5 percent by volume of carbon dioxide in the methane stream may be added without lowering the counting rate more than 5 percent.

The net geometry of the BGO sets, one through ten, has been recalculated. Two Bureau of Standards Radium D, E, and F standards have been counted. The geometry of Set 10 obtained from these sources is only 21.6%, a value significantly lower than the value of 24.9% determined with the control standards. The cause of this difference is unexplained. An attempt to determine the geometry of the Standard Alpha Counters was made by counting a series of weighed amounts of uranium and extrapolating to counts per minute at zero weight. The results require confirmation but indicate a geometry of only forty-two percent.

A mist contaminated with fission products was drawn through a Little Sucker filter and radiographs of the filter made to determine if such a mist would coalesce on the filter and give local darkened areas on the film. No such active spots were observed.

Tests of nuclear particle detecting photographic plates reveal that they could stand 3×10^7 alpha particles per square centimeter without too much fogging. It is hoped that very small amounts of plutonium might be detected by placing the sample in contact with one of these plates and then exposing it to a neutron flux in a pile to produce fissions in the plutonium which would be detected by the photographic plate. Previous tests last month indicated excessive blackening due to the alpha particles from plutonium but the exposure was considerably greater.

A series of experiments was run to determine Little Sucker filter efficiency for plutonium dust. A Little Sucker unit was connected to the hot leg of Cell #4 at Building 231 and backed by a H_2SO_4 column and then with a sodium hydroxide column. The linear flow through the filter was varied from 4.2 feet per minute to 293 feet per minute. Analyses of the columns and of the filter showed the filter to be greater than 98% efficient in all cases.

Methods Control

During the month, sixteen samples were analyzed for the Survey Group and the Technical Division. These analyses ranged from a complete F.P. analysis on a Technical Division sample to a total beta determination from a sample of dirt. This leaves a backlog of 22 samples, mostly for identification of beta emitter.

One thousand, seven hundred and sixty-nine samples were counted for alpha activity and three thousand, eight hundred and twenty-nine samples were counted for beta activity for a total of five thousand, five hundred and ninety-eight measurements. In addition, fifteen absorption curves, one hundred and thirty-one decay points and five hundred and fifty-four control checks were taken.

Physics

It has been realized belatedly that in view of the large amount of heat developed within the neutron sources, some provision should be made to dissipate the heat from the interior of the shields. Aluminum liners are being fabricated to be placed between the source capsules and the lucite tubing of the container. When the liners have been completed, the containers will be ready to receive the sources.

Preliminary investigations have been made of the characteristics of the Ilford boron-loaded slow neutron plates. It appears that the grains in a thin top layer of the emulsion are practically completely developed. This condition interferes with the observation of tracks in the emulsion. The cause of this condition is being sought. The emulsion shows a sensitivity of the order of 10^{-2} tracks per neutron.

Instrument Development

The Portable Poppy development project is considered complete except for testing whatever low leakage condensers become available. Atomic Energy Commission approval for producing the instrument in quantity has been obtained.

Neut development is complete.

Cylindrical insulators have been found satisfactory by the 231 Operational Group. Specifications for a 2 x 7 probe can therefore be submitted to the Instrument Division.

Water curtain beta monitoring data is being collected at a distressingly slow pace. Operating difficulties in the 100-F Area prevented collecting the data desired, although the gas count was reduced by ventilating the counting volume.

Soft beta monitoring with a cylindrical 1½ inch diameter probe appears promising. At 1290 volts, 0.3 volt beta pulses were observed. Alpha pulses were 0.6 volt high under these conditions.

A Victoreen Alpha Meter was adapted for soft beta counting by equipping it with a 1.5 liter nylon walled chamber and a pressure balance chamber.

Film inversion obtained by exposing badges to radiation sources situated in the plane of the film was different from the 100-F case in that the experimental film windows had dark edges.

Instrument work on the pulse analyzer has progressed sufficiently to permit collecting counting data. To avoid delays between sample preparation and counting the instrument will be turned over to the Methods Group as soon as an instruction manual is prepared.

The routine calibrations were:

RADIUM CALIBRATIONS	Number of Calibrations September	October
Fixed Instruments		
Gamma	599	658
Portable Instruments		
Alpha	60	72
Beta	104	149
Gamma	532	528
X-Ray	4	6
Neutron	1	1
Total	701	756
Personnel Meters		
Beta	1224	744
Gamma	6103	7354
X-Ray	2927	9422
Neutron	0	14
Total	10,254	17,534
GRAND TOTAL	15,730	18,948

BIOLOGY DIVISION

Aquatic Biology

1. Effect of Pile Effluent Water on Aquatic Life

The revamping and renovation of laboratory equipment was completed about the middle of the month and on October 25th a new series of monitoring tests on chinook salmon was begun. Approximately 25,000 salmon eggs, spawned on October 25th were obtained for these tests from the State of Washington, Department of Fisheries, through cooperation with the University of Washington, Applied Fisheries Group. These eggs have been divided into small lots of approximately equal size and placed in the following conditions:

Group	Condition
1	River Water, Control
2	River Water, Control
3	Prepile Process Water, Refrigerated, Filtered
4	Pile Effluent*, Refrigerated**, Filtered***
5	5 p.p.m. Sodium silicate
6	20 per cent Area Effluent
7	10 per cent Area Effluent
8	5 per cent Area Effluent
9	2 per cent Area Effluent
10	1 per cent Area Effluent

* The Pile Effluent being used here is from the inlet of the 107 Retention Basin.

** The temperature is reduced to that of the river water by refrigeration.

*** An activated carbon filter is used to remove residual chlorine.

These eggs will be incubated and subsequently the young fish will be reared in these conditions. Studies on survival and rate of growth are to be made on all stages.

The studies on the young rainbow trout produced by parents exposed to 50 per cent pile effluent prior to spawning have continued without particular incident. The fish in all of the groups are now growing rapidly and have reached a size where few deaths occur.

2. Biological Chains

26 Five studies are now in progress to determine the manner in which radio-

activity is accumulated in fish, these are:

1. Shiners held in pile effluent water and fed uncontaminated snails.
2. Shiners held in river water and fed active snails.
3. Trout held in river water and fed active snails. This study was started on October 2.
4. Trout held in river water and fed active carp.
5. Trout held in river water and fed active crayfish. This study was started on October 18.

As a part of these experiments the accumulation of activity in the snails, carp, and crayfish is also being followed.

The interruption in the operation of the 100-F Pile on October 20, which has in effect continued to the present time has interfered with all of these feeding tests since the organisms are no longer supplied with radioisotopes in the amounts ordinarily occurring in the effluent water. Thus far the fish which have been feeding upon the active snails and active carp have shown the highest accumulation of activity in bone. Liver, skin, gastro-intestinal tract, and gills have been intermediate and muscle has been lowest. The highest activity (2.4μc/kg) occurred in the bone of a snail fed trout. Decay curves have all shown a component of about 14½ day half-life and a few samples indicate the presence of longer lived material.

Since relatively large amounts of S^{35} are known to have been present in the pile effluent on October 21 and 22, additional decay studies were started on snail, carp, shiner and pond weed samples taken on October 25, to see if this radioisotope could be detected in the tissues.

3. Radiobiological Survey

Sampling and counting of the biota (algae, etc.) of the river bottom between 100-B and Pasco has continued according to the established routines. The results obtained during the month have been consistent with those reported previously. Work is getting underway on the aquatic insects, the larvae of which constitute a large portion of the invertebrate animal life of the river. Common forms are being sorted out of collections and some activity counts are being made. Equipment for collecting and rearing these insects and their larvae is being fabricated.

In samples of fish captured at Hanford the following showed activities above 0.2 μc/kg:

Suckers: liver 0.4; kidney 0.2. 0.35; testis 0.2, 0.3; bone 0.4; gill 0.3 μc/kg

Squawfish: gill 0.4 μc/kg.

Zoology

1. Chronic Toxicology of I^{131} in Stock Animals

There have been no changes in numbers of animals or feeding schedules during the past month. Distribution studies of ingested I^{131} have been initiated. In sheep about 20% is excreted in feces and about 30% in the urine according to preliminary data. The possibility that the remaining 50% may be deposited in skin and wool is being investigated.

2. Biological Monitoring

Predators again have sabotaged monitoring attempts. Two of the 5 remaining ducks were killed at the 300 Area Pond on about October 18. None was sacrificed this month. A survey of the probable contribution of rodents to that break in the dam was made and reported in a separate document HW-11381.

Four rats on effluent water for their entire lifetime (4 months) and one control rat were sacrificed. In general, none of the tissues contained more than 0.02 μc/kg.

A duck that had been on the river at 100-F for 14 months was sacrificed.

For comparison a listing of activity levels in corresponding tissues from a duck sacrificed one year earlier is included.

Tissue or Organ	2.3 kg. female duck assayed 10-27-47 (In μc/kg)	3.0 kg. male duck assayed 10-28-48 (In μc/kg)
Thyroid	1.1	0.12
Blood	0.007	0.01
Brain	---	0.01
Muscle	0.01	0.03
Liver	0.01	0.03
Kidney	0.01	0.03
Pancreas	0.02	0.05
Lung	0.01	0.02
Feces	0.03	0.1
Spleen	0.02	0.04
Gonads	0.02	0.04
Bone	0.002	0.01

A second annual check of radioactivity in pheasants shot in this part of the state was made. Ten birds were sampled from five locations. The levels of radioactivity in thyroids are lower by factors of 20 to 100 than those detected in 1947 birds. This improvement is attributed to the extended cooling time of irradiated slugs. Values tabulated are in microcuries/kg.

Location and Approximate Distance from 200 Stacks	Activity in Thyroids 1947	1948	Other positive beta activity 1947	1948
Sunnyside-Grandview, Mabton. 30-35 miles S.W.	Highest of four birds: 0.33 & 0.88	None detected in four birds	0.01 in liver & kidney of one bird	0.01 in gut of one bird
Near Prosser, 20 miles S.S.W.	0.30 in one bird	0.01 in one bird	0.06 in bone of one bird	None
Near Benton City, 15 miles S.	Highest of 6 birds: 0.82 & 1.3	0.01 & 0.04 for two birds	0.01 in bone and gut of one of six birds	0.01 in spleen & gut of one bird
Near Twin Bridges (Richland) 15 miles S.S.E.	1.4 & 5.0 for two birds	0.06 in one bird	0.01 in liver & 0.007 in gut of one bird	None
Prescott and Washtucna 70 miles E.	0.55 and 0.90 for two birds	0.01 in one of two birds	0.01 in gut of one of two birds	None

Rabbits from three locations have been assayed for activity and the results obtained are tabulated below. The rabbit from Twin Bridges was taken at the same location and time as a pheasant reported on the preceding page. Numerical values are in μc/kg.

Tissue or Organ	(Caged in area for 11 months) Albino from T-Plant	Young Jackrabbit from 200-E	Mature Jackrabbit from Twin Bridges (8 mi. N.W. of Richland)
Thyroid	0.01	1.4	0.18
Blood	0.07	0.005	--
Liver	0.006	0.006	0.002
Pancreas	0.02	0.003	--
Spleen	0.002	0.003	0.02
Muscle	0.003	0.01	0.002
Gonads	0.003	--	--
Bone	Not counted to date.	0.004	0.004
Lung	Not counted to date.	0.005	0.006
Feces	0.003	0.06	0.01
Kidney	0.003	0.02	0.003
Brain	--	0.01	--

Three young Norwegian rats of about 150 g. each were caught in a trash can

in the instrument shop of the 300 Area. Gut contamination was rather high in both alpha and beta emitters, suggesting uranium. Other tissues are low indicating a low rate of assimilation. Values are in μc/kg.

	#1 (female)	#2 (Male)	#3 (?)
Thyroid	0.08	0.03	0.06
Liver	0.03	0.01	0.01
Spleen	0.03	0.02	--
Pancreas	0.03	0.003	--
Kidneys	0.003	0.01	0.03
Feces	0.52	0.96	0.68
Gonads	0.02	0.003	--
Muscle	0.004	0.003	0.006
Bone	0.01	0.003	0.02
Brain	0.003	0.01	0.02
Lung	--	--	0.01

Alpha plate-counts of ashed feces showed about 0.08 μc/kg. Efficiency of such a preparation would be very low due to self-absorption.

3. Special Studies

In the "Point-Source" studies of "Specks" in rabbits, three animals were sacrificed and their tissues are being processed for histological study. Representative samples were assayed, their activities are listed below in μc/kg. Implantations were made 10 months earlier.

Tissue or Organ	Tracheal Cannulation rabbit (sacrificed Oct. 6)	Control rabbit inactive speck in testicle (sacrificed Oct. 8)	Hot speck in Testis (Sacrificed Oct. 18)
Thyroid	0.05	0.03	0.02
Liver	0.003	0.007	0.034*
Spleen	0.01	0.01	0.05
Kidney	0.003	0.005	0.003
Muscle	0.008	0.002	0.006
Bone	0.003	0.004	0.01*
Lung and Trachea	0.002		

* The detection of activity in these tissues suggests some solubility of such solid particles in body fluids and their redeposition in other tissues. Decay studies are being made of these two plates.

GENERAL ACCOUNTING DIVISION

OCTOBER 1948

GENERAL

Decentralization of accounting work was completed during the month of October. Accounting functions with the exception of payrolls, property accounting, issuance of checks, bank accounts, and billing to the government, are now handled by the respective Accounting divisions. Payrolls, property accounting, bank accounts, and billing to the government are handled by the General Accounting Division.

Considerable work was necessary in connection with compiling and reporting operating costs on the new basis, including recasting July and August costs.

Preliminary work was done in connection with the preparation of the budget for the fiscal year ending June 30, 1949. Other divisions were supplied with forms and actual expense figures for the first quarter of the year to assist them with their budget preparations.

The Payroll Divisions returned to a forty-hour week as of October 31, 1948.

The transition from operating as an issuing agent for the purchase of U. S. Savings Bonds to purchasing bonds through the Employee Savings Division in Schenectady presented many problems which have not as yet been satisfactorily solved. Considerable confusion was caused by the change-over due to the fact that payroll deduction accounts are maintained at Hanford Works while Bonds are issued by Employee Savings Division in Schenectady. Bond purchases for the month of October have been delayed due to the fact that many Payroll Deduction Authorizations were in transit between Schenectady and Richland.

Unreimbursed charges as of October 31, 1948 increased over those as of September 30, 1948 by $4,171,952. The decentralization of accounting divisions and the necessary incidental work in connection therewith, together with an increased volume of work, accounted for $2,338,765 of this amount. An increase in the amount of approved vouchers not reimbursed, and in the amount of vouchers submitted to AEC for pre-billing audit accounted for $1,833,187.

Following is a comparison of unreimbursed charges as of October 31, 1948 with September 30, 1948:

	September 30, 1948	October 31, 1948
Billed on Public Vouchers	$ 5 445 264	$ 6 520 785
Submitted on Pre-Billing Audit Vouchers	3 644 326	4 401 992
Unbilled	6 614 051	8 952 816
Total	$ 15 703 641	$ 19 875 593

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	8 429	1 718	6 711
Additions and transfers in	253	19	234
Removals and transfers out	(194)	(23)	(171)
Transfers from Monthly to Weekly Payroll	--	(4)	4
Transfers from Weekly to Monthly Payroll	--	9	(9)
Employees on payroll at month end	8 488	1 719	6 769

Employees on Payroll at Month End	September	October
Manufacturing	3 029	3 073
Design and Construction	1 236	1 203
Community	952	985
Other	3 212	3 227
Total	8 429	8 488

Overtime Payments - Weekly Paid Employees	September	October
Number	13 413	9 682
Amount	$266 051	$194 930
Overtime Payments - Monthly Paid Employees		
Amount	$71 244	$50 753
Number of changes in Salary Rates and Job Classifications	785	1 063
Gross Amount of Payroll		
Manufacturing	$1 116 036	$1 115 604
Design and Construction	469 017	437 434
Community	306 514	306 262
Other	995 524	991 732
Total	$2 887 091	$2 851 032
Annual Going Rate of Payroll		
Manufacturing	$14 179 645	$14 420 547
Design and Construction	5 823 821	5 368 828
Community	3 839 793	3 869 823
Other	12 635 157	12 562 715
Total	$36 478 416	$36 221 913

Average Salary Rate Per Hour	September			October		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$1.929	$2.575	$2.023	$1.929	$2.581	$2.023
Design & Construction	1.467	2.583	1.842	1.466	2.599	1.834
Community	1.724	2.211	1.799	1.717	2.225	1.798
Other	1.557	2.571	1.744	1.552	2.566	1.742
Total	$1.707	$2.544	$1.866	$1.707	$2.547	$1.866

General Accounting Division:

Employee Plans		
Pension Plan	**September**	**October**
Number participating at beginning of month	5 197	5 427
New participants and transfers in	310	319
Removals and transfers out	(80)	(49)
Number participating at month end	5 427	5 697
% of eligible employees participating	95.7%	95.1%
Employees Retired	**October**	**Total to Date**
Number	4	36
Aggregate Annual Pensions including Supplemental Payments	$865	$6 218
Amounts contributed by employees retired	$370	$2 122

Group Life Insurance	September	October
Number participating at beginning of month	5 762	5 831
New participants and transfer in	222	158
Cancellations	(35)	(31)
Removals and transfers out	(118)	(66)
Number participating at month end	5 831	5 892
% of eligible employees participating	72.0%	72.1%

Insurance Claims	October	Total to Date
Number of deaths	1	15
Amount of Insurance	$7 650	$82 823
Amount contributed by employees	$ 72	$ 686

Group Disability Insurance - Personal	September	October
Number participating at beginning of month	6 997	7 096
New participants and transfers in	278	250
Cancellations	(6)	(40)
Removals and transfers out	(173)	(107)
Number participating at month end	7 096	7 199
% of eligible employees participating	89.6%	89.4%

Group Disability Insurance - Dependent		
Number participating at beginning of month	4 189	4 259
Additions and transfers in	129	114
Cancellations	(7)	(27)
Removals and transfers out	(52)	(36)
Number participating at month end	4 259	4 310

Group Disability Claims		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	83	82
Daily Hospital Expense Benefits	95	92
Special Hospital Services	95	95
Surgical Operations Benefits	65	62
Dependent Benefits Paid		
Daily Hospital Expense Benefits	81	98
Special Hospital Services	94	103
Amount of claims paid by insurance company:		
Employee Benefits	$10 947	$10 092
Dependent Benefits	2 648	3 483
Total	$13 595	$13 575

General Accounting Division

Employee Plans (continued)

Group Disability Insurance - Premiums	September	October
Personal - Employee Portion	$12 073	$12 234
- Company Portion	7 282	7 354
- Total	$19 355	$19 588
Dependent - Employee Portion	$ 3 826	$ 3 881
- Company Portion	392	392
- Total	$ 4 218	$ 4 273
Grand Total	$23 573	$23 861

Annuity Certificates (For du Pont Service)	October	Total to Date
Number issued	0	55

U. S. Savings Bonds	Mfg.	D & C	Comm'y	Other	Total
Number participating at month end	2 201	555	526	1 649	4 931
% participating	71.6%	47.0%	53.4%	51.1%	58.3%
Bonds issued - maturity value	$82 650	$16 975	$15 300	$49 700	$164 625
- number	1 706	353	345	1 098	3 502
Annual going rate of deductions					
New Plan	$882 909	$199 554	$198 654	$651 958	$1 933 075
Old Plan	369 068	73 919	51 383	170 751	665 121
Total	$1 251 977	$273 473	$250 037	$822 709	$2 598 196

Suggestion Awards	October	Total to Date
Number of Awards	15	201
Total Amount of Awards	$120	$1 985

Security Slogan Awards		
Number of Awards	--	7
Total Amount of Awards	--	$175

Employee Sales Plan	October		
	Total	Major Appliances	Traffic Appliances
Certificates issued	332	77	255
Certificates voided	32	2	30

Salary Checks Deposited	September	October
Weekly	1 039	1 031
Monthly	838	866
Total	1 877	1 897

Special Absence Allowance Requests		
Number Submitted to Pension Board	7	6

Absenteeism (Weekly Paid Employees)		
January to October 31	1947	1948
	1.72%	2.18%

General Accounting Division

	September	October
Accounts Payable		
Number of Vouchers Entered	5 259	2 446 *
Amount of Vouchers Entered	$ 22 943 932	$ 5 637 445 *
Number of Checks Issued		
Community	Segregation	293
Design and Construction	Not	1 356
General	Readily	9 975
Manufacturing	Available	532
Total	3 953	4 156
Amount of Checks Issued		
Community	Segregation	150 335
Design and Construction	Not	12 836 952
General	Readily	8 482 201
Manufacturing	Available	563 216
Total	$ 23 470 249	$ 22 032 704
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	$ 5 806 717	$ 5 445 264
Submitted During the Month	13 284 853	14 477 255
Sub Total	$ 19 091 570	$ 19 922 519
Reimbursements During the Month	13 646 306	13 401 734
Not Reimbursed at End of Month	$ 5 445 264	$ 6 520 785
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	108	140
Submitted During the Month	456	381
Sub Total	564	521
Reimbursements During the Month	424	367
Not Reimbursed at End of Month	140	154

* General Divisions Only.

Amount of Vouchers Entered and Amount of Checks Issued for September include liquidation of $10,000,000 of advances from AEC (offset by current advance from AEC)

Amount of Vouchers Entered and Amount of Checks Issued for October include liquidation of $5,000,000 advance from AEC.

General Accounting Division

		September	October
Pre Audit Vouchers (1035) Submitted to AEC			
Not Yet Approved			
Community	Segregation	$	-0-
Design and Construction	Not		2 907 322
General	Readily		1 490 732
Manufacturing	Available		3 938
Sub Total		$ 3 644 326	$ 4 401 992
Not Submitted to AEC on Pre Audit Vouchers			
Community	Segregation		87 310
Design and Construction	Not		3 746 125
General	Readily		4 946 070
Manufacturing	Available		173 311
Sub Total		$ 6 614 051	$ 8 952 816
Total Unbilled Items		$ 10 258 377	$ 13 354 808
Cash Receipts			
Community	Segregation	$	149 801
Design and Construction	Not		52 164
General	Readily		13 487 385
Manufacturing	Available		11 195
Total		$ 23 987 610 *	$ 13 700 545
Detail of Receipts			
U. S. Government		$ 13 646 306	$ 13 401 734
Rents		104 640	-0-
Hospital		66 909	68 316
Telephone		6 564	-0-
Miscellaneous Accounts Receivable		23 500	1 112
Employees Sales		1 114	2 005
Bus Fares		8 859	-0-
Educational Program		3 867	2 643
Sale of Furniture		44 388	-0-
Salvage Sale		-0-	6 009
Advances		10 000 000	-0-
All Other		81 463	5 566
		$ 23 987 610 *	$ 13 487 385 **

* Includes $ 10 000 000 Advance from AEC
** General Divisions Only

General Accounting Division

	September	October
Travel Advances and Expense Accounts		
Cash advance balance at end of month	$ 47 136	$ 14 411 *
Cash advance balance Outstanding over one month	8 678	1 333 *
Traveling and Living Expenses:		
Paid Employees	27 197	13 978 *
Billed to Government	26 549	14 016 *
Balance in Variation Account at end of month	14 743 cr.	687cr.**
Hospital Accounting		
Accounts Receivable Balance at Beginning of Month	$ 57 192	$ 64 314
Total Invoiced During Month	98 586	101 327
Total	$ 155 778	$ 165 641
Less Cash Received and Payroll Deductions	(91 464)	(98 021)
Bad Debts Written off	-0-	(1 063)
Accounts Receivable Balance at end of Month	$ 64 314	$ 66 557
Property		
Number of Transfer Notices Received	704	603
Number of Items Affected	2 365	1 679
Number of Receiving Reports Classified	9 537	8 778
Number of Receiving Reports Vouchered	756	960
Number of Items Tagged at beginning of month	91 572	95 002
Number of Items Tagged this Month--Metal	4 619	704
Number of Tagged Items dropped from record	(1 189)	(840)
Total Tagged Items Recorded	95 002	94 866
Number of Items Recorded in quantity only at beginning of month	13 342	13 574
Items added to record during month	324	248
Dropped from record during month	(92)	(11)
Total Items Recorded in Quantity	13 574	13 811
Total Items on Record	108 576	108 677

* General Divisions Only

** Balance in Variation Account as of June 30, 1948, less deductions for purchase of office furniture for staff and contributions to Community Chest, transferred to General Office in October.

General Accounting Division

PERSONNEL AND ORGANIZATION	September	October
Number of Employees		
On Payroll at beginning of month	275	278
Removals and transfers out	(20)	(111)
Additions and transfers in	23	20
Number at end of month	278	187
Net increase (or decrease) during month	3	(91)
% of terminations and transfers out	6.9%	39.9%
% of absenteeism	1.82%	2.18%

Changes by division in number of Accounting Division employees during October were as follows:

General: No increase or decrease

One transfer to Special Assignments - General Accounting Division
Five transfers from General Accounts
Four transfers to General (Nucleonics Department Staff)
One termination
One new hire

Accounts Payable: Decrease of forty-one

Six new hires
Fourteen transfers to Manufacturing Accounting
Two transfers to Community Accounting
Thirty transfers to Construction Accounting
One termination

Cost: Decrease of twenty-five employees

Twenty-one transfers to Manufacturing Accounting
Five transfers to Community Accounting
Two transfers to General (Nucleonics Department Staff)
Three transfers from General Accounts

General Accounts: Decrease of thirty-three employees

Five transfers to General - General Accounting Division
Five transfers to Manufacturing Accounting
Fifteen transfers to Community Accounting
Seven transfers to Construction Accounting
One transfer to Medical Accounting
Three transfers to Cost
One transfer to Special Assignments - General Accounting Division
Four new hires

Property: No change

Weekly Payroll: Increase of two employees

Six new hires
Three terminations
One transfer to Monthly Payroll

General Accounting Division

PERSONNEL AND ORGANIZATION (continued)

Monthly Payroll: Increase of four employees

Three new hires
One transfer from Weekly Payroll

Methods: No change

Special Assignment: Increase of two employees

One transfer from General Accounts - General Accounting Division
One transfer from General - General Accounting Division

Injuries	September	October
Major	0	0
Sub-major	0	0
Minor	2	2

Number of Accounting Division employees as of November 1, 1948 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	5	4	9
Accounts Payable	29	1	30
Cost	7	1	8
General Accounts	20	1	21
Property	27	3	30
Weekly Payroll	65	6	71
Monthly Payroll	13	1	14
Methods	0	2	2
Special Assignments	0	2	2
Total	166	21	187

Open employment requests as of October 31, 1948 were as follows:

General Clerk A	1
General Clerk B	9
General Clerk D	1
General Clerk E	1
Office Machine Operator B	3
Total	15

General Accounting Division

ACCOUNTS PAYABLE

On October 9 work pertaining to other divisions' accounts payable was physically transferred to other locations. Thirty employees remained in this section to handle work which includes the auditing and processing for billing to AEC of vouchers for Medical, Technical, Services and Security, Health Instrument, Employee and Community Relations, and the General Accounting Divisions. The disbursement of contract funds, except payrolls, for all divisions is also handled by this section.

During October, 2,446 vouchers were entered totaling $5,637,445 (this includes liquidation of AEC Advances in the amount of $5,000,000). At the end of the month, there were 754 vouchers on hand totaling $333,682 (including paid and unpaid) which require additional supporting data before they can be billed to AEC.

COST

The Cost Section was physically decentralized on October 30. The month of October was spent in making necessary adjustments in preparation for the decentralization and in the preparation of September cost reports. An unusual amount of time was required for the preparation of these reports due to the fact that they were prepared for the first time in accordance with the newly inaugarated cost procedure. Recasting of General Divisions cost reports was made from the old procedure to the new procedure for the months of July and August. To assist General Divisions with budget preparations and to furnish a guide in compiling estimates for the budget for the fiscal year 1949, actual operating expenses for the first quarter of the year were furnished.

Special studies were made for those divisions not having applied labor. These studies were used to distribute the division's expenses for the month according to the work performed for other divisions.

GENERAL ACCOUNTS

Due to decentralization of accounting activities, the volume of work in connection with expense accounts decreased considerably. Approximately 2/3 of the outstanding balance as of September 30 was applicable to and was transferred to other divisions. The accounting for cash advances is on a current basis as only $1,333 of the outstanding balance was advanced prior to October 1.

There are now 16 operating cashiers working funds totaling $2,635. Two of these are assigned to the Works Cashiers, 8 to Kadlec Hospital, 3 to North Richland Hospital, and 3 to Stores.

The balance in Traveling and Living Variation account, in the amount of $14,093.65, less deductions representing Community Chest donations ($4,000), and cost of furniture for staff offices at Schenectady ($4,563.48), was transmitted to General Office by check, in order that the net amount of $5,530.17 might be credited to Administrative and Other Expenses.

General Accounting Division

General Accounts (Continued)

The Government Billing Section continued to be responsible for all billings to the government; there were, however, many changes in billing procedures. Instead of this section originating all pre-audit vouchers and submitting them to the AEC for approval as had been done in the past, other divisions are now preparing pre-audit vouchers and submitting them to this section for transmittal to the AEC. Control of unapproved pre-audit vouchers and contacts with the AEC regarding questionable items continues to be the responsibility of this section. (The Design and Construction Division is an exception as they submit their pre-audit vouchers to AEC and contact AEC regarding questionable items.)

It was necessary to develop entirely new procedures with regard to the control of unbilled items since other divisions are now maintaining details. Control figures for each division are furnished by this section each month.

During the month public vouchers (Form 1034), amounting to $14,477,255 were submitted to the AEC for approval. Pre-audit vouchers (Form 1035), totaling $4,401,992, were submitted but not yet approved by AEC at the end of the month. Reimbursements received totaled $13,401,734.

With the decentralization of accounting functions, controls of cash disbursements were removed from the Accounts Payable Section and assigned to a newly-formed Cash Control Section. After checks have been issued by the Accounts Payable Section and one signature has been entered on the checks, they are forwarded to this section with vouchers attached. Checks are countersigned, the amount of cash disbursed is determined, and charges to divisional current accounts are made. In addition, all cash receipts are recorded by this section and credit invoices are prepared covering receipts applicable to other divisions. This section is also responsible for reconciliation of contract bank accounts, excluding payroll accounts, and for the Works Cashiers Office.

PROPERTY

Activity within this section during October principally comprised work in connection with inventory adjustments. Rechecking was recently completed in all operating areas and is now progressing in the 700-1100 Area.

Inventory clerks continued work at all receiving points except at Pasco where the volume had dropped to the point where only an occasional shipment required attention.

Some work was done during the month in segregating office records by division. Plans were made to keep records concurrently as in the past and also in accordance with a newly devised system segregating plant and equipment by divisional codes.

At the end of the month, total Class B Property items recorded was 108,677.

SPECIAL ASSIGNMENTS

Following decentralization, a report was prepared covering all weekly and monthly salary employees in the General Accounting Division by section and classification.

General Accounting Division

Special Assignments (Continued)

A survey was made of reports prepared and records kept by the weekly and monthly payroll sections. The purpose being to analyze and control sources of information now available for future reference and to eliminate duplication.

Analysis of earnings and expenses was made of the funds deposited with Travelers Insurance Company and Travelers Indemnity Company covering public property and public liability insurance. Similar information was also prepared for the Employees Benefit Fund, which investment is handled by the Treasurer's Office in Schenectady.

New forms indexed during the month totaled 29 bringing the total forms indexed to date to 2,126.

A suggested procedure for the standardization of payroll deductions for house rents has been submitted and is being followed for possible adoption should it prove to be a saving over the method now in use.

An additional suggestion is being studied regarding what savings might be made by adoption of machine posting for stores stock records which are now being posted manually.

During October investigations were made and reports submitted on five suggestions.

General Accounting Division

PAYROLLS

Complete audit by the AEC Audit Section of Weekly Payrolls for September revealed the following errors:

1. Six postings were illegible on the Government copy of the payroll.

2. There were two salary rates shown incorrectly on the payroll although no error in payment occurred.

3. Notations on the Payroll Journal were not clear, incorrect, or omitted in 37 instances.

4. There were nine cases of hours posted incorrectly on the Payroll Journal resulting in one underpayment of $2.60 and three overpayments in the total amount of $6.50.

5. There were four errors in gross calculations resulting in total overpayments of $2.58.

The status of work in the Weekly Payroll Division was improved during October although all work is not yet on a current basis.

Payroll Cost Distribution and cost reports were on a current basis at October 31, 1948.

Work on the New Employees Savings and Stock Bonus Plan is not current. This is due principally to the volume of detail work in setting up the necessary records segregated between the Old and New Plans.

A number of time cards are being received late each week, thereby causing a delay in preparation of the Payroll. For the week ending October 31, 1948, 279 time cards were received late. Interested Superintendents are being advised of the time cards received late each week.

Weekly payrolls have been reimbursed by the government through the week ending September 26, 1948 and monthly payrolls have been reimbursed through the month of July 1948.

Planned overtime in the weekly and monthly payroll divisions was discontinued as of October 31, 1948, and both payroll divisions returned to a 40 hour work week.

SERVICE DIVISIONS

SUMMARY - OCTOBER 1948

Purchasing and Stores Division

The work load in the Purchasing Division remained stable throughout the month; however, the work load in the Stores Division reached a record high when total disbursements amounted to $376,732.32.

Progress was made in the settlement of four purchase orders which were canceled at the request of the Project Engineering Division. Two claims were settled in full and final settlement of the remaining two was still pending at month end.

Additional allocation of galvanized steel sheets was arranged under the Voluntary Steel Allocation Plan and orders placed for our requirements.

A contract was awarded the United States Gypsum Company for the bulk of our requirements for hydrated lime for the period November 1, 1948 through October 31, 1949.

Two shipments of process chemicals were tied up by the longshoremen's strike, one at Coos Bay, Oregon and the other at San Francisco, California. In one of the instances it was necessary to protect our stock position by a spot purchase for all rail shipment.

Additional responsibilities were assigned to Stores Accounting in connection with material control functions formerly performed in the Maintenance Division.

Plant Security and Services Division

There were two Major Injuries during the month which brings the total for the year to date to fourteen. The accumulative frequency rate for the year 1948 is 0.97.

There were ten fires in the Plant Areas during the month with an estimated damage of $45.

Laundry volume in both 200-West and 700 was slightly reduced this month.

On October 25th the Patrol Division returned to a five-day work-week schedule with additional hours being worked to provide an over-lap at shift change necessary to handle traffic in the various areas. Concurrent with this change, several area posts were eliminated with the approval of the Atomic Energy Commission.

On October 26th an Airborne Military group numbering approximately 250 and a vehicle convoy consisting of approximately 750 arrived at the Works for practice maneuvers in the areas.

Trial blackouts were held in all areas except 300 on October 27, 1948.

PURCHASING AND STORES DIVISION
OCTOBER, 1948

GENERAL

Purchasing

The work load remained fairly stable throughout the month. 1,363 purchase orders were placed as compared with 1,279 placed the previous month. 2,135 requisitions were received as compared with 2,381 received the previous month. Requisitions on hand at month end totaled 603 as compared with 681 at the end of September.

In our last month's report we stated that negotiations were continuing on the remaining four purchase orders canceled at the request of the Project Engineering Division. The claim on which we previously made a partial payment of $2,000 was settled in full by an additional payment of $686. Another claim was settled by payment of $3,248.25. Total claims paid thus far amount to $6,847.31. The final settlement of the two remaining orders was still pending at month end.

The Atomic Energy Commission was successful in securing an additional allocation of galvanized steel sheets under the Voluntary Steel Allocation Plan and orders for our requirements consisting of two carloads were placed against the allocation.

Procurement of materials and equipment on an emergency basis was accomplished for two important jobs; these were the 200-E sand filters and Project P-10. The sand filters were completed during the month and orders were placed on all requisitions written for Project P-10. These orders were 78 per cent completed at month end.

The United States Gypsum Company was awarded a contract for 1,000 tons of hydrated lime for delivery during the period November 1, 1948 through October 31, 1949. Inasmuch as our total estimated requirements for this period is 1,360 tons and the United States Gypsum Company could only offer 1,000 tons, it will be necessary to procure the remaining 360 tons by spot purchase from another source.

Quotations from interested vendors on our Caustic Soda requirements for the calendar year 1949 have been received. The Pennsylvania Salt Manufacturing Company has suggested the use of 70 per cent Caustic and delivery by tank truck instead of tank cars as heretofore. Both suggestions were being considered at month's end by interested parties in the Manufacturing Divisions.

Due to the longshoremen's strike, 90,000 pounds of Sodium Nitrate was tied up at Coos Bay, Oregon. We withheld ordering additional material until absolutely necessary in an effort to save the additional freight charges for all rail shipment; however, it became necessary to protect our stock position with a spot purchase of 90 tons which was shipped from Panama City, Florida and scheduled to arrive on or about November 10, 1948.

We also had 50,000 pounds of Ferrous Ammonium Sulphate tied up at San Francisco, California by the same strike. At month end it appeared that it might be necessary to protect our stock position by making a spot purchase for all rail shipment.

Stores

A new high in material disbursements was reached during the month when total disbursements amounted to $376,732.32. This total includes $60,780.49 disbursed to Construction and CPFF Subcontractors.

GENERAL (Cont.)

Stores

New responsibilities were assumed by the Stores Accounting section whereby two employees were set up to act as a material control unit. Their functions, to a considerable degree, will parallel those formerly performed by the Material Control group of the Maintenance Division which comprised a substantially larger number of personnel.

A new procedure was inaugurated whereby a closer control was exercised by the Stores Accounting section with respect to out-of-stock items. Each day the Disbursing section supervisor will report to the Accounting section supervisor all items of which our stock was exhausted the previous day. In each such instance an analysis will be made to determine why our stock was exhausted and whatever action necessary will be taken to preclude the possibility of a recurrence. Such action may include, but will not be limited to, adjusting maximums and minimums upward, establishment of order points, which will provide the necessary lead time for long delivery materials and more vigorous follow through on expediting requests.

Several improvements were made in Receiving Warehouse No. 6. Included was a new floor in the office, new rest room facilities, painting, etc., all of which contributed materially to better working conditions.

In an effort to equalize the work load the Audit section was assigned the responsibility for compilation and distribution of Stores catalogs. All future issues of Stores catalogs will include prices which will be of considerable assistance to the various using divisions in making estimates and will reduce materially the number of telephone calls to the order clerks for price information.

Surplus, Salvage and Scrap

On October 11, 1948 T. L. Lindgren was appointed Supervisor Stores, responsible for surplus, salvage and scrap materials. The functions of this division will include the accumulation, warehousing, classifying, cataloging, and disposal of surplus materials, supplies, equipment, salvage, and scrap for both Operations and Construction including CPFF subcontractors.

Plans were made to utilize the Pasco warehouse to the fullest practicable extent for warehousing excess materials, supplies, and equipment and steps were being taken at month end to arrange for suitable office space at North Richland for the personnel of this new division as that was deemed to be the most logical location.

PERSONNEL

Administrative Supervision	1
Purchasing	
Employees Exempt	8
Employees Non-Exempt	27
Stores	
Employees Exempt	9
Employees Non-Exempt	113

PERSONNEL (Cont.)

Surplus, Salvage & Scrap

Employees Exempt	8
Employees Non-Exempt	18
TOTAL	184

Eighteen employees, four exempt and fourteen non-exempt, were transferred to the Surplus, Salvage and Scrap Materials Division from the Stores Division; five employees, three exempt and two non-exempt, were transferred from Construction; and one non-exempt employee was transferred from the Maintenance Division.

Every effort will be made to utilize to the fullest extent possible available employees already on the project and keep new hires to a minimum.

SAFETY AND SECURITY

Purchasing

Safety and Security Meeting Scheduled	1
Number of Employees attending	34
Minor Injuries	1

Stores

Safety and Security Meetings Scheduled	14
Number of Employees attending	121
Minor Injuries	6

Surplus, Salvage & Scrap

Safety and Security Meetings Scheduled	1
Number of Employees attending	24

STATISTICS

Purchasing

Requisitions on hand 10-1-48 (includes 71 assigned to Govt.)	681
Requisitions received during October	2,135
Requisitions placed during October	2,213
Requisitions on hand 10-31-48 (includes 49 assigned to Govt.)	603
HW Orders placed	1,363
TPS Orders placed	149
M.O.'s placed	0
O.R.'s placed	14
Alterations issued	173
Orders Expedited	183
Scrap Sales completed	0
Value of Scrap sold	0

Stores

Number of items added to Stores stock	368
Number of items deleted from Stores stock	17
Items in Stores stock at month end	52,264
Receiving Reports issued	3,671
Store Orders filled	21,526
Emergency Store Orders filled	10
Returnable containers on hand at month end	5,305
Returnable containers on hand over six months	1,275
Total value Inventories at month end (includes spare parts)	$4,102,565.04
Value of Disbursements, not including Cash Sale items	376,732.32*
Value of transfers from Salvage to Stores	7,392.30

* Includes $60,780.49 disbursed to Construction and CPFF Subcontractors.

PLANT SECURITY AND SERVICES DIVISION

MONTHLY REPORT - OCTOBER 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	2	2		
Patrol and Security	659	676	17 (a)	
Safety & Fire Protection	148	169	21 (b)	
Office Services (General & Clerical)	309	311	2 (c)	
TOTAL	1118	1158	40	

NET INCREASE - 40

(a) - 21 New Hires (19 Patrolmen - 2 Clerical)
1 Returned from Leave of Absence (Patrolman)
1 Transferred from Transportation (Patrolman)
1 Transferred from Construction (Clerical)
5 Terminations (4 Patrolmen - 1 Clerical)
2 Removals due to Leave of Absence (Patrolmen)

(b) - 24 New Hires (Firemen)
3 Terminations (Firemen)

(c) - 13 New Hires (10 Clerical - 3 General)
1 Transferred from Accounting (Clerical)
2 Returned from Leave of Absence (1 Clerical - 1 General)
8 Terminations (5 Clerical - 2 General)
1 Retired (General)
5 Transferred to other Divisions (3 Clerical - 2 General)

Service Divisions
Plant Security and Services

SAFETY AND FIRE PROTECTION

Safety

Plant Safety Record - 18 days

Injury Statistics

	September	October	Year to Date	Cumulative F/R - 1948
Major Injuries	2	2	14	0.978
Non-Tabulatable Major Injuries	0	0	0	
Sub-Major Injuries	1	4	34	
Minor Injuries	439	428	4789	3.34

Major Infury No. 55

Injury was classified from Minor to Major on October 4, 1948, when injured was hospitalized for more extensive treatment.

September 25, 1948 at 3:00 p.m., an employee of the "P" Division, incurred second and third degree burns to ankle of right foot. The injured was seated along side a canning pot and was wearing all required protective equipment. The injury happened when a fellow employee in placing a slug into the canning pot let the slug slip from the tongs which resulted in hot molten metal being splashed on the injured's foot.

Major Injury No. 56

October 13, 1948 at 9:07 p.m., an employee of the Plant Security and Services Division, incurred internal injuries and lacerations to the chin when he and another patrolman crashed their squad car into a project locomotive. Visibility was good, the train was sounding warning signals, and the necessary lights were in operation on the locomotive. A hot match used in lighting a cigarette had been dropped on the observers trousers and while inspecting to see if a hole had been burned, the accident occurred. Proper care and caution had not been exercised in approaching the railroad crossing.

Sub-Major Injury No. 127

Injury was classified as Sub-Major on October 5, 1948.

September 28, 1948, an employee of the 3000 Area Construction Division, sustained a fractured nose while assisting to establish locations for concrete slab openings on formwork. Boilermakers were working approximately twenty feet overhead installing 10" steel pipe that had just been hoisted to the staging. A piece of pipe with a short length (approximately three feet) of pipe fastened to an elbow, rolled over causing the short length of pipe to hang down vertically from the staging where it remained. The injured saw the piece of pipe start down and became startled. He started running along the edge of the building. He struck a steel brace with his safety hat and caused the hat to hit his nose. Injured fell forward on his face where he was picked up and taken to first aid.

Service Divisions
Plant Security and Services

Sub-Major Injury No. 127½

October 2, 1948, an employee of the 300 Area "P" Division incurred fractures to the 7th and 8th rib of the left side when he slipped against a work bench. The injured was assigned as a relief operator responsible for housekeeping assignments but not acting operator in a relief capacity. While making a cleanup around a quench tank with a counter brush and dust pan in a squatting position, he attempted to stand up. His right foot slipped on a wet place on the floor plate. In attempting to right himself he lunged to the left striking his left side on a work table adjacent to the quench tank. The force of the contact with the table caused fracture to the ribs.

Sub-Major Injury No. 128

October 7, 1948 at 3:00 p.m., a patrolman of the Plant Security and Services Division, fractured the 7th and 8th ribs of the right side while climbing off the left side of an M-8 tank. The injured grasped the turret and attempted to find the foot hold with his foot. When he did not find it easily he decided to slide down the side of the tank to the ground. On completion of this slide his feet still lacked about two inches of touching the ground, and he probably stopped suddenly, placing a strain on his right shoulder that cracked his ribs.

Sub-Major Injury No. 129

October 18, 1948 at 11:00 a.m., an employee of the 3000 Area Construction Division cracked 10th, 11th, and 12th ribs on the back of a chair. The injured was preparing papers for mailing. This work was being done on a table The table was between the injured and a telephone on a desk. A straight back chair was pushed into the table at the end. The injured moved around the table to answer the telephone on the desk. Injured's foot slipped causing him to fall and strike the right side of his chest against the back of the chair.

Safety Meetings

There were 704 Safety Meetingsheld during the period of October 1 through October 31, 1948, with a total actendance of 8,414.

Safety Spectacles

Orders were placed for 50 pairs of prescription safety spectacles during the perio of October 1 through October 31, 1948; 81 pairs of prescription safety spectacles were checked, received, and fitted; and 169 adjustments and repairs were made to all types of safety spectacles.

Exposure Hours

There were 1,503,469 exposure hours from October 1, 1948, to and including October 31, 1948.

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Service Divisions
Plant Security and Services

100 Areas Activities

There has been a decided drop in the minor injuries in the 100-B and 100-F Areas.

200 Areas Activities

A fire inspection was made of the whole 200 East Area.

Four follow-up meetings were held in regard to the Two-Second Safety Thought before each job.

Six films were shown to employees in both areas.

An investigation was held with the 200 East Area Instrument Division on their method of handling scale tanks while the scales are being overhauled.

Safety Orientation was given to five new employees.

300 Area Activities

Arranged for and interpreted the results of the analysis of two samples of material to be tried by the Transportation Division as a soil sterilizer.

A study of the operations in the 314 Building was made, and several recommendation have been presented to the "P" Division for their action. The 313 and 305 Buildings are to be investigated during November.

700-1100 Area Activities

Attendance was made at as many safety meetings as possible to further the interest created by the topic-of-the-month for September and October, "A Split Second Thought". Other than those meetings held by supervision, the Safety Engineer talked to approximately 1000 employees on that subject.

In conjunction with the regular topic, a fire prevention talk was arranged and a demonstrative movie on fire extinguishing was shown whenever feasible.

Several pieces of new equipment were checked, and recommendations were made for safety and operation.

Effort is being applied in an attempt to have a dust collector system installed in 722 hanger carpentery shop.

A publicity and stimulating campaign has been started in the 700 Area in an attempt to establish one safe year. Record clocks, personl contact, safety meetings, and other means are being employed.

A fire inspection was made of several establishments at the request of the Fire Prevention Division during Fire Prevention Week.

Service Divisions
Plant Security and Services

Fire Department - Fire Prevention Week

Education of the employees to their individaul and collective responsibility in the prevention of fires was paramount this week. Demonstrations were given to assembled employees from each department in each operating area as scheduled by the program. A complete description of all demonstrations was conducted by voice amplification.

Each demonstration consisted of instruction in the proper use of First Aid appliances on all types of fires.

Small sheds, which were transported from area to area, were ignited; alarm transmitted from the nearest box; and responses made by the Auxiliary Fire Brigades in the areas, who extinguished the fire. This was to demonstrate to the employees just what occurs at an actual fire from the time of origin to extinguishment. An estimated total of 1100 employees from the combined areas witnessed these demonstrations.

Talk was made over radio station KPKW in Pasco, in conjunction with other ranking officers, to start observance of this week.

N.F.P.A. Posters and Folders were distributed throughout each area.

Plant inspections were conducted by committees from the various departments in each area this week.

Evacuation drills were conducted in office buildings and laboratories, 300 Area.

Talks were given on Fire Prevention by the Area Inspectors to groups in Safety Meetings in the various areas.

General

The school Safety Program has been turned over to the new Community Safety Supervisor.

A card index system for the Safety Office of keeping record of safety films in use and needing repairs has been set up. New safety films have been requested.

A safety material distribution list to all General Electric employees through division heads has been prepared for circulating certain safety materials.

An electric outlet to eliminate the use of extension cords has been installed in the Safety Records Office.

Final inspection was made of the additions to the 703 Building.

A list of equipment needed for the operation of 100-H Fire Station was submitted to Construction.

The fire protection of the 108-B Building in connection with a new operation to be carried on in this building was discussed with the project engineers.

The fire protection for the new Electrical Distribution Building was reviewed.

Service Divisions
Plant Security and Services

The testing of a new truck for fire fighting in desert was scheduled for next month.

The "P" Division jobs in the 300 Area are being studied from the Safety point of view.

FIRE PROTECTION

Fires	Number of Fires		Estimated Damage	
	September	October	September	October
Plant Area	10	10	$ 23.00	$ 45.00
Miscellaneous	1	0	No Damage	No Damage
Construction Fires	0	4		$ 3.00

On September 30, 1948, at 2:30 p.m., the cross arm of a power pole 1/2 mile south of the Pistol Range was burned. Voltage creeping ignited the wooden cross arm. The use of metal structures instead of wooden poles would have prevented this fire.

Routine Duties

Fire Extinguishers

Inspected	2,248
Installed and Relocated	118
Refilled	854
Repaired	11
Winterized	756

Gas Masks

Inspected	99
Serviced	17

Fire Drills and Lectures

Outside	76
Inside	86
Auxiliary Brigade	153
Safety Meetings	36

All fire alarm boxes in the Industrial Area were tested.

All fire hose houses, hydrants, and lines in Plant Areas were inspected and hydrants flushed.

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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 Area	Misc. Area	3000 Area	Pasco Area	TOTAL
Minor Injuries	98	14	29	38	71	87	58	13	19	1	428
Sub-Major Injuries	1	0	0	0	0	0	0	1	2	0	4
Major Injuries	1	0	0	0	0	0	0	1	0	0	2
Days since last Tabulatable Major Injury	36	158	640	1286	353	86	154	18	48	458	
Days since last Sub-Major Injury	29	121	144	376	326	206	82	24	13	384	
Days without a Minor Injury	5	20	8	8	4	4	8	21	17	30	
Safety Meetings Conducted	85	57	69	65	60	83	250	6	7	22	704
Number in Attendance	1588	323	545	620	528	991	3578	63	104	74	8411
Safety Spectacles Delivered	24	7	3	6	10	13	18	0	0	0	81
Safety Spectacles Serviced	13	17	15	13	45	38	28	0	0	0	169

MONTHLY INJURY ANALYSIS

Period - September 21 through ctober 20, 1948

Minor Injuries

	Burns	Abrasions	Contusions	Lacerations	Punctures	Splinters	Strains & Sprains	Foreign Body	Blisters	Unclassified	TOTAL	
											OCTOBER	LAST MONTH
GENERAL	0	0	0	0	0	0	0	0	0	0	0	0
MANUFACTURING	34	46	36	54	14	28	12	21	9	13	267	247
COMMUNITY	1	1	1	17	1	2	3	0	0	3	29	31
ACCOUNTING	0	0	1	1	1	0	0	0	1	0	4	3
LEGAL	0	0	0	0	0	0	0	0	0	0	0	0
TECHNICAL	18	7	3	22	2	2	2	1	0	3	60	47
MEDICAL	0	1	2	2	1	0	1	0	0	0	7	14
HEALTH INSTRUMENT	1	9	1	6	4	1	1	0	2	0	25	13
SERVICE	2	8	3	14	3	2	1	2	1	4	40	45
EMPLOYEE AND COMMUNITY RELATIONS	0	1	0	1	0	0	0	0	0	0	2	0
DESIGN & CONSTRUCTION	1	2	4	4	2	4	3	3	0	1	24	24
TOTAL	57	75	51	121	28	39	23	27	13	24	458	
LAST MONTH	58	74	51	117	25	26	23	21	12	17		424

Service Divisions
Plant Security and Services

OFFICE SERVICES DIVISION

General Services Division

Laundering volumes were as folows:

Plant Laundry (Building 2723)	September	October
Coveralls - Pieces	28,146	26,682
Towels - Pieces	9,400	8,312
Miscellaneous - Pieces	63,692	62,120
Total Pieces	101,238	99,111
Total Dry Weight - Lbs.	136,568	134,267
Richland Laundry (Building 723)		
Flatwork - Pieces	149,965	146,160
Rough Dry - Pieces	29,309	29,354
Finished - Pieces	5,239	5,328
Total Pieces	184,513	180,842
Total Dry Weight - Lbs.	119,933	117,547
Monitoring Section (Building 2723-W)		
Poppy Check - Pieces	49,835	60,939
Sealer Check - Pieces	95,241	94,623
Total Pieces	145,076	155,562

Clerical Services Division

Telephone

The September toll bill is $2,863.12 less than August, and it is believed that this is due to the new toll ticket procedure which allows closer control over official toll calls.

Line capacity of the Telephone Exchange is as follows:

	September	October
Lines working as 1 - 0 Lines	630	632
2 - 0	54	62
0 - PBX	23	24
1 - N	23	23
2 - N	2	2
N - PBX	1	0
2-0-R Combination	1	2
Total Official Lines	734	744

Service Divisions
Plant Security and Services

Line capacity of the Telephone Exchange: (contined)

	September		October	
(Total on preceeding page brought forward)		734		744
Lines working as 1 - F Lines	85		91	
2 - F	15		16	
F - PBX	6		6	
1 - R	8		8	
2 - R	1262		1259	
2 - RF	23		22	
3 - RF	2		2	
Total Non-Official Lines		1401		1404
Vacant Lines		65		52
Total lines in Multiple Bank		2200		2200

Mail and Stationery

Mail boxes have been installed in all dormitories and keys issued to all occupants as well as to the post office. The post office began handling all dormitory mail on October 1, 1948.

	September	October
Pieces of First Class mail received	42,906	31,731
Pieces of Parcel Post mail received	981	1,057
Pieces of Registered mail received	382	413
Pieces of Insured mail received	210	198
Pieces of Special Delivery mail received	329	308
TOTAL	44,808	33,707
Pieces of Mail sent out	18,579	49,235
Amount of money used in Postage Meter	$1,044.96	$2,295.38
Teletypes sent out	2,856	2,645
Teletypes received	2,468	2,308
Total teletypes handled	5,324	4,953

Office Equipment

An order for 64 adding machines has been placed and the machines are enroute. Another order for 85 machines is being placed on the basis of orders on hand in the Operations and Construction Divisions.

It was decided not to place an order for file cabinets since 186 file cabinets were released from permanent record storage by transferring material to cardboard file cartons. A survey to be made later will determine the items of equipment and quantity required for future use by Operations.

	September	October
Office machines repaired in shop	215	283
Office machine service calls	180	262

Service Divisions
Plant Security and Services

Printing

An order was placed for two new Multilith machines, with one old machine being traded in on this purchase.

Printing is somewhat overloaded at this time due to additional load caused by letters to employees; however, it is believed that no increase in personnel will have to be made unless we have a future increase.

	September	October
Multilith orders received	332	172
Multilith orders completed	301	186
Multilith orders on hand at month's end	54	40
Mimeograph orders received	2008	2301
Mimeograph orders completed	2008	2301
Mimeograph orders on hand at month's end	0	0
Ditto orders received	2906	3043
Ditto orders completed	2906	3043
Ditto orders on hand at month's end	0	0

Stenographic Services

Work volume shows that the Stenographic Services Section may be reduced in number of permanent personnel; however, plans to utilize this section for training of all stenographic personnel as they are hired, may leave the average number of personnel about the same.

Permanent Records Storage

Preperations are being made to take a sample Record inventory of all material in the hutment. This will be used to see what we may run into in the various offices as well as seeing if our inventory form is correct.

	September	October
Cartons of material received for storage	138	125
Cartons of material processed & stored	138	125
Cartons of material shipped	0	0

Summary of persons viewing records for the month of October, 1948:

General Electric	70	59
du Pont	34	25
Atomic Energy Commission	8	4
	112	88

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Service Divisions
Plant Security and Services

PATROL AND SECURITY

General

Off-site protection and security surveys were conducted by a representative of the Hanford Works Security Division on the following dates:

October 2, 3 & 4	Giffels & Vallet, Detroit, Michigan
October 6	Kellex Corporation, New York, N. Y.
October 11	National Carbon Company, Morganton, N. C.

It is contemplated that Hanford Works Patrol will loan a supervisor to the Morganton, North Carolina, installation for a short period for guard instruction purposes

A procedure covering patrol activities in the event of an evacuation of the 241-BY area was issued on October 1st.

The temporary post located at the intersection of 3rd and "D" Streets in the 200-W area was discontinued on October 7th.

On October 25th, the patrol was placed on a five-day work-week schedule, with additional hours being worked to provide an overlap at shift change necessary to handle traffic in the various areas. In accordance with Mr. Shaw's letter of September 22nd, 1948, several posts were eliminated at this time.

A comprehensive spot car shake-down for off-going shifts and the between-shift shake-down is being stepped up at all barricades.

Arrangements were made October 22nd, to operate the 272-Z area on a special 234-5 clearance on the swing shift. The area will continue to operate as an "Exclusion" area on the day and midnight shifts. Personnel cleared for the special work period will be designated on the area kardex by having a red tab placed on the upper right hand corner of their photos. Building supervision will assume the responsibility for clearance of the area of uncleared personnel prior to the start of the special work.

Procedure memorandum No. 23, entitled "Unusual Incidents Involving Thefts, Sabotage or Espionage" was issued by the Security Division on October 29th, whereby the Federal Bureau of Investigation will be notified.

An all-area test will be made each shift over the patrol inter-area communication phone system.

The 100-H area exclusion area badge house is being designed and constructed.

On October 26, at 11:20 a.m., the Advance Airborne Military group, numbering approximately 250, arrived at the Richland Atomic Energy Commission airport.

These groups were escorted by patrol escorts to the following locations:

a. Prosser, Yakima and Richland barricades (simulated road blocks).
b. Midway sub-station, where the troops were deployed on a problem converging towards the Columbia River.
c. The Hanford Airstrip, where a reserve mobile unit and the Command Post of the Battalion were established.

Patrol escorts remained with these groups until 1:30 a.m., October 27th. The escorts also furnished radio communications for the various outposts.

The Patrol emergency officer was instructed on October 26th, to immediately relay all data relative to emergencies, army maneuvers, etc., to the Atomic Energy Commission Intelligence Unit, telephone 1504, during the army maneuvers.

The main army vehicle convoy, consisting of approximately 750 personnel, started to arrive at the bivouac area west of the Yakima barricade at 8:00 p.m., October 26th.

Military Police assigned to this unit were then permitted to man the perimeter barricades to authorize the ingress and egress of necessary military personnel.

On October 26th, as a result of the Atomic Energy Commission Security "alert", all plant patrol units were placed on special emergency basis. In line with this "alert", patrol M-8 Light Armored Cars were stationed at all barricades on October 27th.

On October 29th, the military units planned an assimilated aggressive force of fifty soldiers who were to attempt to hide out in the plant area during the daytime and to execute a night mission. The military groups and the patrol division were to work in conjunction in combating this aggressive force. The combating action started at 9:30 a.m., after the aggressive groups had established their positions.

By 3:00 p.m., this same date, the patrol division had captured 42 of the aggressive force. At 6:00 p.m. four more were captured and at 9:45 p.m., two more were captured although the problem had been called off at 9:30 p.m.

Additional "alerts" were received from the Atomic Energy Commission Security Division on October 30th. As a result of these alerts, provisions were made to blackout the various construction areas, the 300 area, North Richland and Richland Village in case of need. Interested units, such as Municipal Patrol and Management were alerted to this possible emergency.

On October 31st, the military groups conducted an aggressive problem similar to those held on October 29th. The patrol division was requested not to enter these activities.

Trial blackouts were held on October 27th in the 100-B area at 5:08 a.m., in 100-D, 200-East and 200-North areas at 5:10 a.m., 200-West area at 5:11 a.m. and the 100-F area at 5:14 a.m.

Effective October 27th, the west badge house in the 700 area will be closed and locked at 5:00 p.m. each day and remain so until 7:00 a.m.

PATROL

The 200 areas handled 114 Process escorts between the areas.

Requests handled totaled 552, mainly consisting of opening doors, gates and escorts for employees of other departments.

Service Divisions
Plant Security and Services

A total of 199 construction employees were escorted into areas for First Aid treatment.

There were 130 unusual incident reports received, consisting mainly of contraband picked up at barricades, lost badges, pencils and traffic violations.

There were 519 Classified escorts handled during the month.

Five employees were given emergency first aid treatment in the areas by patrol supervision during periods when medical personnel were absent from areas.

The outer area traffic car issued eleven citation tickets, twenty-one verbal warnings and 75 details in addition to their regular duties.

Practice evacuations were held as follows:

10-11-48	100-F Area	9:56 a.m.
10-18-48	100-B Area	8:33 a.m.
10-26-48	100-D Area	2:08 p.m.

Training

New gun stands were installed on the Army "L" range and basic training was continued during this period.

The Army "L" and Machine Gun Course were not fired. All field instruction for advanced training was on the M-8 Light Armored Car and its equipment. All personnel were given nomenclature on the .30 cal. and .50 cal. machine guns. Operators permits were obtained for personnel after driving instructions were given on the M-8.

The Safety Meetings included the topic for the month "A split second thought may prevent an injury".

The Security Meeting included a film on "The Safety of Radiology".

Health talks were given on "Polio".

Effective October 25th, the patrol training school returned to the four-week schedule for advanced training.

SECURITY

Operations Section

There were 341 Security Meetings held and attended by 5,421 General Electric employees.

Security education talks by M. J. Headley, Security speaker: 367 employees attended.

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Plant Security and Services

Employee Clearances

Class "Q" clearances received on old employees this month	161
Class "Q" clearances received on old employees to date	3,479
Class "Q" clearances received on new employees this month	236
Class "Q" clearances received on new employees to date	4,943
Class "Q" clearances received on both old and new employees since February 17, 1947	8,422
Formal "P" clearances awaiting change to "Q"	202

Statistical Summary of Outstanding Area Badges

September

	A	B	C	Total
100-B	609	1297	680	2586
100-D	729	1331	654	2712
100-F	756	1287	649	2692
200-E	1184	1340	483	3007*
200-W	1311	1442	511	3264
200-N	57	780	166	1003
300	1483	1423	390	3296
100-DR	4606	420		5026
241-TX	2395	307		2702
241-BY	530			530

*Includes 47 "A" Badges at Riverland Yards.

October

	A	B	C	Total
100-B	645	1326	691	2662
100-D	765	1363	656	2784
100-F	767	1330	640	2737
200-E	1149	1430	490	3069*
200-W	1316	1492	513	3321
200-N	52	790	167	1009
300	1523	1437	388	3348
100-DR	4712	422		5134
241-TX	1659	298		1957
241-BY	493	26		519

*Includes 47 "A" Badges at Riverland Yards.

Visitors or Temporary Badges

Area	September	October
100-B	113	147
100-D	196	243
100-F	219	260
200-E	175	221
200-W	258	348
200-N	106	144
300	333	448
100-DR	287	375
241-TX	144	178
241-BY		3
Totals	1831	2367

Special Clearance Section

Follwing is a statistical summary of emergency clearance status of vendor and consultant vendor companies:

Service Divisions
Plant Security and Services

Total companies forwarded to AEC this month:	9	Personnel	39
Total companies forwarded to AEC to date:	175	Personnel	1805

Total companies cleared for restricted data this month:	24	Personnel	38
Total companies cleared for restricted data last month:	26	Personnel	88

No new companies forwarded to the Atomic Energy Commission this month.

Number and type of clearance granted by the AEC this month to vendors:

Formal "Q"	46
Formal "P"	5
Emergency "Q"	7

Emergency clearances requested this month for General Electric personnel:	2
Emergency clearances requested for General Electric personnel to date:	157
Emergency clearances requested for consultants and vendors this month:	5
Emergency clearances received for consultants and vendors this month	7
Emergency clearance received this month for General Electric personnel:	1
Emergency clearances received for General Electric personnel to date:	116
"Q" clearance cards issued to consultants and vendors this month:	4

HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING OCTOBER 31, 1948

Name – Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
MEDICAL DIVISION						
I. Visitors to this Works						
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Consultation on medical problems	W. D. Norwood P. A. Fuqua	10-7-48	10-8-48	X	
Dr. E. Pratt State Dept. of Health Olympia, Washington	Consultation regarding the Hearing Clinic	R. R. Sachs	10-15-48 10-29-48	10-16-48 10-30-48		X X
CONSTRUCTION DIVISION						
I. Visitors to this Works						
R. C. Robin General Electric Company Schenectady, New York	Survey Hanford Works on subject of records and histories	G. P. Church	10-12-48	10-19-48	X	
II. Visits to other Installations						
J. H. Barry to: Willamette Iron & Steel Portland, Oregon	Discuss the Hood program	D. J. Kooker	10-25-48	10-26-48		X
J. C. Hamilton to: Alaskan Copper Works Seattle, Washington	Inspect materials	E. T. Cahill M. Rosen	10-5-48	10-6-48	X	

[redacted]

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. C. Hamilton to: Washington Iron Works Seattle, Washington	Set up inspection procedure	O. C. Nugent	10-5-48	10-6-48	X	
J. C. Hamilton to: Pacific Car & Foundry Seattle, Washington	Regarding 100-DR critical materials	A. Thompson H. J. Evans	10-5-48	10-6-48	X	
J. C. Hamilton to: Western Foundry Company Portland, Oregon	Discuss revised specifications on cast iron blocks	E. Huffschmidt	10-27-48	10-27-48		X
J. C. Hamilton to: Cascade Manufacturing Co. Portland, Oregon	Regarding welding on cover plug assemblies	R. C. Warren F. E. Pearson	10-28-48	10-28-48	X	
J. C. Hamilton to: Paul Brong Company Portland, Oregon	Inspection of transfer assembly	P. Brong	10-28-48	10-28-48		X
J. C. Hamilton to: Gunderson Brothers Portland, Oregon	Outline requirements on base plate assembly	W. Love	10-28-48	10-28-48		X
H. A. Hauser to: Western Foundry Company Portland, Oregon	Discuss revised specifications on cast iron blocks	E. Huffschmidt	10-27-48	10-27-48		X
H. A. Hauser to: Cascade Manufacturing Co. Portland, Oregon	Regarding welding on cover plug assemblies	R. C. Warren F. E. Pearson	10-28-48	10-28-48	X	
T. M. Petty to: Valley Iron Works Yakima, Washington	Settle difficulties on HWC-3939	H. Lawrence	10-15-48	10-16-48		X
J. B. Whitworth to: Angelo Colonna Company Philadelphia, Pennsylvania	Inspect materials being fabricated for Hood program	A. Colonna	10-1-48	10-1-48		X

Name – Organization	Purpose of Visit	Person Contacted.	Arrival	Departure	Restricted Data: Classified	Restricted Data: Unclassified
J. B. Whitworth to: York Naval Ordnance Plant York, Pennsylvania	Inspect materials	Captain Rook Commander Richards	10-2-48	10-2-48		X
J. B. Whitworth to: Vermont Marble Company Proctor, Vermont	Regarding "B" Block Program	R. Proctor	10-4-48	10-5-48	X	
J. B. Whitworth to: S. Blickman Company Weehawken, New Jersey	Regarding the Hood program	B. Blickman	10-6-48	10-6-48		X
J. B. Whitworth to: Kellex Corporation New York, New York	Technical consultation	K. C. Vint (CE representative)	10-7-48	10-8-48	X	
J. B. Whitworth to: Standard Stoker Company Erie, Pennsylvania	Regarding "B" Block Program	J. B. MacKenzie	10-12-48	10-12-48	X	
J. B. Whitworth to: Pennsylvania Furnace & Iron Warren, Pennsylvania	Regarding Hood program	J. D. Fries	10-13-48	10-13-48		X
J. B. Whitworth to: Alloy Fabricators, Inc. Lodi, Ohio	Inspection of materials	Mr. Warren	10-14-48	10-14-48		X
J. B. Whitworth to: Columbus Die, Tool and Machine Co. Columbus, Ohio	Inspection of materials	H. Price	10-15-48	10-15-48		X
J. B. Whitworth to: Weber Showcase Co. Los Angeles, California	Regarding Hood program	D. Morrison	10-18-48	10-18-48		X
J. B. Whitworth to: Jensen Machinery Company Oakland, California	Regarding Hood program	Mr. Osborn	10-19-48	10-19-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. B. Whitworth to: Willamette Iron & Steel Portland, Oregon	Relative to Hood program	D. J. Kooker	10-20-48	10-20-48		X
G. E. Hotaling to: Kellex Corporation New York, New York	Technical consultation	K. C. Vint (CE representative)	10-7-48	10-8-48	X	
G. E. Hotaling to: Standard Stoker Company Erie, Pennsylvania	Regarding "B" Block Program	J. B. MacKenzie	10-12-48	10-12-48	X	
G. E. Hotaling to: Pennsylvania Furnace & Iron Warren, Pennsylvania	Regarding Hood program	J. D. Fries	10-13-48	10-13-48		X
G. E. Hotaling to: Alloy Fabricators, Inc. Lodi, Ohio	Inspection of materials	Mr. Warren	10-14-48	10-14-48		X
G. E. Hotaling to: Columbus Die, Tool and Machine Co. Columbus, Ohio	Inspection of materials	H. Price	10-15-48	10-15-48		X
G. E. Hotaling to: Weber Showcase Co. Los Angeles, California	Regarding Hood program	D. Morrison	10-18-48	10-18-48		X
G. E. Hotaling to: Jonson Machinery Company Oakland, California	Regarding Hood program	Mr. Osborn	10-19-48	10-19-48		X
G. E. Hotaling to: Willamette Iron & Steel Portland, Oregon	Relative to Hood program	D. J. Kooker	10-20-48	10-20-48		X
L. G. Jones to: Western Foundry Company Portland, Oregon	Relative to new procedure on checking cast iron blocks	E. Huffschmidt	10-4-48	10-4-48		X

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	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
	Relative to new procedure on checking cast iron blocks	W. Paulson	10-4-48	10-4-48	X	X
Works	Relative to new procedure on checking cast iron blocks	W. Artis	10-4-48	10-4-48	X	X
ry Company						X
Works	Engineering consultation	G. S. Cochrane	10-4-48	10-5-48	X	X
pany	Engineering consultation	G. S. Cochrane	10-4-48	10-4-48	X	X
pany	Discuss power problems	E. P. Peabody	10-6-48	10-6-48	X	X
inistration	Information pertaining to proposed maping of Richland Area by U.S.G.S.	A. T. Donnels J. A. McCool	10-7-48	10-8-48	X	X
urvey	Information on boiler food-water treatment	A. E. Rhodes	10-4-48	10-5-48	X	X
Eng. Co. n	Discuss air-conditioning controls for ventilating system 234-5 Building	J. A. Kaweckis B. E. Woodward	10-11-48	10-12-48	X	X
Company k	Discuss technical aspects of future tank design	O. H. Pilkey	10-12-48	10-12-48	X	X
Iron Co. lifornia	[redacted]					

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. H. Frame to: Argonne National Laboratory Chicago, Illinois	Conference	S. Lawroski	10-1-48	10-7-48	X	
D. D. Streid to: General Electric Co. Schonectady, New York	Discuss designs and engineering conference	D. H. Marquis	10-9-48	10-15-48	X	
D. D. Streid to: Giffels & Vallet Detroit, Michigan	Discuss designs and engineering conference	C. J. Steiglador	10-9-48	10-15-48	X	
F. C. McInerney to; Alaskan Iron & Copper Works Seattle, Washington	Material and equipment	R. A. Kamb	10-1-48	10-1-48	X	
S. W. Bookman to: Giffels & Vallet Detroit, Michigan	Determine status of specific job	R. F. Giffels	10-1-48	10-16-48	X	
R. C. Hollinghead to: Willamette Iron & Steel Portland, Oregon	Consultation with hood vendor concerning engineering changes	C. M. Siglo	10-1-48	10-9-48	X	
R. C. Hollinghead to: Jonson Machinery Co. Oakland, California	Consultation with hood vendor concerning engineering changes	Mr. Osborne	10-1-48	10-9-48		X
R. C. Hollinghead to: Mabor Showcase Company Los Angeles, California	Consultation with hood vendor concerning engineering changes	Mr. Morrison	10-1-48	10-9-48		X
J. A. Carlon to: Westinghouse Mfg. Co. San Francisco, California	Consultation on purchase of equipment	Mr. Astin	10-17-48	10-20-48		X
G. H. Syrovy to: Western Foundry Portland, Oregon	Coordinate design specifications with vendor	Mr. Hoffsmith	10-26-48	10-28-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. M. Holeman to: Remington Rand, Inc Seattle, Washington	Witness demonstration of portable television for viewing industrial processes	R. A. Innis	10-28-48	10-29-48		X
J. M. Holeman to: Gaertner Scientific Corp. Chicago, Illinois	Inspection	P. F. Moyer	10-19-48	10-22-48		X
R. A. Skrinde to: Fish & Wild Life Service Seattle, Washington	Secure fish and wild life approval on river screens for certain area.	Mr. Bair	10-22-48	10-24-48		X
F. H. Amos to: Fish & Wild Life Service Seattle, Washington	Secure fish and wild life approval on river screens for certain area.	Mr. Bair	10-21-48	10-23-48		X
HEALTH INSTRUMENT DIVISION						
I. Visitors to this Works						
G. W. Beadle Cal. Institute of Technology Pasadena, California	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
D. W. Blank John Hopkins University Baltimore, Maryland	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
L. R. Donaldson University of Washington Seattle, Washington	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
H. E. Ensminger Washington State College Pullman, Washington	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
E. W. Goodpasture Vanderbilt University Nashville, Tennessee	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
A. Gregg Rockefeller Institute New York, New York	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
Harriet Hardy Los Alamos Scientific Lab. Los Alamos, New Mexico	Health Instrument and Medical Program	H. M. Parker H. A. Kornberg (W. D. Norwood P. A. Fuqua)	10-26-48	10-27-48	X	
B. Hastings Harvard Medical School Boston, Massachusetts	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
J. H. Jenson Atomic Energy Commission Biology Branch Washington, D. C.	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
D. Law Atomic Energy Commission Intelligence & Security Washington, D. C.	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
Mrs. Frances Montgomery Atomic Energy Commission (Administrative Assistant) Washington, D. C.	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
E. C. Stakman University of Minnesota Minneapolis, Minnesota	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg.	10-9-48	10-10-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
S. Warren Atomic Energy Commission Division of Biology & Medicine Washington, D. C.	Conference with Advisory Committee for Biology & Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
J. T. Wearn Western Reserve School of Medicine Cleveland, Ohio	Conference with Advisory Committee for Biology Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
R. E. Zirkle University of Chicago Chicago, Illinois	Conference with Advisory Committee for Biology Medicine	H. M. Parker H. A. Kornberg	10-9-48	10-10-48		X
II. Visits to other Installations						
P. L. Eisenacher to: Oak Ridge Nat'l Lab. Oak Ridge, Tennessee	Consultation on 5-fold hand counters	A. H. Dahl L. E. Rasmusson	10-25-48	10-28-48	X	
H. A. Kornberg to: Argonne National Lab. Chicago, Illinois	Information Directors Meeting	A. H. Bruce S. Warren, (AEC)	10-15-48	10-26-48	X	
G. H. Whipple to: Argonne National Lab. Chicago, Illinois	Attend information meeting	H. Young	10-15-48	10-25-48	X	
INSTRUMENT DIVISION						
I. Visitors to this Works						
G. W. Dunlap Gen. Engineering & Consulting Schenectady, New York	Discuss radiation instrumentation	W. H. Mathis J. G. Haines	10-12-48	10-15-48	X	
II. Visits to other Installations						

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
J. G. Haines to: Argonne National Lab. Chicago, Illinois	Information meeting and discuss radiation instrumentation	J. A. Simpson Dr. Shonka P. S. Chapman	10-18-48	10-22-48	X	
N. T. Hildreth to: Knolls Atomic Power Lab. Schenectady, New York	Discussion on Mica Window tubes and MCM tubes	C. A. Hansen, Jr.	10-25-48	10-26-48	X	
N. T. Hildreth to: Brookhaven National Lab. Upton, New York	Gaseous discharge conference	J. B. H. Kuper	10-27-48	10-29-48	X	
PROJECT ENGINEERING DIVISION						
I. Visits to other Installations						
H. A. Lee to: Puget Sound Naval Yard Bremerton, Washington	Discussion in regard to EB-2377, Sand Filter	S. L. Allison	10-7-48	10-8-48		X
"P" DIVISION						
I. Visitors to this Works						
H. H. Jason Carboloy Company Oakland, 3, California	Reviewed tool brazing and grinding procedures for the machining operation in the 300 Area	E. P. Lee R. O. Mohann W. A. Blanton F. E. Jochen	10-6-48	10-7-48	X	
SECURITY AND SERVICES DIVISION						
I. Visits to other Installations						
T. B. Farley to: Giffels & Vallet Detroit, Michigan	Protection and Security Surveys	C. F. Ladzick	10-2-48	10-4-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
T. B. Farley to: Kellox Corporation New York, New York	Protection and Security Surveys	G. E. Sage	10-6-48	10-6-48	X	
T. B. Farley to: National Carbon Company Morganton, North Carolina	Protection and Security Surveys	L. F. Perkins G. H. Fancher	10-11-48	10-11-48	X	
TECHNICAL DIVISION						
I. Visitors to this Works						
J. R. Holmes General Electric Company Pittsfield, Massachusetts	Technical consultation	O. H. Greager	10-7-48	10-8-48	X	
L. L. Wyman Knolls Atomic Power Laboratory Schenectady, New York	Discuss metallurgical problems	C. E. Lacy	10-18-48	10-19-48	X	
II. Visits to other Installations						
A. A. Johnson to: Argonne National Lab. Chicago, Illinois	Attend information meeting and symposium	S. L. Simon	10-18-48	10-22-48	X	
A. B. Carson to: Argonne National Lab. Chicago, Illinois	Attend information meeting and symposium	S.L. Simon	10-18-48	10-22-48	X	
H. W. Ritchey to: Argonne National Lab. Chicago, Illinois	Attend information meeting and symposium	S. L. Simon	10-18-48	10-22-48	X	
D. H. Curtiss to: Argonne National Lab. Chicago, Illinois	Attend information meeting and symposium	S. L. Simon	10-18-48	10-22-48	X	

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
V. L. Redding to: Argonne National Lab. Chicago, Illinois	Attend information meeting and symposium	S. L. Symposium	10-18-48	10-22-48	X	
C. W. J. Wonde to: Argonne National Lab. Chicago, Illinois	High Flux Reactor Meeting	W. H. Zinn	10-5-48	10-8-48	X	
R. Ward to: Argonne National Lab. Chicago, Illinois	Project information meeting	F. Foote	10-18-48	10-19-48	X	
L. D. Turner to: Argonne National Lab. Chicago, Illinois	Project information meeting	F. Foote	10-18-48	10-21-48	X	
L. D. Turner to: Knolls Atomic Power Lab. Schenectady, New York	Discuss hot metallurgy design	J. P. Howe	10-25-48	10-26-48	X	
T. S. Jones to: Vulcan Crucible Steel Co. Aliquippa, Pennsylvania	Supervise metal fabrication	L. F. Flower	10-18-48	10-21-48	X	
W. T. Kattner Simonds Saw & Steel Lockport, New York	Supervise metal fabrication	A. D. Potts	10-25-48	10-31-48	X	
R. Teats Simonds Saw & Steel Lockport, New York	Supervise metal fabrication	A. D. Potts	10-25-48	10-31-48	X	
C. G. Stevenson to: Argonne National Lab. Chicago, Illinois	Attend AEC Librarians' conference	H. D. Young	10-15-48	10-16-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
E. A. Webb to: Argonne National Lab. Chicago, Illinois	Attend AEC Librarians' conference	H. D. Young	10-15-48	10-16-48		X
H. A. Moulthrop to: Research Laboratory Schenectady, New York	Technical consultation and inspection concerning 234-5 Project	D. H. Marquis	10-4-48	10-9-48		X
F. Woodfield to: Argonne National Lab. Chicago, Illinois	Technical consultations concerning Redox program	S. Lawroski	10-4-48	10-5-48		X
R. B. Richards to; Argonne National Lab. Chicago, Illinois	Technical consultations concerning Redox program	S. Lawroski	10-4-48	10-5-48		X
V. R. Cooper to: Argonne National Lab. Chicago, Illinois	Technical consultations concerning Redox program	S. Lawroski	10-4-48	10-5-48		X
R. B. Richards to: Standard Oil Dev. Co. Bayway, New Jersey	Technical consultations concerning Redox program	F. W. Schumacher	10-6-48	10-8-48		X
V. R. Cooper to: Standard Oil Dev. Co. Bayway, New Jersey	Technical consultations concerning Redox program	F. W. Schumacher	10-6-48	10-8-48		X
O. H. Greager to: Argonne National Lab. Chicago, Illinois	Solvent extraction conference	S. Lawroski	10-4-48	10-5-48		X
R. H. Beaton to: Argonne National Lab. Chicago, Illinois	Solvent extraction conference	S. Lawroski	10-4-48	10-5-48		X
J. B. Work to: Argonne National Lab. Chicago, Illinois	Attend information meeting	N. H. Hilberry [redacted]	10-18-48	10-20-48		X

on Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
. Hilberry	10-18-48	10-22-48	X	
. Hilberry	10-18-48	10-22-48	X	
. Hilberry	10-18-48	10-22-48	X	
. Hilberry	10-18-48	10-22-48	X	
. Hilberry	10-18-48	10-22-48	X	
. Hilberry	10-18-48	10-22-48	X	

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

SUMMARY - OCTOBER, 1948

Condensed 9-Point Job Improvement Program for staff group was completed with the exception of one meeting. Instructors classes in this Program are approximately 70% complete; and a number of individual classes have started in various divisions.

Open requisitions for additional personnel decreased from 613 at the beginning of the month to 439 at the end of October. Total plant roll increased during October by 103 employees. Recruitment activities for stenographers, typists, comptometer operators, and protective firemen were conducted in Spokane, Washington, and Denver, Colorado.

There were 1,331 employee contacts made by the Employee Relations Group. One employee retired during October. The Community Chest Drive was completed on October 15, with 97.7% of the quota obtained. Fifteen suggestion awards, totaling $ 115.00, were granted during October. Settlements of claims from the North Richland barrack's fire are about completed.

Organization chart, reflecting positions of all monthly employees in each Division, was prepared and distributed to supervision. Publicity was prepared for Fire Prevention Week during October. Nine general news releases were furnished to forty daily newspapers in the Pacific Northwest during the month. Classified advertisements were prepared for Denver newspapers prior to recruiting activity.

The community wage rate survey in Spokane, Seattle, and Tacoma, Washington, and Portland, Oregon, was completed and the results are being analyzed. All craft jobs in the Maintenance Division and the Village Maintenance Group were reviewed. Approval was received from the Atomic Energy Commission for establishing a job rate for Technical Graduates. Hanford Metal Trades Council (A.F. of L.) filed petition with the Regional Director of the N.L.R.B., requesting that their organization be certified as bargaining representative for all production and maintenance employees at the Hanford Works.

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

OCTOBER, 1948

ORGANIZATION AND PERSONNEL

Employment

Effective October 4, 1 stenographer-typist "B" was transferred from the Investigation and Files Group to the Administrative Group of the Employee and Community Relations Division.

Effective October 1, 1 general clerk "D" resigned from the Procurement Group; and on October 22, 1 general clerk "E" terminated.

Effective October 6, 1 stenographer-typist "D" was added to the Procurement Group; and effective October 22, one messenger was added to the Investigation and Files Group.

Effective October 27, a reproduction and photographic assistant "E" was assigned to the Records and Statistics Group as a replacement for an employee, who is being transferred to the Technical Divisions.

Employee Relations

Effective October 14, 1 stenographer-typist "C" was added to the Suggestion System Group.

Public Relations

No organization changes were made in this Group in October.

Labor Relations and Wage Rate

No organization changes were made in this Group in October.

Number of employees on payroll	October
Beginning of month	95
End of month	96
Net Increase	1

This increase in personnel was the result of voluntary resignation experienced during the month of August.

Employee and Community Relations Division

ACTIVITIES

General

The condensed meetings, being held on the 9-Point Job Improvement Program for the benefit of all staff members, was completed with the exception of one session during the past month. Classes in the 9-Point Job Improvement Program have continued for the instructors selected by the various Divisions. This portion of the Program at the end of the month, was approximately 70% complete, and a number of the instructors have also started their individual classes of instruction in their respective Divisions.

Employment

The volume of applicants interviewed during the month of October decreased. A total of 1,180 candidates were interviewed during October as compared to 1,386 during September. The volume of new cases received for investigation decreased from 452 to 449 in October.

At the beginning of the month there were 570 open requisitions for non-exempt personnel, 321 of which were covered by interim commitments. At the end of the month there were 402 open requistions, of which 275 were covered by interim commitments. In addition at the beginning of October there were 43 requisitions for exempt personnel, 29 of the persons requisitioned having accepted offers, 13 having been made offers but acceptances not received; and the remaining in the process of investigation. At the end of October, there were 37 open requisitions for exempt personnel, 20 of the persons having accepted offers, 8 having been made offers but acceptances not received, and the remainder in the process of investigation.

A total of 259 employees were added to the rolls during the past month; 156 were removed, resulting in a net gain of 103 employees in total employment.

During the month of October, the Design Division informed the Employment Office that 11 of the employees from that Division, previously listed as available for transfer were being removed from that list. Of the original 21 made available by the Design Division, 3 were transferred to other departments of the Company, 2 resigned voluntarily, and 2 remained available.

Employee and Community Relations Division

During October the Construction Division informed the Employment Office that it would be necessary to reduce their force by 25 employees. During the month, arrangements were made to transfer 12 of these employees to other Divisions. Subsequent developments made it possible for the Construction Division to retain 11, and re-assign them to other work. Two employees were removed from the payroll for lack of work.

In an effort to procure additional stenographers, typists, protective firemen, and comptometer operators, recruitment trips were made to Spokane, Washington, and Denver, Colorado, by individuals in the Employment Group. As a result of these trips, 17 offers of employment were made in Spokane, and 45 offers of employment made in Denver. These offers were made to 37 firemen, 3 patrolmen, 4 comptometer operators, 10 stenographers, and 8 typists.

In October, 16 new requests for inter-divisional transfers were received, and reviewed by the Employment Group. Ten of the employees requesting such transfers were interviewed, and as a result of these interviews, 6 transfers were effected.

Employee Relations

During the month of October, a total of 1,331 contacts were made with Company employees by Employee Relations Counselors. These contacts resulted in 1,521 inquiries summarized as follows:

Policy	310
Military Service	59
Group Life Insurance	139
Group Disability Insurance	186
Pension Plan	62
Suggestion System	11
Employee Savings Plan	207
G. I. Bill of Rights	3
Social Security	20
Employee Sales Plan	218
Housing	55
Community	31
Personal	81
Income Tax	36
Miscellaneous	103
Total	1,521

Exit interviews were given to 154 terminating employees, and 235 new employees were given orientation. Of this latter number 64% elected to participate in the Group Life Insurance Plan, and 71% elected to participate in the Group Disability Insurance Program.

Employee and Community Relations Division

Employee Relations Counselors attended two Area Council Meetings during the month, with a total of 32 employees in attendance, at which time area problems and items of general interest were discussed.

Eight individual meetings were conducted by Counselors during the month of October, with a total of 272 employees in attendance. The following topics were discussed at these meetings: Stock Bonus Plan; Sales Plan; Pension Plan; Group Life Insurance Plan; Group Disability Plan; and Washington State Compensation.

142 traffic appliances' certificates covering 172 appliances were issued by the Employee Relations Counselors in the 100, 200, and 300 areas during the month of October.

The following employee retired during the month of October:

William W. Teal, Plant Services and Security Division.

Mr. Teal was not participating in the Pension Plan.

During the month of October, five technically trained single employees, who are non-veterans, received a 1-A classification from their local draft boards. Four of these employees are on the Technical Divisions' rolls, and one is on the "P" Division's roll. Deferments were requested and granted on four of these employees. These deferments expire October 22, 1949. Deferment was also requested on the fifth employee, however, his draft board is located at Yakima, Washington, and it is the policy of this board to require the employee to take a physical examination in order to determine if the individual is physically capable, before a deferment is granted. In the event the individual is not capable, he is then placed in the 4-F classification rather than a deferment being granted.

Six employees on leave of absence because of illness, were contacted by Employee Relations Counselors during the month of October. In two of these cases salary checks were delivered to the employees.

The Community Chest Drive for the Hanford Works, the responsibility for the planning of which was in the hands of the Employee Relations Group, was completed on October 15 with 97.7% of the plant quota of $ 20,000.00 being contributed.

Rating sheets for all weekly employees have been received by the Employee Relations Group and these ratings are presently being tabulated. The results will be distributed to the various Divisions in the very near future.

Employee and Community Relations Division

Suggestion System

At the end of October, the volume of work in the office of the Secretary of the Suggestion System was as follows:

	September	October	Total since 7-15-1947
Suggestions received and acknowledged	110	111	2,694
Investigation reports completed	118	98	2,409
Awards granted by Suggestion Committee	15	15	219
Cash awards	$ 120	$ 115	$ 2,105

The October 15 issue of the Works News featured a story of the fifteen award winners for the month of October.

Insurance

1. Insurance Coverage

, Claim Number B-6194193. On June 17, 1948, the two individuals previously named, while driving a 1940-Chevrolet north of Stevens Drive, crashed through a barricade, and catapulted across into an excavation in the road. Both occupants were seriously injured. The investigation indicated that these men were under the influence of alcohol at the time of the accident. On October 14, a letter was received from Robertson & Smith, Attorneys-at-Law, representing the two injured parties in this case, requesting an opportunity to discuss this accident with our insurance representatives. This letter was forwarded to the Travelers' Insurance Company for handling.

The North Richland Barrack's Fire, Claim Number B-6194116. The Travelers' Insurance Company has advised that all settlements in this case, under a thousand dollars, authority for which does not require Company or the Atomic Energy Commission approval, are progressing exceptionally well.

2. Life Insurance

Code information, for use by insurance companies in issuing insurance to employees at this Works, was furnished to twenty insurance companies and investigation agencies during October.

At the request of L. W. Mosher, Assistant Secretary of the Company, at Schenectady, a list of job titles and code symbols was furnished him, together with a list of the life insurance companies authorized to receive code information on employees at this Works, who apply for insurance.

3. Liberty Mutual Blanket Fidelity Bond

A letter has been received from the Atomic Energy Commission requesting the Company to cancel the Liberty Mutual Blanket Fidelity Bond, covering all General Electric employees at this Works. The reason for this request is based on the fact that in the past, all investigation and prosecution has been conducted by the Department of Justice, and under these circumstances, the bonding company is precluded from re-imbursing the Company for such losses.

Public Relations

A General Electric film, entitled "Clean Waters", was recently received from the Company's Portland Office, and was used in connection with a number of Safety Meetings during the past month.

Considerable assistance was given to the Fire Department, of the Community Division, in observance of National Fire Prevention Week, which was scheduled from October 3 to October 9. Newspaper publicity, photographs, and time on the local radio station were obtained for this purpose. Newspaper items and photographs were also compiled into a booklet form for use during this week.

M. S. Rukeyser, an economic columnist for Hearst Publications, was accompanied on a tour of Richland and North Richland, and arrangements were also made for him to interview the General Manager.

Arrangements, for a speaking engagement for W. E. Johnson, of the Design Division, were made at the request of the Pacific Logging Congress. Mr. Johnson spoke on the subject, "Problems of Atomic Power", at a luncheon meeting of this organization in Portland, Oregon.

A complete organization chart, for the Hanford Works as of October 1, was compiled by the publicity writers of the Public Relations Group. This organization chart has been distributed to all members of supervision.

Nine general news releases were prepared and forwarded to forty daily newspapers in the Pacific Northwest during October. Five local news releases were furnished to the Villager, Tri-City Herald, Walla Walla Union Bulletin, Spokane Chronicle, and radio stations — K.P.K.W. at Kennewick, and K.I.T. at Yakima — during the month of October.

Recruiting advertisements for stenographers, typists, comptometer operators, and protective firemen were prepared for the Rocky Mountain News and the Denver Post of Denver, Colorado, and inserted in advance of our employment recruiting in that city.

Employee and Community Relations Division

Two members of the Public Relations Group assisted in the Island Presentation given at the Hanford High School and also in Richland during October. Assistance was also rendered by this Group in connection with the talks given by Mr. Richard Gleason of the Employee and Community Relations Division of the New York Office.

Distribution of all literature and visual guides for the 9-Point Job Improvement Training Program is being handled by the Public Relations Group. Considerable material has been prepared in this respect, and is being distributed to the various instructors in this Program.

Fifty posters urging employees to vote were prepared and posted in strategic points throughout the 700 Area.

To assist the current power conservation program, a letter to all lease holders was prepared by the Public Relations Group for distribution by the Richland Community Council.

Photographs and information on Richland and North Richland were furnished to a free lance writer for the American City Magazine during the past month.

During the past month, the Works News editor attended a conference in Schenectady, which was attended by representatives of the various Works News throughout the Company.

During October, a handbook for the Hanford Works News reporters was completed and in a very short time will be forwarded to the various reporters for their use in connection with preparing their columns for the Works News.

Women's Activities

Registration for advance, as well as beginning, shorthand classes was held on Thursday, October 21. The advance shorthand class has twenty-seven members, meeting on Tuesdays and Thursdays for two hours each; and the beginning shorthand class has an enrollment of twenty-five members, meeting on Mondays and Wednesdays for two hours each.

A total of 62 women were terminated from the Hanford Works during the past month, 53 of which were given exit interviews, and the remaining, being on leaves of absence, failed to report.

Ninety women employees were given orientation during the month of October.

Employee and Community Relations Division

Labor Relations and Wage Rates

The field work of the community wage rate survey, involving Seattle, Portland, Spokane, and Tacoma, has been completed. Final reports on this survey will be consolidated and are scheduled for completion in November.

All craft jobs in the Maintenance Division and the Village Maintenance Group were individually reviewed for the purpose of studying the alignment within and between the Divisions employing craft workers. This study will be completed in November and will involve all Divisions employing craft workers.

Comparison was made of the rates paid Technical Graduates at this Works, as compared with rates paid for similar jobs by other companies. As a result of this study, it was recommended to the Atomic Energy Commission that the job titles of Technical Graduates "A" and "B", be eliminated, and a single title of Technical Graduate, Grade 17, be established with a job rate of $ 74.00. This rate compares favorably with the rates paid by other companies. The job title and rate were approved by the Atomic Energy Commission and will become effective November 1, 1948.

The Hanford Metal Trades Council (A.F. of L.) filed a petition with the Regional Director of the National Labor Relations Board asking that this organization be certified as the bargaining representative for all production and maintenance employees at Hanford Works.

Employee and Community Relations Division

STATISTICS

Employment

Number of employees on rolls	9-30-48	10-31-48
Exempt	1,687	1,695
Non-Exempt	6,696	6,791
Total	8,383	8,486

ADDITIONS

	Exempt	Non-exempt	Total
New Hires	18	212	230
Re-activations	-	23	23
Transfers from other Works	-	-	-
Re-engaged	-	6	6
Net Additions	18	241	259
Payroll Exchanges	9*	4**	13
Gross Additions	27	245	272

TERMINATIONS

	Exempt	Non-exempt	Total
Actual Terminations	14	118	132
Removals due to extended leaves	1	23	24
Payroll Exchanges	4***	9****	13
Gross Terminations	19	150	169

Approximately 87% of all actual terminations were on a voluntary basis, and most of these were for the following reasons: (a) Another job, (b) Personal reasons, (c) To remain or return home.

* Transferred from Weekly Salary Roll
** Transferred from Monthly Salary Roll
*** Transferred to Weekly Salary Roll
**** Transferred to Monthly Salary Roll

Employee and Community Relations Division

GENERAL

	9-1948	10-1948
Applicants interviewed	1,386	1,180
Photographs processed	3,064	5,893
Fingerprint impressions taken (in duplicate)	526	546
Procurement letters written	1,269	1,181

ABSENTEEISM STATISTICS
(Weekly Salary Roll) *

Male	1.56 %	1.81 %
Female	2.80 %	3.20 %
Total Plant Average	1.89 %	2.18 %

INVESTIGATIONS STATISTICS

Cases pending at beginning of month	1,558	1,458
Cases received during the month	452	449
Cases closed	552	470
Cases pending at end of month	1,458	1,437
Number found satisfactory for employment	306	254
Number found unsatisfactory for employment	19	14
Cases closed before investigation completed	10	29
Special investigations conducted	21	67

Compensation and Insurance

Claims	Reported in October, 1948	Reported in September, 1948	Total since Sept. 1, 1946
Workmen's Compensation	102	129	1,166
Liability	8	13	248
Handled for du Pont	0	0	

* Statistics furnished by Weekly Payroll Division

Employee and Community Relations Division

Compensation Payments Approved (Department of Labor and Industries)

	September		August		Total since Sept. 1, 1946
	No. of Claims	Amount	No. of Claims	Amount	Amount
Medical Aid	31	$ 798.39	13	$ 485.20	$ 13,021.92
Accident Fund	76	7,101.86*	103	5,375.62	92,173.88
Pension	28	1,280.32	28	1,280.32	34,873.74

Liability Payments Approved (Travelers' Insurance Company)

August	Bodily Injury - Excluding Auto	$ 0.
	Bodily Injury - Auto	60.54
	Property Damage - Excluding Auto	82.69
	Property Damage - Auto	6,911.46

* This amount includes $1,030.00 for Administrative Expenses.

COMMUNITY DIVISIONS

SUMMARY - OCTOBER, 1948

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg.of Month	End of Month
Community Administration	6	7
Community Accounting	3	32
Community Public Works -	588	587
Community Commercial Facilities	19	19
Community Housing	42	43
Community Fire	127	132
Community Patrol	156	154
Community Activities	10	9
	951	983

GENERAL

Appropriations were approved by the Appropriations and Budget Committee for the extension of water service to tract houses and for additions to the Richland Post Office (supplemental request).

M. T. Binns was appointed permanent City Clerk for the Richland Community Council.

During the month P. O. Crowder joined the Community Divisions as Community Safety Supervisor.

COMMUNITY ACTIVITIES

On October 31, 1948, ground breaking ceremonies were held by the new South Side United Protestant Church.

On October 4, 1948, representatives of the General Electric Company and the Atomic Energy Commission officially accepted completed unit number one of the Columbia High School addition.

The Community Chest Drive, scheduled to close October 23, 1948, was extended into November in an effort to achieve one hundred per cent of the assigned quotas.

Approval was granted the V.F.W. to move a building from White Bluffs to Richland for their use as a club house.

COMMUNITY FIRE

Thirty-three fire alarms were answered during the month, 23 in Richland and 10 in North Richland. These fires resulted in losses of $27.25 (damage to two ranch type houses not estimated as yet) to the project, and $576.00 in personal property.

A very extensive program was carried on by the Fire Division during Fire Prevention Week. Wholehearted cooperation was received throughout all of the Community Divisions.

COMMUNITY HOUSING

One hundred and one ranch type houses were completed and accepted for allocation during the month. Requests for alteration permits were granted to 72 tenants for miscellaneous, minor alterations in Village houses.

COMMERCIAL FACILITIES

The Richland Jewelry Store had its formal opening on October 15, 1948.

Locations were awarded for the following facilities: Packard dealership, General repair garage, Service station and Drug store in Richland; and Beauty shop and shoe repair shop in North Richland.

COMMUNITY PATROL

Eighty-four individuals were arrested and processed through the Richland Jail during the month of October, 1948.

COMMUNITY ACCOUNTING

Due to the policy now in effect, of reorganizing the method of distribution of duties and responsibilities among the divisions, the Community Accounting Division came into existence, as such, October 4, 1948, making a total of personnel in that division of thirty-two.

COMMUNITY PUBLIC WORKS

It is anticipated that a final master plan will be available from J. Gordon Turnbull, Inc., Graham, Anderson, Probst & White in the near future.

Ninety-two renovations of vacated houses were completed during the month of October.

COMMUNITY DIVISIONS

COMMUNITY ADMINISTRATION

OCTOBER, 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll	October
Beginning of month	6
End of month	7
Total increase	1

GENERAL

Appropriations requested of the Appropriations and Budget Committee to cover work on the following Village construction projects were approved by that committee:

a. Extension of water service to tract houses
b. Additions to Richland Post Office (supplemental request)

The Public Works Division was requested to prepare a project for the extension of water service to tract houses.

Community Safety Committee

Upon recommendation of the Traffic sub-committee, the stop signs on Stevens Drive have been changed to give the east-west traffic right-of-way and to discontinue use of Stevens Drive for through traffic from North Richland.

The committee approved the request of the school district to establish a restricted zone on Long Avenue adjacent to the Columbia High School for school bus loading.

A representative of the Community Council reported to the committee complaints of speeding in one of the new residential areas. As a result of this information, Patrol was requested to increase surveillance in the area and publicity was released to encourage residents to report such violations to Patrol. Publicity was also released concerning the hazard of shifting drivers in cars which results in one driver getting out of the car on the left side into the path of traffic.

M. T. Binns was appointed permanent City Clerk for the Richland Community Council.

Community Safety

At the present time the Community Safety group consists of one Community Safety Supervisor (which is included in the above total for Community Administrative personnel). It is anticipated that in the near future one safety engineer and one statistician will be added to this group, and at that time the responsibilities for the school safety program, safety programs relative to the Public Works Division, and all community safety programs will be transferred to this group.

COMMUNITY DIVISIONS
PUBLIC WORKS DIVISION
OCTOBER, 1948

ORGANIZATION & PERSONNEL

Number of employees on payroll:	Exempt	Non-exempt	Total
September 30, 1948	63	525	588
October 31, 1948	68	519	587

During the month of October the following personnel changes were made:

New employees:		8
Transfers - From Design	5	
" H.I.	1	
To Transportation		1
" Maintenance		6
Terminations		9
Returned from leave		2
Sick leave		1

GENERAL

During the month the firm of Greeley and Hansen, Engineers, completed a survey of the garbage pick up and disposal system with the intent of making recommendations for more economical methods. It is expected that their official report will be submitted in December.

Word was received from the commission through our Safety Supervisor, that a hazard existed at the Atomic Energy Commission airport due to burning of garbage in the new burning pit northwest of town. Burning of material has been discontinued in this area and disposal of material will be done by the land-fill method until the study, being prepared by Greeley and Hansen, has been submitted. If different means of disposal are not proposed consideration may be given to relocation of the disposal area to a location where burning will be permissible.

Preliminary Study, GES-7, for the replacement of two 22,500 pound per hour boilers with two new 45,000 pound per hour boilers in the 700 Area Steam Plant was submitted by the Design Division. The study, as submitted, was accepted and a request made for a project to be prepared. It is hoped that this project can be completed in sufficient time to allow work to be started on this replacement in the spring of 1949.

A rough draft of the copy to accompany the master plan being prepared by J. Gordon Turnbull, Inc., Graham, Anderson, Probst & White, has been submitted and returned with comments. It is anticipated that the final master plan will be available from them during the coming month.

Preliminary Study GES-6, Village Street Lighting, was submitted by the Design Division, but due to the critical power situation further work on this work authority will be deferred until a later date.

Community Public Works Division

GENERAL (Continued)

Work has been started by the contractor on project C-274, Central Fuel Oil Storage. It is estimated that this project will be completed sometime in December.

The Construction Division estimates that access to the sites, plus water and power to the extent necessary for private contractors to do construction work in the area bounded by Williams, Symons, George Washington Way and Jadwin, Project C-288-C, Development of Additional Areas for Commercial Facilities, New Central Commercial Area, Richland, will be available by the following dates:

Southerly one-third	December 1
Middle one-third	December 15
Northerly one-third	December 31

ENGINEERING SECTION

Organization & Personnel

Number of employees on payroll	Exempt	Non-Exempt	Total
September 30, 1948	12	9	21
October 31, 1948	18	11	29

Personnel changes made during the month of October:

New Employees		2
Transfers - From Design	2	
" Project Engr.	3	
" H.I.	1	

Those employees transferred from Design & Construction are necessary due to the expansion of facility sponsored construction, project and specification writing, and road and ground supervision. Those transferred from the Design Engineering Division have been working on the erosion and pollen control program which is considered a village function and therefore will become the responsibility of the Public Works Division.

General

The normal duties of inspection, 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. Necessary liaison work was performed.

A total of 12 back charge estimates were prepared during the month.
A total of 49 authorized alterations were inspected for the Housing Divn.

The following authorized alterations were reviewed and approved for the Commercial Facilities Division:

Community Public Works Division

ENGINEERING SECTION (Continued)

A. Desert Inn - neon sign
B. Diamond 5¢ and 10¢ store - interior store revisions
c. Richland Branch Seattle First National Bank - 2 Teller cages and relocation of entrance door to conference room.

Proposals are now being considered requesting the assignment of ground space and preliminary approval for the following:

A. Packard Automobile Dealer & Service Station - Anderson
B. Richfield Service Station

Drawings and specifications were approved for the following construction to be financed by facility operators or Community Activities:

A. South Side United Protestant Church
B. Addition to Richland Supply Store
C. Addition to Germo's Bakery

A building permit was issued to the Pennywise Drug for modernization.

Facility sponsored construction approximates the following schedule:

Facility	Const. Started	Status % Complete	Est. Comp. Date
Klopfenstein's addition	8-23-48	80	12- 1-48
Diamond 5 & 10¢ store	9-20-48	96	11- 1-48
Richland Elec. & Furn. Inc.	9-27-48	35	12- 1-48
Rainbow Serv. Station	9-22-48	80	11-15-48
Pennywise Drug Modernization	10-21-48	5	11-15-48

Building alterations were completed at the following facilities during Oct.

A. Jewelry Store Alteration - Building 92-X
B. Additional Pump Island - Associated Service Station

Final inspection and approval was given to the Germo's Bakery Addition as required by the new Lease Agreement.

Roof maintenance of prefab houses by sub-contractor approximates the following schedule:

Prefab roofs serviced 734
Prefab roofs remaining to be serviced 600
Estimated completion date - Nov. 8, 1948

Technical information and instructions were furnished prospective facility operators subsequent to notice of award for the following types of occupancy:

	Facility	Location
A.	Frayn Printing Plant	Light Industrial Area
B.	New Garage - Hall & Thompson	" " "

Community Public Works Division

ENGINEERING SECTION (Continued)

Technical information and instructions were furnished the South Side United Protestant Church prior to preparation of detailed working drawings and specifications.

Regular field inspections were made in compliance with building permit requirements.

Engineering assistance was furnished to other groups on the following matters:

A. Installation of automatic fire alarm equipment in the public schools.
B. Contemplated installation of electrical meters in the village.

This group was represented at the meeting of the Electrical Standards Committee.

Inspection and acceptance of ranch type houses:

Previously accepted	104
Accepted during October	109
Total accepted	213
Inspected - but not accepted	30

Tract House L-859 was inspected and accepted.

The sidewalks at 450 precut houses have been inspected and accepted.

The septic tank installations at tract houses O-1205 and L-895 were inspected and accepted.

Parking Compound Extensions, Project C-164, are 90% complete. By request of residents a few parking compounds were deleted, the lessee expressing the desire to build individual parking space instead.

A total of 1050 man hours was expended on street maintenance for the month of October. This includes work on sidewalks. Emergency area work has kept the street crews extremely small.

Seal coating of streets, project C-218, started October 22 on Hunt and Heins Streets, and is 25% complete. This work has been deferred until next spring, at which time it will be completed. It is not desirable to perform this type of work in cool damp weather.

During the month 44.2 acres of grass have been seeded under sub-contract G-216, Project C-134. The last of the areas was seeded on 10-18-48, at which time seeding was stopped. This month's work brings the total area seeded on this sub-contract to 69.7 acres. The following areas have had final inspections and acceptance. Area around Bldg. 761 and 762, Swift Blvd. and Circle, and blocks No. 74, 75, 77, 82, 78, 73, 60, 58, 41, 42, 58, 83, 79, 72, 71, 61, 57, 43, 56, 62 and 84, as shown on village map covering the contract.

Community Public Works Division

ENGINEERING DIVISION (Continued)

Replacement of dead street trees planted last season has started by removal of the dead snags and sprouts. Trees that have died back to the ground and sprouted are being set out in the nursery and may develop into usable trees for later planting. Snags and sprouts have been removed on the following streets: Stevens, Long, Comstock, Duane, Delafield, Swift Blvd., and Thayer Drive. No new trees have as yet been planted.

Irrigation has been provided for the future playground area south of No. 2 fire station. This installation was not completed in time so that the area could be seeded to grass this season.

Preliminary work and staking of the Jefferson School grounds irrigation system was completed. This area is ready to have irrigation installed as soon as power equipment is available to do excavation.

Work has started on Duane Avenue shelterbelt. All site grading was completed with exception of flow line in drain ditch. The area was staked for furrow ditching. Work has been halted temporarily since all power equipment was taken to the area for emergency work. A 300 yard fill was hauled in place by Puyallup Garden on existing contract.

Orders were placed for material for street tree planting program and future shelterbelt work. Contact was retained with purchasing and considerable assistance given there on determination of vendor. Nursery was prepared to receive this material, which totals approximately 6500 plants. Supplemental irrigation was installed in the nursery according to Drawing No. H-11-1132. In addition to this work, approximately 300 line feet of eight inch concrete distribution line was laid, adding approximately three acres to producing area of the nursery.

Preliminary work was started for the seeding of blow areas throughout the village. A requisition was placed and contact made with work crews, acquainting them with the scope of work. It is anticipated this work will proceed during November to approximately 75% of completion.

Work was started on by-pass shelterbelt plan. Necessary references were secured and hydraulic data were computed covering a proposed and alternate plan. Some field work will be necessary before preliminary plans can be accurately made.

The project proposal for floor covering on hall floors in the Administration Building was completed and 9 copies, with Public Works approval signatures, were delivered to Mr. Lail's office 10-27-48 for presentation to the A & B committee.

The project proposal for renovation of Tract House K-756 is 80% complete. This project is being held inactive as renovation costs would be excessive as the building was vandalized. All doors, windows, trim, plumbing, and kitchen cabinets were stolen or ruined, requiring expensive repair or replacement. A letter, dated 10-23-48 was sent to Housing Superintendent, recommending cancellation of this work.

1199008

Community Public Works Division

ENGINEERING SECTION (Continued)

The project proposal for the installation of pits outside of the men's and women's dormitories to facilitate maintenance of steam service is 70% complete.

A project proposal for the installation of Protecto-wire in the dormitories and the Desert Inn was started. Work is 70% complete.

A project proposal for the painting of the exterior surfaces of the commercial facilities was started. Work is 80% complete.

Three copies of rough draft of the project proposal to install water from mains to five tract houses - K-784, K-787, K-744, K-748 and K-718 have been submitted for review and comments. Work is 80% complete.

The second rough draft of the project proposal for installation of hour-watt meters in residences was sent to AEC for comments on 10-13-48. Work is 80% complete.

A study was started on the life expectancy of asbestos siding and is 5% complete.

A study is being made on the unsafe condition of the roof of the Lutheran Church. Study is 60% complete.

A study on the possibility of connecting temporary steam to the 64 multiple housing units to the steam mains serving the men's dormitories is 10% complete.

The reasons for the lack of hot water in the kitchens of the Columbia high school and Jefferson grade school is under study and is 5% complete.

A cross order for design plans for the connection of the fire alarm system to the central fire station from the Marcus Whitman, Lewis & Clarke, Sacajawea and Jefferson Grade schools was received. A review with the Fire Department showed an installation as requested, was being installed by sub-contractors in the Lewis and Clarke and Marcus Whitman grade schools. A rough cost estimate indicated the cost of installation would require a project proposal. A letter to Superintendent of Community Activities Division was written outlining the necessity for the need of a request from the Community Activities Division for a project proposal. Further work on this project is being held in abeyance pending a request for a project proposal.

Plans and cost estimate for alterations to rooms 101, 103 and 105 of Dorm W-9 was completed.

The financial status reports for periods ending 10-10-48, 10-17-48, and 10-24-48, were made on projects C-134, C-146, C-218, C-229, C-253 and C-254.

A new drawing showing the city sewer main system, including new housing areas and the 30 inch main to North Richland is 50% complete.

ENGINEERING DIVISION (Continued)

Drawings and cost estimate were made for the relocation of the fence on the south side of the 700 area in order that the labor group may be moved to that location, from their present temporary quarters in the 1125 building.

Since the material control section of the Maintenance Division was dissolved this section has handled the approval of paints for stores. Vendors samples are delivered to 3706 laboratory for analysis and in most cases field tests must also be made by the craftsmen.

Requisitions	58
Store Stock Requests	27
Requests for Publications	3
Purchase orders expedited	25

A materials forecast report was made, showing approximate quantities of construction materials to be used by Community Divisions during the next four years, on routine maintenance, minor alterations, and planned projects.

UTILITIES SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-exempt	Total
September 30, 1948	9	63	72
October 31, 1948	9	63	72

General

Steam Facilities:
The overhaul of the No. 4 boiler was completed during the month and work was started on the overhaul of the No. 3 boiler. It was necessary to put a third boiler on the line Oct. 28, in addition to boilers Nos. 1 and 2. New segregation valves on the steam header at the 784 boiler house were installed during a complete steam shut down on the night of Oct. 8. At the same time connections were made for the new steam line to the Columbia high school and steam was turned into this line Oct. 29.

Normal operation was carried on at the 1131 boiler house with one boiler in service.

Domestic Water
There were three major repairs to broken mains during the month. #4 well has been down at various times for repairs. On all 3000 area wells the air relief and vacuum breakers were removed from the well pump discharges and inverted check valves were put on.

Community Public Works Division

UTILITIES SECTION (Continued)

Irrigation Systems:
During the first part of the month the six systems were operated during day light hours only. Oct. 25 was the last day of operation, and the systems are now being winterized.

Sewage System:
The relocated section of 30 inch main from Symons southward was put in service. At Sewage Disposal plant, new and larger orifices were installed on the chlorinators in order to keep up residual chlorine. All gas lines from the digestor were blown. The work by Construction on installation of an insulating concrete block wall around the digestor is about complete. A diversion wall has been built on the comminutor pit to hold the higher flow within the pit.

Pasco Warehouse Area:
Operations normal on water system. Various furnaces are being operated as needed.

MAINTENANCE SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
September 30, 1948	26	310	336
October 31, 1948	26	300	326

During the month the following personnel changes were made:

New Employees	2
Terminations	3
Transfers - To Labor Section	1
" Transportation Divn.	1
" Maintenance Divn.	6
Sick Leave	1

General

During the month of October 92 renovations were completed, of which 49 were permanent type buildings and 43 were prefabs. 33 of the permanent type house renovations were complete paint jobs, 12 were partially painted and 4 were cleaned only. Of the prefab renovations 33 were complete paint jobs; 9 partially painted and one was cleaned only. There were on hand at the end of the month 17 orders for renovations not completed.

The exterior painting of 10 tract houses was completed. All tract houses on the exterior paint program, excepting those on Lee Blvd. which are expected to be relocated in connection with the light industrial area, have been completed.

Community Public Works Division

MAINTENANCE SECTION (CONTINUED)

On the interior painting program 43 houses were completed.

Repairs of the flood damage on Haine and Gowen Street residences is now approximately 96% complete. The only portion of this work remaining is the application of a sealer on basement walls. It has been decided to use Aquella, a store stock item, the stock of which is now depleted but is expected to be replenished by November 15.

Bath tub replacements were completed in 13 conventional houses; laundry tubs were replaced in 24; water heaters in 15; kitchen sinks in 27 and toilets in 5.

The hospital roof job was 100% complete as of Oct. 8.

The roofing of Nos. 5 and 6 warehouses was completed.

Linoleum was replaced on kitchen work tables in 69 conventional type houses and in 28 prefabs.

During the month 1580 prefab heaters were cleaned and cords replaced as necessary.

The summary of work performed in the furniture repair and upholstery shop is as follows: 50 mattresses, 15 davenos, 76 rockers, 22 chairs repaired and refinished; 71 beds, 13 tables repaired. Other furniture repair consisted of 189 hours for the hospital, 228 hours for the dorms, and 256 hours on FIRO orders.

The steam heating system and radiation for 1131 area hutments is now completed except for pipe insulation.

Three header valves were installed in the power house to facilitate the tie-in of the steam feeder services to Columbia and Carmichael schools.

The insulation of the steam and condensate lines in the 760 building remains 30% complete.

All work on the overhaul of boilers #1 and 4 have been completed. Work is now in progress on the overhaul of #3. This is the annual overhaul and it is not contemplated that an inspector will be brought in.

The blowing out of irrigation lines and the overhaul of pumps and motors is now in progress. Five or six weeks will be required for the blowing out and the overhaul will be intermittent throughout the winter, according to available manpower.

No. 4 domestic well pump and motor are being overhauled. The motor was sent to the East Area Motor shop as it was expected the shaft needed metalizing. Reconditioning of this well is still in process.

Upon repair of broken sewer line underneath the beauty and barber shop, it was discovered that the soil bearing the floor slab had settled

Community Public Works Division

MAINTENANCE SECTION (Continued)

leaving the floor suspended. Several breaks in the sewer line were repaired and a fill was placed underneath the complete floor by the use of a mud jack.

Approximately 110 feet of the bottom plates of the coal conveyor have been replaced, for the first time since start up. These plates had become worn from normal use.

Approximately 350 feet of 14 inch water main was replaced on Lee Blvd. This thin wall spiral weld pipe had been repaired in numerous places and it was decided that the entire section of pipe should be replaced at this time.

A decision has not yet been received as to whether or not our forces will make the irrigation installations for the shelter belt area on Duane Avenue. Our part of Project C-134, the irrigation system for the tree nursery, was completed. The greater part of this job was performed by the Community Labor Group in the laying of tile.

No work has been performed during the month of project C-146 by our forces. A sub-contractor was called in to do that portion of the work south of the Jefferson School and west of the Pennywise Drug Store.

Work on Project C-148, 722 Combined Maintenance Shops Building has been completed. Final acceptance notice was prepared on October 22.

Our work on Project C-209, addition to the Administration building has been completed and final acceptance notice prepared on Oct. 15.

Project C-229, 722-E Typewriter Repair Hutment, is 95% complete and it is expected that completion will be 100% by Nov. 20.

Tract House L-895, project C-245, is 100% complete. Final inspection and acceptance without exception was made on October 18.

LABOR SECTION

Organization & Personnel

Number of employees on payroll:	Exempt	Non-exempt	Total
September 30, 1948	14	142	156
October 31, 1948	13	143	156

During the month the following personnel changes were made:

New employees	3
Terminations	6
Transfers - From Maintenance Section	1
Returned from leaves	2

One temporary foreman resumed services as a light truck driver.

1199013

Community Public Works Division

LABOR SECTION (Continued)

General

Necessary routine work in connection with the care of the nursery, Project C-134, was carried on throughout the month, including the removal of dead trees. The existing irrigation lines at the village nursery were connected to the sanitary water so that year round irrigation of the nursery would be possible.

Garbage and trash pick up continued during the month on a normal five day basis with the exception of eating facilities, requiring seven day service.

Sawing and stockpiling of kindling for village tenants continued during October.

Village orchards were maintained as usual. Work consisting of discing and cleaning out of dead wood.

A total of 16 personal furniture moves were accomplished.

Recall of prefab furniture continued heavy during October.

77 refrigerators and 77 electric ranges were installed in new homes.

2,596 lbs. of grass seed was mixed for distribution to tenants by the Tenant Relations group.

Fall repair on mower equipment has been retarded due to colder weather and the fact that the repair shop is outside, unprotected from the weather.

All hose and sprinklers are being removed from public areas and stored for the winter.

The main canal was shut down on 10-25-48, except for the 3000 area where a minimum flow is being kept for fire protection and the Well pond.

An extensive cleaning and burning program along the main canal and laterals will commence later in the fall when the vegetation has had time to dry and better burning will result.

Fuel delivery is slow - most of the houses have been fueled.

Fuel Inventory

Coal:	
On hand 10-1-48	3,872,500
Received during the month	20,763.400
Delivered to other areas	14,754,800
Delivered to village houses	4,568,000
On hand end of the month	5,313,100

Community Public Works Division

LABOR SECTION (Continued)

Fuel Oil:

Gallons on hand 10-1-48	31,368
Gallons received during October	5,500
Gallons delivered to village houses	33,468
Gallons delivered to construction companies	855
Gallons on hand 10-31-48	2,545

* * * * * * * * *

COMMUNITY COMMERCIAL FACILITIES DIVISION

October 1948

ORGANIZATION AND PERSONNEL	OCTOBER
Number of employees on payroll:	
Beginning of month	19
End of month	19
Net increase	0

COMMERCIAL FACILITIES

The following figures indicate trends in commercial activities as related to various basic items:

	SEPTEMBER	OCTOBER
Cafeteria meal customers	114,491	101,731
Percent of room-day occupancy - Desert Inn	92%	95%
Gallons of ice cream sold (Carnation)	10,652	8,599
Carnation milk and cream deliveries	96,609	93,323
Darigold milk & cream deliveries (wholesale only)	6,655	8,668
Theater customer count	49,458	54,951
Gallons of gasoline sold	212,638	196,842

Total number of commercial facility operators' employees, full and part time, as of October 31, 1948, is 1,041.

The Richland Jewelry was formally opened October 15, 1948. That portion of the building occupied by the facility was remodeled, fixtured and modernized at operator's expense.

Garmo's Food Store has completed an interior painting and redecorating program. A portion of the materials were supplied by the Project, and the labor and other materials at the operator's expense.

Garmo's Bakery was issued a permit to provide an extension at the rear of the building to house bakers' showers, toilet facilities, garbage room, and storage. The building extension is being constructed at operator's expense. This operator was also authorized to install a coffee bar in the front sales section of the Bakery, at operator's expense.

C. C. Anderson's Store has been issued an Alteration Permit to remodel and rearrange the interior of store and display windows. Work will be done at operator's expense and is now in progress.

Construction work is progressing on the enlargement and modernization of Pennywise Drug at operator's expense.

Diamond's 5¢ to $1.00 Store has completed remodeling of store front and modernizing display windows, at operator's expense.

Modernization and expansion construction at Rainbow Service Station at operator's expense is nearing completion.

Desert Inn has received approval to proceed with provision of a Candy and Gift Shop in the main lobby. Approval was also granted to provide baking facilities in the Riverview Room kitchen.

Interior of the Tavern at the Recreation Hall has been re-painted. A portion of the materials were supplied by the Project, and the labor and other materials by the operator.

Dishwashing machine at Richland Thrifty Drug was replaced to relieve a heavy maintenance problem and to better serve Public Health requirements.

CONTRACTS AND NEGOTIATIONS

A Supplemental Agreement dated October 17, 1948, was entered into by and between General Electric Company and True's Oil Company, covering enlargement and improvement of Automotive Service Station No. 3.

An Operating Agreement dated July 12, 1948, was entered into by and between General Electric Company and Richland Jewelry, Inc., covering the operation of a jewelry store in Richland.

A Sub-Operating Agreement dated August 1, 1948, was entered into by and between Greyhound Post Houses, Inc., and F. H. Moller and Ray Moller, and approved by General Electric and the Commission, covering the operation of the taxicab service in Richland.

An Operating Agreement dated August 20, 1948, was entered into by and between General Electric Company and James R. Jackson and Richard Rowan Grossley, covering the operation of "Dick's Tavern" in North Richland.

An Operating Agreement dated August 20, 1948, was entered into by and between General Electric Company and Henry Morgensen, covering the establishment and operation of the "North Richland Tavern" in North Richland.

A License Agreement dated April 23, 1948, was entered into by and between General Electric Company and Inland Empire Refineries, Inc., covering the construction and operation of an automotive service station located at First Street and Stevens Drive, North Richland, Washington.

A License Agreement dated June 3, 1948, was entered into by and between General Electric Company and Colin Bleiler and T. H. Brown, Signal Oil Company dealers, covering the construction and operation of an automotive service station located between Fourth and Fifth Streets on George Washington Way, North Richland.

A License Agreement dated May 3, 1948, was entered into by and between General Electric Company and Food Lines, Inc., covering the construction and operation of a food store in North Richland.

A License Agreement dated April 28, 1948, was entered into by and between General Electric Company and Herman's Men's Stores, covering the construction and operation of a men's clothing store in North Richland, Washington.

An Operating Agreement dated February 15, 1948, was entered into by and between General Electric Company and Western Gas and Power Company, covering the establishment and operation of a propane gas cylinder filling and exchange station in North Richland, Washington.

A Packard dealership location was awarded to Anderson Motors, Inc., who will construct its own building in Richland.

A General Repair Garage location was awarded to S. B. Thompson and T. K. Mills, of The Dalles, Oregon, who will construct their own building in Richland.

A Service Station location was awarded to L. W. Hale, Hale's Richfield Service, Pasco, who will construct his own building in Richland.

The Beauty Salon at North Richland was awarded to Earl Harris of Bremerton, Washington.

The Shoe Repair Shop at North Richland was awarded to Wiley Dickson, Plymouth, Washington.

A Drug Store location in Richland was awarded to Zapp Drug Stores, of Vancouver, Washington.

Invitations to Bid were mailed on the following prospective facilities:

Barber Shop - Richland
Beauty Shop - Richland
Book, Stationery and Related Items Store - Richland
Drug Store - Richland
Food Store - Richland
Automotive Service Station - Richland
Tavern - North Richland

Bids were received (re - bid basis) on the Tavern - North Richland, and the operator will be selected by North Richland Realty Division in the near future.

It is anticipated that invitations to bid for the first facilities to be established in the new commercial area and additional facilities in the light industrial area will be sent out during November.

INVENTORY AND PROPERTY

Annual 1948 inventories of Government-owned equipment at the following locations were completed:

U. S. Postoffice, North Richland
Carnation Company

REQUESTS FOR ESTABLISHMENT OF BUSINESS IN RICHLAND

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:

Auto Dealership
Auto Body Shop
Auto Parts
Auto Top and Glass Shop
Bakery
Beauty Shop
Barber Shop
Book, Stationery and Related Items
Bowling Alley & Restaurant
Cafe
Candy Store
Children's Ready-to-wear
Delicatessen
Drive-in Restaurant

Floral Shop
Food Store
Fountain Lunch
Funeral Home
Garage or Auto Dealership
Garage and Repair Shop
General Merchandise Store
Gift and Artware Shop
Gravel Company
Hardware Store
Jewelry Store
Lumber and Building Materials
Lumber and Fuel Yard
Malt and Dairy Store
Men's and Boys' Wear
Millinery Shop
Music Store
Nursery and Greenhouse
Optometrist's Office
Paint Dealership or Hardware
Pest Control and Exterminator
Photographic Studio
Piano and Music Store
Pick-up and Delivery Service
Portrait Studio and/or Photo Supply
Radio Station
Restaurant
Rug Store & Rug Cleaning & Repair Service
Service Station
Shoe Store
Shoe Repair Shop
Sporting Goods Store
Tailoring Shop
Tavern
Variety Store

Written permission was granted to nineteen (19) Richland residents to conduct the following part-time businesses in their homes:

Sell shoes
Sell Debutante Cosmetics
Sell Christmas cards (3)
Represent Grant Stringham Insurance Agency
Take orders for clothing for Northwest Tailoring Co.
Sell "Ex-Cel-Cis" Beauty Products
Sell "Real Silk" Hosiery
Sell "Children's Activities Magazine"
Sell hand-made leather goods
Represent Minnesota Mutual Life Insurance Co.
Sell Kirby Vacuum Cleaners
Conduct a Children's "Swap Shop"
Take orders for "Readers' Digest"
Represent Universal Venetian Blind Co.
Take orders for "Hurford Frocks" and "Wil-knit Hosiery"
Sell Avon Products (2)

Written permission was granted seven (7) individuals living outside of Richland to contact Village residents on an appointment basis on the following business matters:

Sell Kirby Vacuum Cleaners
Represent Retail Credit Company
Sell "Real Silk" Hosiery
Sell Avon products
Represent Washington Sterling Insurance Agency
Take orders for clothing made by Utah Woolen Mills
Sell "Luziers Cosmetics"

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

October, 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	October
Beginning of month	42
End of month	43
Net increase	1

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	T	Pre-Cut	Ranch	Prefab	Apts.	Tract	Total
Operations	2198	264		371	142	1099	66	38	4178
Facilities	145	3		17	3	118	1	9	296
Government	97	25		16	3	43	2	8	194
Kellex Corporation		6		6		1	1		14
Morrison-Knudsen	4			1			1		6
Atkinson-Jones	25	24		24	2	19	2		96
J. Gordon Turnbull	1	2		3	1	12			19
Giffels & Vallet	2	1		1	3	11			18
J. A. Terteling & Sons			10	2		2			14
McNeil Construction Co.	2			2		4			8
Newberry Neon Electric	1	2		2					5
Urban, Smythe & Warren	2	2		1		2	1		8
Roberts Filter	1								1
Graysport Construction				1				8	9
Newport-Kern Kibbe								1	1
Vernita Orchards								5	5
C. C. Moore Co.		1							1
P. S. Lord Co.	1								1
TOTAL HOUSES OCCUPIED	2479	330	10	447	154	1311	74	69	4874
Houses utilized for special purp.								1	1
Houses assigned (leases written)	5	2		1	10	2		1	21
Houses assigned - awaiting tenants	16	1		2	48	19			86
Government houses - unassigned								**35	35
TOTAL HOUSES	2500	333	10	450	212	1332	74	106	5017

* 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	2472	46	39	2479	Plus 7
Block Type	328	7	5	330	Plus 2
T Type	10	0	0	10	None
Precut Type	443	10	6	447	Plus 4
Ranch Type	75	80	1	154	Plus 79
Prefab Type	1300	62	51	1311	Plus 11
Apartments	73	2	1	74	Plus 1
Tract	68	10	9	69	Plus 1
Total	4769	217	112	4874	Plus 105

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	14	541	* 15	556
Men - Unoccupied				
Women - Occupied	14	586	* 6	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

Tract house L-859, formerly used by Prison Industries, has been rehabilitated and leased this month. Rent was established at $65.00.

Effective October 28, 1948 all new employees are being informed that project housing may never by available for their families. Their names will not be added to the present housing list but will be recorded on a separate list for use when and if project housing is available.

There were 101 Ranch type houses accepted from Nettleton Sound during the month of October; 95,Y,three bedroom type and 6,Z,four bedroom type.

The Y type ranch type house at 509 Cottonwood was entirely destroyed by fire Saturday, October 30, 1948.

COMMUNITY HOUSING DIVISION

On August 24, 1948, approval was given by the Atomic Energy Commission to engage the services of competent private real estate appraisers so that an appraisal of all project housing might be made.

On October 6, 1948, an agreement was entered into by the Messrs. Ford S. Barrett, Jr. and E. A. Wheeler and the General Electric Company (Community Divisions) to conduct such an appraisal for a fixed fee. This appraisal was started by Messrs. Barrett and Wheeler on October 7, 1948 and is approximately one third completed at this time. It is estimated that this appraisal will be completed and a full comprehensive report submitted by January 1, 1949.

TENANT RELATIONS

The processing of patrol orders and work orders during the month is as follows:

	Incomplete 9-30-48	Issued Dur. October	Incomplete 10-31-48	Issued Prev. Month
Patrol Orders - Days	1574	3328	1224	3347
Maintenance & Electrical				
Patrol (Off shift elect.)	0	508	0	649
Patrol (Off shift Maint.)	8	391	20	268
Regular work orders	297	203	286	196
Backcharge Tenant Relations orders	34	53	13	77

43 Scrap Lumber Permits were issued during the month of October as compared to 61 during the previous month.
35 Conventional type dwellings were painted by Project forces as compared to 52 during the previous month. (Interior)
12 Tract houses were painted during the month of October. (Exterior)
45 Grass Seed Permits were issued, which amounted to 355 pounds of seed compared to 146 Grass Seed Permits amounting to 2,376 pounds for the previous month.
145 Home Fire Inspections were reported and processed. 265 homes were visited. 296 Home Fire Inspections were made during the previous month and 574 homes were visited.

Items of Interest:	Oct. 1948	Outstanding Oct. 1948	Outstanding Prev. Month	
1. Window Glass Replacement Requests (All types)	67	72	139	(-67)
2. Sink Linoleum Replacement Requests	50	89	93	(- 4)
3. Bathroom Painting Requests		39	30	(-9)
4. Kitchen & bathroom faucets in need of repair and exchange	47	216	323	(-107)
5. Screen Door Requests	11	24	43	(- 19)
6. Miscellaneous	388	823	976	(-153)

Alteration Permits issued to tenants during the month of October, 1948, amounted to 72 as compared to 98 issued during the month of September. Permits issued during October consisted of the following:

Installation of air conditioners	6
Installation of automatic washers & dishwashers	16
Installation of partitions in basement	6
Installation of 24-head sprinkler system	1

Installation of doorbell and door chimes	2
Basement excavations	14
Refinish floors	6
Reverse position of range and refrigerator	1
Exterior painting of prefab	1
Re-location of hot water heater	1
Construction of driveways	6
Construction of patios	3
Construction of garage (Tract house)	1
Construction of cold-air duct in sunporch	1
Construction of dark room in basement	1
Construction of drop-leaf table	1
Construction of greenhouse	1
Construction of bookcases and latticework	1
Construction of sidewalks	1
Construction of storage sheds	2
Construction of outdoor fireplace	1
ALTERATIONS FOR MONTH OF OCTOBER, 1948 TOTAL	73

Inspection Information:

628 inspections were made during the month. A break-down of the inspections shows the following distribution:

a. 95 Grass Seed Inspections
b. 52 Lot Line Inspections
c. 40 Top Soil Inspections
d. 26 Bath tub caulking Inspections
e. 18 Floor Board Inspections
f. 18 Sidewalk Inspections
g. 6 Leaking basement Inspections
h. 1 Linoleum Inspection
i. 3 Wall Inspections
*j. 369 Miscellaneous Inspections

*Under this heading the inspectors did a great deal of work on the interior-block grass seeding and parking compound project, and one inspector spent a great deal of his time on the interior house painting program.

COMMUNITY DIVISIONS REPORT

COMMUNITY FIRE DIVISION

October, 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	October
Beginning of the month	127
End of month	132
Terminations	3
New Employees	8

		Richland	North Richland
Response to alarms		23*	10
Fire Loss (Estimated)			
	Hanford Works	$ 4.95	$22.30
	Personal	537.00**	39.00
Investigations of minor fires and incidents		15	5
Inspections:	700 Area Buildings	110	
	1100 Area Buildings	123	
	Commercial Facilities	96	
	Schools, Clubs, Churches	18	
	Residential	145	
	Total	492	
Fire Extinguishers			
	Inspected	1105	
	Installed	7	
	Recharged	127	
	Removed	10	
Safety Meetings		22	7
Outside Drills		41	79
Inside Drills		77	35
Fire Alarm Boxes Tested		134	

* This includes fires in two ranch-style residences resulting in considerable damage to each. Figures on damage not yet compiled.

** This damage figure includes two private automobiles losses, one for $350.00 and another for $145.00.

General

Recommendations were made to Realty Division for changes required in six new men's dormitories to bring exits up to code and suggested requirements made for cleaning exhaust ducts over kitchen stoves in eating places.

An acceptance inspection was made of fire alarm and evacuation alarm system in Public Health Building.

Fire Prevention Week Activities

1.) Indoor displays erected in both Richland fire stations for open house. Groups totalling 320 persons visited No. 1 station for conducted tours and instruction in addition to individual visitors.

2.) Distribution was made to homes, crafts and commercial facilities of 8600 locally prepared bulletins.

3.) Distribution was made to homes of 11,000 pieces of National Fire Prevention Week literature.

4.) Posters displayed on Fire Prevention Week totalled 550.

5.) 2150 locally prepared campaign "license" cards were placed on bicycles.

6.) 1200 home self-inspection forms were distributed through the schools and almost 50% returned after completion.

7.) Fire Prevention Week news, feature articles, editorials, cartoons, cuts and promotional ads were placed in The Villager, Hanford Works News, Tri-City Herald, Walla Walla Union Bulletin and Spokane papers.

8.) One special radio broadcast on the Pasco Station featured Richland and North Richland fire officials. Spot announcements were used all week.

9.) Excellent school cooperation included a poster contest for which ten cash prizes were given, an essay contest in some schools, assistance in obtaining 250 applicants for the Junior Fire Marshal instruction course, at least one fire drill in each school, eight skits or playlets staged in grade schools, Fire Prevention Stories read to grade school students, one high school assembly addressed by Mr. F. C. Schlemmer representing the Atomic Energy Commission and another addressed by Leonard L. Burgunder, Deputy State Fire Marshal, as well as demonstrations to every teacher and student of all Richland schools on use of fire extinguishers and fire alarm boxes (demonstrations by staff of Fire Marshal's office.)

10.) With the assistance of the Commercial Facilities Division, each facility operator completed a self-inspection form of his establishment, made special clean-up effort and displayed fire prevention posters. Two window displays were placed by merchants.

11.) Through the Community Activities Division, each minister assisted by making Fire Prevention Week announcements in church bulletins and from the pulpit in addition to completing self-inspection forms of the church buildings.

12.) Clubs submitted self-inspection forms of their buildings and made special housecleaning effort.

13.) Boy Scouts performed a community service by assisting firemen with delivery of literature to all Richland homes, afterward being served a buffet lunch by firemen.

14.) Mr. Leonard L. Burgunder, Deputy State Fire Marshal, speaking on Fire Prevention Week addressed a Kiwanis banquet for their wives at which Richland and North Richland school staffs were guests.

15.) Special committees inspected schools, churches, mercantile facilities, 700 Area and 1100 Area buildings and clubs.

16.) Other features of the campaign included display of burned car at Goethals and Lockwood, public address announcements by Mr. Paul Beardsley, president of the Junior Chamber of Commerce, from Municipal building during 4:45 p.m. shift change, movies and talks to safety meetings, movie short subject and trailer on Fire Prevention Week in local theatres, participation of the North Richland Fire Department in a Fire Prevention Week parade and subsequent fire extinguishing demonstration plus two exhibition drills by firemen for Lewis and Clark school students.

COMMUNITY DIVISIONS

COMMUNITY PATROL

OCTOBER 1948

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	October
Beginning of month	156
End of month	154
Net Decrease for month	2

Reason: V. T. Personal - 2

GENERAL

On October 4, 1948, the Community Patrol Division returned to a 5 day week.

Beginning October 10, 1948, and continuing on through the hunting season, Patrol was especially alert for hunting violations on the Project. Special assistance was given to the Game Protection Department at any time any member of their organization was on the Project.

Beginning October 8, 1948, one patrolman was stationed at the intersection of Williams and Thayer on each Sunday morning from 10:30 to 11:00 to assist children coming from Sunday School across the intersection. This assignment will continue indefinitely.

On October 15, 1948, Purchasing advised that the order for new uniforms has been placed with the Howard Uniform Manufacturing Company of Baltimore, Maryland, and that we could expect delivery in approximately 45 days from the date the order was placed.

During the swing shifts of October 29 and 30, 1948, Richland was divided into six divisions and one car with one patrolman assigned to each division to curb and prevent Halloween mischief.

During the month of October a Community Patrol Notification Chart for the Mobilization Plan was constructed and installed in Patrol Headquarters to aid in the notification of off duty patrolmen in the event of an emergency. A similar chart is being prepared for use in the North Richland Patrol Headquarters.

Throughout October, hourly checks were made of the Labor Yard, where the fence is down and automotive supplies are stored in the Yard. These checks were made during the hours of 4:45 P. M. and 8: A. M.

Four men were provided the Local School District during football games on October 1 and October 15 and six men were provided on October 29, 1948.

During October, 1948, 68 gun registrations were taken by Richland Patrol.

On October 30, 1948, a motor patrol post was established in the new housing section west of Wright Avenue and south of Williams Boulevard to be in effect during the Swing and Graveyard shifts daily until such time that emergency phones or residential phones are installed in that section.

During October, 84 prisoners were processed through the Richland jail.

As of this month, Patrol Records Section is incorporating an alphabetical photograph file into their records system. The Badge Offices of both G. E. and Construction are cooperating in this endeavor.

TRAINING

Lt. J. E. Coleman was in charge of the training program for the month of October. During the month the following subjects were covered: Accident Investigation, Report Writing and discussion. Various types of accidents were simulated for study.

On October 5, 1948, training on the F. B. I. Course was begun in lieu of training in the Army "L" Course.

The Time Schedule followed during the month for range training was as follows:

FBI Course	1½ hr.
Machine Gun	1 hr.
Riot Gun	1 hr.

RICHLAND AREA (VILLAGE)

	August	September	October
Check on absentees	3	6	3
* Persons assisted	274	290	237
Doors & windows found open in commerical facilities	8	5	8
Lost children found	12	17	10
Ambulance runs	62	60	22
Lost Dogs Reported	3	7	4
Dog & Cat Complaints	26	40	35
Persons Injured by Dogs	4	3	2
Bank Escorts & Details	39	42	41
Fires Investigated	19	20	12
Miscellaneous Escorts	56	51	40
Complaints investigated	86	70	118
Missing Persons Reported	3	9	3
Totals	624	595	535

* Includes: Persons admitted to residence; delivery of messages to residents who have no telephone; relay of messages; handling requests of out of town police; miscellaneous aids to private parties; and opening trailer parking lot for individuals.

RICHLAND AREA (NORTH)

	August	September	October
Check on absentees	9	6	9
* Persons assisted	509	464	465
Doors & windows found open in commercial facilities	48	67	48
Lost children found	5	6	5
Ambulance runs	10	22	15
Lost dogs reported	0	0	0
Dog & cat complaints	9	6	23
Persons injured by dogs	1	2	0
Bank escorts & details	49	46	48
Fires investigated	17	13	10
Miscellaneous escorts	86	88	89
Complaints investigated	139	118	130
Missing persons reported	0	1	10
Totals	882	839	852

* Includes: Admitting persons to their rooms; contacting parties on long distance calls; issuing rooms and bedding; locating persons wanted for various reasons; relaying messages; assisting outside police agencies; assisting other departments; aiding private persons, etc.

TRAFFIC SECTION

On October 20, 1948, Community Patrol was informed that a recent survey in Richland revealed that over 50% of all bicycles in Richland were inadequately equipped for night riding. Patrolmen were instructed to stop all riders whose bicycles were inadequately equipped during the hours of darkness to get the names of the riders, parents names, addresses and telephone numbers and submit same on a 'Don't Say It - Write It' form and forward to the Traffic Section where on the following day the parents will be contacted and instructed to correct the condition.

On October 29, 1948, the Traffic Committee ordered that Stevens Drive be changed from the status of an arterial with the thought in mind that such a change would divert traffic around Richland by the new By-Pass highway. In order to accomplish this, the following stop signs at intersections of Stevens Drive were reversed: Van Giesen, Williams, Swift and Lee.

During the month 1 dozen raincoats and 1 dozen rainhats were received for the School Boy Patrol.

During the month of October, the Richland Patrol Traffic Section assisted the Washington State Department of Roads and Highways in conducting a Destination and Origin survey of all motorists entering and leaving Richland. Information obtained through the survey would be used by the department to determine road usage of the 410 highway.

Traffic accidents showed a slight decrease of 15 compared to 17 during September.

Two hundred and sixty Court Citation traffic tickets were issued, compared to 210 during September.

Twelve traffic safety lectures were given to plant groups, by members of the Traffic Section.

Traffic escorts remained about the same as during the month of September.

An Eno-scope survey of major streets in the Village was started to determine volumtery compliance to speed zones.

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 is also presented.

PATROL

A total of 120 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

OCTOBER 1948

FORCE REPORT		Entire Patrol 9/30/48	Entire Patrol 10/31/48
Patrol			
Patrol Supervisor		1	1
Division Supervisor		1	1
Captains		5	5
Lieutenants		12	12
Sergeants		17	17
Patrolmen		115	113
	Total	151	149
Clerical			
Steno-Typists		5	5
	Total Clerical	5	5
	Grand Total	156	154

Additions

None

Terminations

2 Patrolmen

TERMINATIONS CONSIST OF

2 V. T. Personal

EE0b611

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

October - 1948

MOTOR VEHICLE ACCIDENTS

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Plant	5	3	1	0	1	3	0	0
Richland	17	15	0	0	1	1	7	2
North Richland	25	17	0	0	1	2	5	7
Totals	47	35	1	0	3	6	12	9

ACCIDENT CAUSES

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Plant	9	3	0	0	0	0	2	0
Richland	10	8	3	7	0	1	6	0
North Richland	14	4	12	9	0	2	1	2
Totals	33	15	15	16	0	3	9	2

PLANT WARNING TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equip.		Other Violations		Totals	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richland	0	2	2	0	161	128	2	0	21	18	0	0	186	148
N. Rich.	3	0	1	2	671	214	3	2	17	2	1	5	696	225
Totals	3	2	3	2	832	342	5	2	38	20	1	5	882	373

COURT CITATION TRAFFIC TICKETS ISSUED

	Speeding		"Stop" Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Plant	3	11	4	0	0	1	0	0	- -	1	2	2	0	0	2	1	11	16
Richland	40	39	17	14	1	3	0	4	-	8	11	19	8	28	24	17	101	132
N. Rich.	30	25	24	13	3	3	0	3	-	12	10	23	7	6	24	27	98	112
Totals	73	75	45	27	4	7	0	7	-	21	23	44	15	34	50	45	210	260

TRAFFIC VOLUME: Count taken on October 22, 1948, on George Washington Way at Yakima River Bridge, outbound, 24 hour period, 6,453 Cars.

Note: Due to late reporting, two accidonts that occurred in Richland during the month of September are included in October totals.

PATROL TRAFFIC SECTION
RICHLAND JUSTICE COURT CASES
OCTOBER, 1948

****

Violation	No. of Cases	No. of Convictions	Total Fines	Fines Susp.	Sentenced to Jail	Sentence Suspended	License Revoked	Average Fine Paid	Cases Dismissed	Warrants Issued
Drunken Driving.....	5	5	$385.00	None	None	None	5	$77.00	None	None
Reckless Driving.....	2	2	55.00	None	None	None	2	27.50	None	None
Negligent Driving....	21	21	435.25	$62.50	None	None	0	17.75	None	None
Speeding.....	81	79	855.82	97.50	None	None	0	19.59	2	8
Stop Signs.....	23	23	128.50	11.00	None	None	0	5.10	0	0
Failure to YROW.....	20	19	186.75	42.50	None	None	0	7.59	1	1
Improper Passing.....	15	15	84.50	25.50	None	None	0	3.93	0	1
Improper Parking.....	30	29	98.00	59.50	None	None	0	1.33	1	1
No Driver's License..	27	25	119.57	43.25	None	None	0	3.05	2	4
Defective Equipment..	6	6	34.16	21.25	None	None	0	2.15	0	1
Failure to Dim Headlts.	2	2	13.00	None	None	None	0	6.50	0	0
Illegal Left Turn.....	1	1	7.50	None	None	None	0	7.50	0	0
Disregarding Signal of Traffic Officer.....	1	0	None	None	None	None	0	None	1	0
Hit and Run.....	1	1	100.00	None	None	None	1	100.00	0	0
No Vehicle Registration.	1	1	5.00	None	None	None	0	5.00	0	0
Improper License Plates.	3	3	13.50	7.25	None	None	0	2.08	0	0
Driv. Wrong Direction on One Way Street....	1	1	None	None	None	None	0	None	0	1
Following Too Closely.	3	3	19.50	7.50	None	None	0	12.00	0	0
Grand Larceny.....	1	1	27.50	None	1	1	0	27.50	0	0
Petit Larceny.....	1	1	None	None	1	1	0	None	0	0
Carrying Concealed Weapon.....	1	1	100.00	None	0	0	0	100.00	0	0
Lewdness.....	1	1	None	None	1	1	0	None	0	0
Larceny by Check.....	1	1	None	None	1	1	0	None	0	0
Vagrancy.....	3	3	17.50	17.50	2	2	0	None	0	0
Bootlegging.....	1	1	None	None	1	0	0	None	0	0
3rd Degree Assault....	1	1	27.50	27.50	0	0	0	None	0	0
Public Intoxication,,,	32	31	437.50	12.50	1	1	0	13.70	1	0
Public Nuisance.....	13	13	190.00	None	3	0	0	14.61	0	0
Disorderly Conduct....	4	4	60.00	None	0	0	0	15.00	0	0
TOTAL.....	302	294	$3401.05	$435.25	11	7	8		8	17

Total Fines..$3401.05 Less Fines Susp. $435.25 Total Received $2965.80 Above violations occurred on the Hanford Works Project.

PATROL DIVISION - NORTH RICHLAND OFFENCES - OCTOBER 1948

Classification	Offences reported to Patrol during October	Offences Unfounded	Actual Offences Sept	Actual Offences Oct	Offences cleared By Arrest	Offences cleared By other Action	Perpetrators Invl:
Assault	4	0	6	4	3	0	3
Attempted Suicide	0	0	0	0	0	0	0
Burglary-breaking and/or entering	14	1	14	13	3	2	7 c
Larceny-Theft (except Auto & Bike)							
(a) $50.00 and over value	9	0	10	9	0	3	3
(b) Under $50.00 value	14	2	11	12	3	4 a	7 a, d
Automobile Theft	2	1	1	1	0	0	0 u
Bicycle and Motor Bike Theft	2	1	0	1	0	0	0 u
Carrying Concealed Weapon	1	0	0	1	1	0	1
Destruction of Government Property	3	0	2	3	0	0	0 u
Destruction of School Property	0	0	0	0	0	0	0
Destruction of Personal Property	4	0	2	4	0	0	0 u
Disorderly Conduct	3	0	0	3	3	0	3
Drunkenness	30	0	25	30	30	0	30
Embezzlement and Fraud	0	0	0	0	0	0	0
Forgery	0	0	0	0	0	0	0
Gambling	0	0	18	0	0	0	0
Missing Person	2	0	0	2	0	2	2 b
Narcotics	3	0	0	3	3	0	3
Offence against Family and Children	0	0	0	0	0	0	0
Pickups for outside Agencies	3	0	0	3	3	0	3
Prowlers	1	0	0	1	0	0	0 u
Public Nuisance	13	0	2	13	13	0	13
Rape	0	0	0	0	0	0	0
Robbery	2	0	0	2	1	0	1
Sex Offence	0	0	1	0	1 f	0	1 f
Vagrancy	3	0	2	3	3	0	3
Violation of State Game Laws	0	0	0	0	0	0	0
Violation of State Liquor Laws	1	0	1	1	1	0	1
Miscellaneous	0	0	3	0	0	0	0
Juveniles (other than reported above)							
Disorderly Conduct	1	0	0	1	0	1	2 e
Totals	115	5	98	110	68	12	83 g

(Continued)

PATROL DIVISION - NORTH RICHLAND OFFENCES - OCTOBER 1948 - Continued

a Includes one offence reported to Patrol during Sept 1948 and exceptionally cleared during Oct 1948.
b Two of the offences were perpetrated by two juveniles, age 12 and 13.
c Two of the offences were perpetrated by the same two juveniles, ages 11 and 16.
  Two of the offences were perpetrated by one juvenile, age 16.
d One of the offences was perpetrated by one juvenile, age 17.
e This offence was perpetrated by two juveniles, ages 11 and 16.
f Includes one offence reported to Patrol Aug 1948 and cleared by arrest during October 1948
g 30 of perpetrators are colored.
u Represents UNKNOWN.
Value of property recovered - $115.00.

PATROL DIVISION - NORTH RICHLAND - COMPARISON

OCTOBER 1948

Number of offences known to Police per 10,000 inhabitants in Cities between 10,000 and 25,000 inhabitants:

	Wash., Oregon & Calif.		North Richland		
Classification	Six Months (Jan-June 1948)	One Month Average	Six Months (Jan-June 1948)	Sept 1948	Oct 1948
Murder	.181	.030	0	0	0
Robbery	3.4	.57	4.0	0	1.3
Aggravated Assault	1.7	.29	20.6	4.0	2.6
Burglary	35.6	5.94	3.3	9.3	8.6
Larceny	127.0	21.17	100.6	14.0	14.0
Auto Theft	15.5	2.59	6.6	.6	.6

Number of offences known to Police per 10,000 inhabitants regardless of whether offences occurred in Cities or rural districts:

	State of Washington		North Richland		
Classification	Six Months (Jan-June 1948)	One Month Average	Six Months (Jan-June 1948)	Sept 1948	Oct 1948
Murder	.140	.23	0	0	0
Robbery	4.9	.81	4.0	0	1.3
Aggravated Assault	.78	.13	20.6	4.0	2.6
Burglary	36.91	6.15	3.3	9.3	8.6
Larceny	92.22	15.37	100.6	14.0	14.0
Auto Theft	18.15	3.02	6.6	.6	.6

The portion of offences committed by persons under the age of 25 years is shown by the following figures:

	National Average	North Richland		
Classification	Six Months (Jan-June 1948)	Six Months (Jan-June 1948)	Sept 1948	Oct 1948
Robbery	55.5	0	0	0
Burglary	59.9	C	14.2%	30.7%
Larceny	45.2	5.3%	19.0%	4.8%
Auto Theft	71.6	0	0	0

Note: Statistics of juvenile offences 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."

PATROL DIVISION - RICHLAND OFFENSES
October 1948

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses Sept.	Actual Offenses Oct.	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	1	0	4	1	0	0	(u)
Attempted Suicide	0	0	0	0	0	0	0
Burglary-Breaking and/or Entering	1	0	1	1	0	0	(u)
Breaking and/or Entering	1	1	0	0	0	0	0
Robbery	0	0	0	0	0	0	0
Larceny-Theft (except auto & bike):							
(a) - $50.00 and over value	9	0	7	9 (a)	0	1	5
(b) - Under $50.00 value	18	0	24	18 (b)	1	2	4
Auto Theft	2	0	0	2	0	0	(u)
Attempted Auto Theft	0	0	0	0	0	0	0
Bicycle Theft	25	3	15	22	0	0	(u)
Weapons: Carrying-Possessing-Using	0	0	0	0	0	0	0
Destruction of Government Property	1	0	3	1	0	0	(u)
Destruction of Personal Property	5	0	1	5 (c)	0	2	2
Destruction of School Property	0	0	0	0	0	0	0
Disorderly Conduct	1	0	1	1 (d)	0	1	2
Drunkenness	9	0	14	9	9	0	9* (1-Col.)
Embezzlement and Fraud	6	0	8	6	6	0	1
Forgery	0	0	0	0	0	0	0
Gambling and/or Possession of Equip	0	0	1	0	0	0	0
Missing Persons	3	2	1	1 (e)	0	3	1
Offense against family & children	0	0	0	0	0	0	0
Pickup for Outside Agency	0	0	0	0	0	0	0
Prowlers	2	0	3	2	0	0	(u)
Public Nuisance	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0
Sex Offense	2	0	1	2 (f)	1	1	2
Cohabitation	0	0	0	0	0	0	0
Vagrancy	0	0	0	0	0	0	0
Violation of State Game Laws	0	0	0	0	0	0	0
Violation of State Liquor Laws	0	0	1	0	0	0	0
Miscellaneous	1	0	3	1	0	1	2
Juveniles (other than reported above)							
Disorderly Conduct	7	0	3	7 (g)	0	6	9
	94	6	91	88	13	17	37 (Cont.)

PATROL DIVISION - RICHLAND OFFENSES - OCTOBER 1948 - Continued

a - One of the offenses was perpetrated by five juveniles, of ages 12 and 13 years.
b - Three of the offenses were perpetrated by four juveniles, of ages 13, 15 and 19 years.
c - Two of the offenses were perpetrated by two juveniles, of ages 5 and 17 years.
d - The one offense was perpetrated by a person of age 19 years, and an adult.
e - The one offense was perpetrated by a juvenile, of age 13 years.
f - The two offenses were perpetrated by a juvenile of age 13 years, and a person of age 26 years.
g - Six of the offenses were perpetrated by nine juveniles, of ages 6, 8, 9, 13, 14, 15 and 18 years.
* - One of the offenses was perpetrated by a colored male.
u - Represents 'Unknown'.
Value recovered for the month of October was $733.00 (includes 11 bicycles).

PATROL DIVISION - RICHLAND - COMPARISON

OCTOBER 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 1948)	Wash., Oregon & Calif. One Month Average	Richland Six Months (Jan-June 1948)	Richland Sept. 1948	Richland Oct. 1948
Murder	.181	.031	0	0	0
Robbery	3.47	.58	0	0	0
Aggravated Assault	1.75	.29	1.5	2.66	.66
Burglary	35.69	5.95	4.55	.66	.66
Larceny	127.06	21.18	22.0	30.66	33.0
Auto Theft	15.56	2.59	1.44	0	1.33

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 1948)	State of Washington One Month Average	Richland Six Months (Jan-June 1948)	Richland Sept. 1948	Richland Oct. 1948
Murder	.140	.023	0	0	0
Robbery	4.90	.82	0	0	0
Aggravated Assault	.78	.13	1.5	2.66	.66
Burglary	36.91	6.15	4.55	.66	.66
Larceny	92.22	15.37	22.0	30.66	33.0
Auto Theft	18.15	3.03	1.44	0	1.33

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

Classification	National Average (Jan-June 1948)	Richland Six Months (Jan-June 1948)	Richland Sept. 1948	Richland Oct. 1948
Robbery	55.5	0	0	0
Burglary	59.9	8%	0	0
Larceny	45.2	8	11%	8%
Auto Theft	71.6	38	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of 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.

COMMUNITY PATROL DIVISION
****
U. I. MONTHLY REPORT
OCTOBER, 1948
****

ACCIDENTS (TRAFFIC)	30
BOOTLEGGING	1
CARRYING CONCEALED WEAPON	1
BURGLARY	3
CHILD BITTEN BY DOG	1
DESTRUCTION OF PRIVATE PROPERTY	1
DISORDERLY CONDUCT	5
DISTURBANCE	3
GRAND LARCENY	3
INJURED PERSON	1
INVESTIGATION OF PERSONS	5
MISSING PERSONS	1
OPEN DOOR	1
PUBLIC INTOXICATION	32
PUBLIC NUISANCE	7
POSSESSION & USE OF NARCOTICS	1
STOLEN VEHICLES	2
TRAFFIC VIOLATIONS	17
THIRD DEGREE ASSAULT	1
VAGRANCY	3
REMOVAL OF GOVERNMENT PROPERTY	1
TOTAL	120

COMMUNITY PATROL DIVISION
****
OCTOBER, 1948
****

	OPEN DOORS	OPEN WINDOWS
SUB CONTRACTORS (3000 Area).....	60	12
FACILITIES (NORTH RICHLAND.....	17	5
FACILITIES (RICHLAND).....	13	1
SCHOOLS (NORTH RICHLAND).....	13	4
TOTAL.....	103	22

COMMUNITY DIVISIONS

COMMUNITY ACTIVITIES DIVISION

October, 1948

ORGANIZATION AND PERSONNEL

Number of Employees on roll	October
Beginning of month	9
End of month	9
No change	0

CHURCHES

The following is a tabulation of full time paid personnel, as of October 29, 1948:

	Ministers	Staff	Total
Assembly of God	1	0	1
Catholic	2	2	4
Central United Protestant	3	1	4
Church of Christ	1	0	1
Church of God	1	0	1
Episcopal Church	1	0	1
Free Methodist	1	0	1
Latter Day Saints	4	0	4
Mission Baptist	1	0	1
Mo. Synod Lutheran (Redeemer)	1	1	2
National Lutheran	1	2	3
Regular Baptist	1	0	1
United Protestant - North Richland	1	1	2
United Protestant - West Side	1	0	1
United Protestant - South Side	1	0	1
	21	7	28

All Richland Churches participated in the local "Fire Prevention Week" program with special announcements from all pulpits and the publication of articles in the Church periodicals. All church organizations were furnished with self-inspection forms which were distributed by the Community - Activities Division. In addition to the church's own inspections, members of the Division conducted inspections of all church properties during the week.

A delegation of five Richlanders representing the Christ The King Catholic Church attended the recent Diocesan Council of Catholic Men and Women held in Spokane.

Community - Activities Division

A combined meeting between the Youth and Adult Leagues of the Richland Lutheran Church and corresponding organizations from Kennewick, Pasco, and Grandview was held October 3 on the banks of the Yakima just northwest of Richland.

The Youth For Christ organization of Richland presented a public program at the Columbia High School on October 7. The program featured the appearance of Stanley Cain, magician, and was free to the public.

The Richland Lutheran Church sponsored a public showing of the color-sound film, "Queen Esther," at the Church on October 17.

The Associate Director of the City Work Department of the Congregational Christian Church of New York City visited Richland on October 24 and met in conference with the pastors of the local church groups.

On October 31, the South Side United Protestant Church held ground-breaking ceremonies at the site of their proposed new church building at the corner of Goethals Drive and Gillespie Street. Contracts for both the moving of their recently acquired Army Chapel from Geiger Field, Spokane, and the construction of the basement have been approved and let to contractors. Pending receipt of approved Lease-License forms from the Community - Legal Division, the South Side United Protestant Church was granted a temporary permit to begin construction of its basement at the contemplated site.

The Richland Lutheran Senior Choir presented a Reformation Day concert of sacred music on October 31, in the Columbia High School Auditorium.

SCHOOLS

A new dual-control car was made available on October 1 to both the school drivers' training program and the patrol's adult drivers' training program by the Richland Motor Company. Due to the fact that it is used in both programs, the Patrol Division assumed the responsibility of arranging for fuel and maintenance on their plant code, the school district assumed responsibility for insurance coverage for the automobile, and the title to the car was retained by Richland Motors.

The Jefferson School personnel donated 100% of their quota to the Community Chest drive on its first day. Their quota was $102.

On October 4, representatives of General Electric, Atomic Energy Commission, and the Community - Activities Division officially accepted the recently completed unit No. 1 of the Columbia High School addition. The keys to the new Columbia High School Gymnasium section were delivered to the Community - Activities Division on October 25. The Division representatives inspected the new addition and turned the keys over to school officials. As part of this inspection it was determined that the seating capacity of the new Gymnasium was 1500 bleacher seats, with the possibility of accommodating a total of 2000 with the addition of individual chairs.

Community - Activities Division

The new construction areas of Marcus Whitman, Spalding, and Lewis and Clark School were inspected by representatives of this Division each week during the month of October for the purpose of checking the contractor's progress and assisting in the solution of immediate problems arising from the construction.

As part of the community's observance of Fire Prevention Week, the school district promoted a program which included the following: presentation of eight plays; 2,150 bicycle license plates issued to advertise the week; essays written; 200 posters submitted by students; special fire prevention stories read to classes; fire drills conducted in all schools; fire alarm and fire extinguisher demonstrations for all students; lecture to high school students by the Manager of A.E.C. and the deputy state fire marshall; enrollment of 200 boys in junior fire marshall training course; and complete fire inspections of all school buildings and grounds by officials of A.E.C. and representatives of the Community - Activities Division.

More than 850 students of John Ball School participated in the first practice fire drill of the fall term on October 4. This was part of an extensive program of fire prevention and safety study undertaken at the school. Representatives of the Community - Activities Division and the local Fire Department participated as part of the Fire Prevention Week program.

The Board of Directors of School District #400 met in special session on October 4 in the library of the Marcus Whitman Grade School for the purpose of revising and adopting the budget of School District #400 for the year 1948-49.

During the week of October 4, 250 members of the school traffic patrols were treated to free movies at the Village Theater. The shows were sponsored by the American Legion Post.

All of the employees of School District #400 were honored at a banquet October 6 at the Columbia High School given by the Kiwanis Club of Richland.

The Benton-Franklin Regional Teachers' Institute of Washington State Education Association met at the Columbia High School on October 11, for a series of lectures by leaders in the field of education.

With the completion of new shop facilities at Columbia High School, enrollment for night school wood shop classes began October 14. The new shop facilities will accommodate 30 adult enrollees in two groups of 15.

During the week of October 18, fifty-four eighth grade pupils moved from Jefferson School and sixty-four eighth grade pupils were moved from Sacajawea School to Marcus Whitman. The move was designed to relieve crowded conditions at Jefferson and Sacajawea, particularly in the gymnasiums.

The Assistant Secretary of the Washington State Education Association addressed an all-school faculty meeting of the local association at the Columbia High School on October 26.

Community - Activities Division

The University of Washington Touring Theater was presented at Columbia High School auditorium on October 28. A special performance was scheduled in the afternoon for students and another for adults in the evening.

COMMUNITY

As of October 29, 1948, organizational personnel included:

State Game Commission	1
Villagers, Inc.	8
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	1
Jr. Chamber of Commerce	2
Red Cross	3
Castle Club	1
Post Office	78
Veterans Administration	2
Girl Scouts	2
	105

The annual Community Chest Drive which was launched September 30 to continue through October 23 with a goal of $27,508. The Community - Activities Division assisted in the preparation of publicity releases and the distribution and posting of bulletin notices. Members of the Camp Fire Girls, Boy Scouts, and Girl Scout Troops assisted with the community-wide distribution of printed matter relating to the drive and C. C. Anderson Company donated one of its show windows for a Red Feather display. The Community - Activities Division personnel, with 89% participating, raised 89% of its assigned quota. The main drive was extended into November in an effort to achieve 100% of the assigned quota.

On October 1, the Boy Scouts began work on the first unit of a three year building program at Camp Wallowa, the Summer Boy Scout Camp for Richland Scouts. The first building will house a kitchen and mess hall.

With the closing of the books on October 2, it was announced that the total number of registered voters in Richland and North Richland had passed the 10,000 mark. The county auditor commended particularly the Richland League of Women Voters for their cooperation. It was estimated that after deducting the names of those who had moved away since the last general election that there would be a total list of authorized voters in the neighborhood of 8,000.

The Coordinate Club held its fourth annual roundup October 2. An estimated 1300 pounds of beef and pork was consumed by the 450 in attendance.

Community - Activities Division

The Kiwanis Club of Richland entertained the employees of School District #400 with a banquet and variety show at the Columbia High School on October 6. This was the third annual affair of this type to be sponsored by the Kiwanis Club.

The Richland Veterans of Foreign Wars, Kenneth Cook Post 7952 announced on October 7 that approval had been received through the Community - Activities Division for the removal of a building from White Bluffs to Richland for use as a V.F.W. Clubhouse. The building involved is a residence, 42 feet by 49 feet, which will be completely renovated and subsequently enlarged after its removal to a selected site in Richland.

Interest in a golf course by a group of local business men and General Electric and Government employees has been revived. Meetings were held on October 7, 14, and 19, to formulate plans and effect a permanent organization. The site for the course is north of Richland along the Columbia River - bounded on the north by Stanley Road, east by Burlin Road, south by Snyder Road and west by Davison Road.

The Civil Aeronautics Administration sponsored a public showing of a film titled "Safety in Flight," in the Columbia High School study hall, October 7, at 7:00 PM.

It was announced on October 7 that Richland would be represented in the newly organized Mid-State Traveling Bowling League by a team to be sponsored by the Recreation Hall. The other teams entered in the League will include teams from Ellensburg, Sunnyside, and three from Yakima.

The Junior Chamber of Commerce announced on October 7 that they would sponsor a performance of Gilbert and Sullivan's "Mikado," to be produced by the Richland Light Opera Company.

On October 8, the Auxiliary organizations of the American Legion, the Veterans of Foreign Wars, and the Marine Corps League combined to sponsor a semi-formal dance at the Legion Ballroom.

On October 9, Richland completed a seven-day, all-out education program which resulted in the community's most successful Fire Prevention Week yet observed. Representatives of the Community - Activities Division inspected all club and organization property, promoting an intensive, voluntary clean up program to be checked by Self-Inspection forms distributed by the Division. As a result, fire committees reported greatly improved store room and housekeeping conditions resulting in the reduction of fire hazards. The Boy Scouts aided in the program

Community-Activities Division

On October 14, the Reserve Officers in the Tri-City area completed organization plans for the establishment of a research and development group to serve as a unit in the nation-wide Organized Reserve Corps.

A new Lodge of the Fraternal Order of Eagles at Richland was instituted October 17, at an organizational meeting held at Sacajawea School gymnasium on that date. Representatives of the Community - Activities Division have been assisting this fraternal group with tentative plans relative to the construction of a permanent headquarters and club house in the community.

Work was started October 18 on a large addition to the present Post Office at the corner of George Washington Way and Knight Street. The addition will include a west wing of 60 feet by 40 feet, an alcove on the east wing as a lunch room for employees, two additional offices, and a section for the finance department. Expanding the physical facilities of the Post Office became necessary as a result of a 300% gain in postal business in the past year. The Postmaster announced that the volume of mail going through the Post Office in the last three months totalled $45,757.72, as compared to $19,685.54 for a corresponding period last year.

Villagers, Inc., operators of the Community Library announced that, beginning October 18, the operating hours of the Library would be extended. According to the new schedule, the hours will be from 1:00 to 8:00 PM Mondays through Fridays; and from 1:00 to 5:00 PM Saturdays. Villagers, Inc. also announced the appointment of an assistant librarian.

An extensive traffic survey was made from October 19 through 21, the results of which will be a factor in determining the amount of federal aid to the state's budget for building a proposed new highway and bridge to Pasco. Representatives of the Community - Activities Division personally contacted staff members of all churches, schools, and community organizations for the purpose of completing the proper survey forms and distributing official windshield stickers.

On October 21, a twenty-four weather service was installed in the outer offices of the Civil Air Patrol air-base. This weather system uses a loud speaker system tuned to the Pendleton weather station at all times.

On October 22, the Community - Activities Division prepared and furnished election officials with community maps for distribution and publication, depicting the voting precincts of the community and location of Polling Places as they had been designated and made available by the Division.

The newly-organized Inter-Mountain Alpine Club held an organizational meeting on October 22 at the Lewis and Clark Grade School. Thirty-four persons attended. Pending official sanction as an approved community organization, this Division issued permission for the organizational meeting.

A large Republican political rally was held on October 24 in the Columbia High School and featured the appearance of candidates for the governorship, the lieutenant governor's post, and the office of attorney general.

Community - Activities Division

On October 23, Richland Camp Fire Girls volunteered their services to the Community Chest Drive and officiated in the counting of the feathers used in the Community Chest's publicity campaign display and contest at C. C. Anderson's stores.

On October 26 the Richland Basketball Association held its first meeting to formulate plans, for operating the independent basketball leagues for the season. Present indications are that sixteen or eighteen men's teams will participate. The Community - Activities Division is assisting the organization in setting up the league, or leagues, and will provide assistance throughout the season to promote this activity.

The manager of the Yakima Field Office of the Social Security Adminstration, Bueau of Old Age and Survivors Insurance, visited Richland on October 26 for the purpose of interviewing persons who have worked in commerce and industry since 1936 and who are 65 years of age and over. He was also available for general information regarding his bureau's activities.

An organizational meeting of the Richland Stamp Society was held at the Columbia High School on October 26.

On October 28, the Richland Dormitory Club, which now lists an active membership of 500 members and claims to be the largest social organization in the Yakima Valley, presented a "Dorm Club Variety Show" in the Marcus Whitman Grade School auditorium. The show was open to the general public.

Representatives of the Daughters of the American Revolution announced on October 28 that preliminary steps had been taken to organize a Richland Chapter of their organization and that an organizational meeting would be held for this purpose on November 5 at Tract House 928.

The Girl Scout Organizations announced that October 31 through November 6 would be "Girl Scout Week" and that appropriate events had been scheduled throughout the period of this observance.

The Richland Community Concert Association's 1948-49 season opened on October 31 with the presentation of the first of four concerts to be given in the Columbia High School auditorium this season.

More than 1,000 people heard lectures and saw films presented by Cliff Bergere, Indianapolis speedster, at Sacajawea Grade School, September 30 and October 1, The theme of his talks was the dangers of everyday driving. His appearance was sponsored by the Traffic Control Division.

On October 1, the Youth Council, which had been authorized by the Division to conduct a checking service at the Village Park Swimming Pool for the benefit of the Council's youth activities, submitted a financial statement which indicated a total receipt of $836.00 and an expenditure of $334.50, with a net profit of $501.50 for the 1948 season.

Community - Activities Division

On October 28, the Richland Community Swimming Pool Association, Inc. held its first corporate meeting in the high school gymnasium. Approval of the by-laws and election of a nine-member board of trustees were accomplished. Approximately $15,000 has been collected to underwrite this installation.

The number and types of organizations presently served by the Community - Activities Division include 14 business and professional clubs, 23 churches and church organizations, 5 civic organizations, 15 fraternal organizations, 6 music and art associations, 6 private instructors, 28 recreation and hobby groups, 7 schools and 7 parent teachers associations, 10 social clubs and organizations, 10 veteran and military organizations, 5 welfare organizations, 16 Boy Scout troops, 13 Camp Fire Girls troops, 36 Girl Scout troops, 3 other youth groups, and 13 miscellaneous organizations.

On October 12, 1948, final security clearance and approval by the Atomic Energy Commission was completed for the Richland Community Swimming Pool Association, Inc., Kenny Private Music School, and the Richland Air Corps Reserve. Further investigation is required for the Atomic City Motorcycle Club.

On October 27, 1948, the Recreation Advisory Committee held its regular monthly meeting. The Committee recommended that the following organizations be approved subject to the required security clearance: Richland Light Opera Company, Richland Golf Association, Richland Stamp Society, Inter-Mountain Alpine Club, P. Division Recreation Association, and the Society For the Preservation and Encouragement of Barber Shop Quartet Singing in America , Inc.

MAJOR ACTIVITIES DURING MONTH

October 28	University of Washington Touring Theater	Columbia High School
28	Dormitory Club Variety Show	Columbia High School
29	Columbia High School Homecoming	Bomber Bowl
31	Community Concert Association	Columbia High School

Community - Activities Division

RICHLAND PUBLIC SCHOOLS PERSONNEL AND ENROLLMENT REPORT

The following is a tabulation of full-time school district paid personnel, as of October 29, 1948:

Administration	3
Clerical	13
Principals and Supervisors	16
Teachers	224
Building Custodians	31
Cooks	19
Nursery School Ex. Day Care	17
Bus Drivers	2
	325

On October 29, 1948, there were 79 children enrolled in the Richland Nursery School with an average attendance of 55. There was an increase in enrollment during the month of 1. On this day there were 15 children enrolled in the Extended Day Care program of the Nursery with an average attendance for the month of 13. There was an increase in enrollment during the month of 3.

COLUMBIA HIGH SCHOOL

	Boys	Girls	Total
Freshmen (9th grade)	165	175	340
Sophmore (10th grade)	152	159	311
Junior (11th grade)	115	99	214
Senior (12th grade)	110	102	212
	542	535	1077

GRADE SCHOOLS

	Sacajawea	Lewis	Marcus	Jefferson	Spalding	Ball	Total
Kindergarten	72 (2)*	96(2)*	50 (2)*	72 (2)*	76 (4)*	99 (4)*	465
1st grade	124 (4)	155(5)	82 (3)	103 (3)	82 (3)	150 (4)	696
2nd grade	111 (4)	112(4)	69 (2)	90 (3)	78 (3)	113 (4)	573
3rd grade	108 (3)	116(4)	66 (3)	74 (2)	70 (3)	110 (3)	544
4th grade	114 (3)	105(3)	76 (3)	85 (3)	60 (2)	101 (3)	541
5th grade	105 (3)	98(3)	57 (2)	89 (3)	61 (2)	86 (3)	496
6th grade	93 (3)	81(3)	57 (2)	68 (2)	42 (2)	90 (3)	431
7th grade	86 (3)	86(3)	94 (3)	72 (2)		80 (3)	418
8th grade		74(2)	220 (7)			71 (2)	365
	813	923	771	653	469	900	4529

COMMUNITY DIVISIONS
COMMUNITY ACCOUNTING MONTHLY REPORT
October 31, 1948

The Community Accounting Division actually came into being as an operating group on October 4, 1948. Procedures are being improved upon as we begin to study the needs and desires of the Community Divisions in relation to accounting work. The morale is particularly good and progress is gratifying.

PERSONNEL

On roll October 1	2
Transferred from General Accounting	25
Transferred from Other Divisions	3
New Employees	2
Terminations	0
On roll October 31	32

ACCOUNTS RECEIVABLE

RENTS

A total of 237 new house leases were received and processed of which 138 represented leases on the new ranch type houses. Lease cancellations during the month of October numbered 135. Modification of leases totaled 668 most of which involved the purchase of G.I. furniture in prefabricated houses which is approximately one-half of the modifications necessary to complete the sale of furniture in these homes. Only one new facility lease was received which covered the operation of the Richland Jewelry Company. There were 106 dormitory assignments made and 105 terminations processed. Total revenue for rent was as follows:

Equipment	$ 249.73
Houses	200,326.67
Dormitories	15,310.68
Facilities	53,263.65
	$269,150.73

Four employees and a part-time working leader maintained the accounting records for all of the residences including tract houses and facilities located in the community of Richland. There are approximately 6000 accounts maintained at the present time by this Division.

TELEPHONES

We have had considerable difficulty receiving toll tickets from the Interstate Telephone Company on a current basis. We have requested them to improve this situation and some improvement has been noted during the latter part of the month. There are now approximately 2450 resident phones from which 12,000 to 13,000 toll calls originate each month. A recommendation has been submitted concerning the possibility of eliminating the processing of Pasco-Kennewick toll calls. Cost involved in processing these .10¢ tolls we feel exceeds the benefit derived by the Interstate Telephone Company, and of course, since the telephone accounting unit is merely performing a service for Interstate and receive no revenue from the tolls, it would be a great saving to eliminate handling

them. No definite action will be taken until a thorough investigation of the situation has been made.

Work of this group is kept on a current basis by five employees and a part-time clerical working leader.

MISCELLANEOUS

One employee is assigned to handle all miscellaneous receivable including backcharges for work performed for residences and facilities. Invoices are also written to carriers covering backcharges for labor used in loading and unloading household furniture for employees either moving to or away from the Project.

Outstanding travel advances at the end of October amounted to $1846.92.

There were 18 collection letters written in an attempt to reduce our delinquent receivable accounts. As a result eight accounts totaling $130.50 were closed.

ACCOUNTS PAYABLE

There are five employees and a clerical working leader handling all phases of the accounts payable work.

STATISTICS

Total October accounts payable vouchers processed - 348.
Total October freight bills processed - 188.
Total General Division vouchers processed (booked prior to October) - 86.
Total General Division freight bills processed (booked prior to October) - 132.
Number of purchase orders received - 59.
Amount of purchase orders - $44,298.44.
Receiving reports received - 210.
Payments to Puyallup Gardens subcontract G-216 amounted to $43,365.13.

GENERAL

There were 69 letters written to vendors concerning invoices or in answer to correspondence.

For the first time at Hanford Works since the inception of the Project the freight account reflected a zero balance. This was attributable to the small volume of freight bills received, but for the most part, credit is due the group for their efficiency in handling these freight bills which were received.

We are retaining $5,782.24 against payment made to Graysport Construction Company and Puyallup Gardens which amounts will be paid at such time as the contracts are completed satisfactorily.

GENERAL LEDGER

General Ledger accounts for the Community Division were established as of October 1, 1948 and a trial balance sheet will be prepared and included in the consolidated Hanford Works financial statement. One employee is maintaining the General Ledger accounts and work incidental to the General Ledger, and one employee maintains a control of all second class invoices issued and received and is responsible for work in connection with submitting vouchers to the General Division for reimbursement.

COST

There are four female employees and four male employees including the supervisor engaged in cost work of the Community Division.

COST CODES

Cost codes which were introduced as of September 1st have been received in the field very well. As soon as the operating reports are distributed for the month of September which will be within the next week, an up to date cost code book will be issued in a permanent binder.

WORK ORDERS

The work order procedure is being revised in cooperation with the Public Works Division and although a good deal of progress has been made, the revision is not yet complete. An overhead percentage figure of 77.1 has been applied to labor work order salaries and 78.3 to maintenance work order salaries. The factor appears in line but will be subject to revision after it has been used for a few months. Work orders have been scrutinized for valuation and authorization prior to recording them in the cost ledger.

COST REPORT

The compilation of cost reports has been very slow due to the fact that a new unit has been established and an entirely new system has been introduced. The reports for October will also be delayed but after the first two reports have been issued, subsequent reports should be ready for distribution by the 15th day of the following month. However, because the preparation of the reports is dependent upon distribution and assessments from other Divisions, cooperation in receiving such information promptly will play a big part in our ability to distribute the reports on a scheduled date.

PROJECT AND RELATED PERSONNEL - OCTOBER 1948

	9-30-48		10-29-48	
GOVERNMENT EMPLOYEES				
Civilian Personnel - Atomic Energy Commission	342		344	
Civilian Personnel - G. A. O.	4		4	
Total		346		348
RICHLAND VILLAGE PERSONNEL				
Commercial Facilities (Including No. Richland)	1,698		1,637	
Organizations, Clubs, Etc.,	92		105	
Schools	322		325	
Churches	28		28	
Total		2,140		2,095
MORRISON-KNUDSEN PERSONNEL (Columbia Camp)		229		262
CONSTRUCTION SUB-CONTRACTORS				
Atkinson-Jones	8,142		8,779	
Newport, Kern & Kibbe	17		16	
Newberry Neon	584		657	
Urban, Smyth, Warren Co.,	1,165		1,285	
J. B. Head Co.,	17		22	
Kellex Corporation	468		533	
J. Gordon Turnbull	80		75	
Giffels & Vallet, Inc.,	204		184	
Morrison-Knudsen Co.,	344		224	
C. C. Moore	236		256	
V. S. Jenkins Insulating Co.,	43		59	
Curtis Sand & Gravel	51		37	
National Carbon/Carbide Co.,	186		295	
Trowbridge & Flynn Electric Co.,	5		19	
J. A. Terteling & Son	1,026		1,010	
Graysport Construction Co.,	198		263	
Estep Electric	9		3	
Nettleton-Sound	797		609	
Thorgaard Plumbing	38		31	
Chris-Berg Co.,	132		164	
Holert Electrical Co.,	35		35	
Strasser Drilling Co.,	3		2	
Kelly Wells Co.,	2		2	
McNeill Construction Co.,	540		635	
Rust Engineering Co.,	13		10	
Arnold & Jeffers Co.,	39		35	

(CONTINUED ON PAGE #2)

PAGE #2	9-30-48		10-29-48	
CONSTRUCTION SUB-CONTRACTORS				
Pacific Roofing Co.,	39		38	
Central Service Co.,	11		16	
Charles Swanson	134		151	
Taylor Bros.,	14		14	
Builders Insulating Co.,	9		15	
Fox Metal Products	4		4	
Pioneer Sand & Gravel	5		7	
A. C. Grant	19		-	
A. B. C. Roofing	3		-	
D. L. Cooney	62		-	
Scott-Buttner	64		39	
Pittsburgh-Des Moines Steel	28		19	
Warsaw Elevators	3		2	
Martins Furniture	18		24	
Parson's Tile	3		2	
Williams Paint & Glass	5		5	
Seldon's Inc.,	2		2	
Richland Plumbing & Heating	11		-	
West Coast Painters	16		7	
Holaday & Edworthy	2		5	
Boedecker Chimney Co.,	8		8	
Chicago Bridge	8		17	
P. S. Lord	61		98	
Haughton Elevator Co.,	2		7	
H. H. Robertson	-		1	
E. J. Bartells Co.,	-		36	
Asbestos Supply	-		2	
H. P. Fischer & Sons	-		2	
Nelse-Mortenson	-		15	
Howard P. Foley Co.,	-		30	
Total		14,905		15,806
GENERAL ELECTRIC PERSONNEL		8,383		8,486
GRAND TOTAL		26,003		26,997

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