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\#6 - A. B. Greninger
\#7 - W. P. Overbeck
\#8 - F. W. Wilson
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March 23, 1948

MAR 25 1948

HANFORD WORKS

MONTHLY REPORT

FEBRUARY, 1948

CLASSIFICATION REVIEW FOR DECLASSIFICATION BUT LEFT UNCHANGED

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By Authority of WA Shepler, 6-6-91, RLD-CG-4
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Verified By DJ Brunner 8/12/91

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GENERAL SUMMARY

Production requirements were met by operating the D and F Piles at 275 MW, the B Pile remaining in stand-by condition. The first severe occurrence of a stuck slug in a process tube occurred in the D Pile on February 2. Approximately three days were required to remove this slug. The operating time efficiency was 68.4%, caused by the above difficulty and scheduled outages for normal discharge of metal and repairs to Van Stone flanges of the process tubes.

Production facilities in the 300 Area were placed on a partial two-shift basis on February 2, 1948 to meet anticipated demands for increased production.

The new metal casting facilities in the 300 Area were placed in operation in February.

Forty batches were started through the Canyon Buildings and forty-two were completed through the Isolation Building.

There was one major injury during February. The plant safety record at month-end was twenty-three days.

Mr. J. R. Rue has been transferred to Hanford Works as of February 16, 1948. He has been appointed Assistant Manager and will have budgetary control of operating costs.

Effective February 1, the Health Instrument group was removed from the Medical Department and will now be known as the Health Instrument Department. Dr. H. M. Parker is appointed Superintendent.

Effective February 1, Maintenance Engineering Section will assume the status of a separate Works Engineering Department, to be known as Project Engineering Department. This Department will handle plant improvement projects originating from plant operations. Mr. J. S. McMahon is appointed Superintendent.

Mr. D. H. Lauder was on an extended visit to the East beginning February 8, 1948. Mr. R. S. Neblett arrived at Hanford Works on February 16.

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STAFF

Manager	D. H. Lauder
Assistant Manager	G. G. Lail
Assistant Manager (Special Staff Assignments)	J. R. Rue
Assistant Manager and Works Engineer	W. P. Overbeck
Assistant Manager and Works Accountant	F. E. Baker
Construction Project Manager	F. R. Creedon
Production Superintendent	C. N. Gross
Technical Department Superintendent	A. B. Greninger
P Department Superintendent	J. E. Maider
S Department Superintendent	W. K. MacCready
Assistant Works Engineer	H. H. Miller
Maintenance Department Superintendent	W. W. Pleasants
Electrical Department Superintendent	H. A. Carlberg
Instrument Department Superintendent	H. D. Middel
Project Engineering Department Superintendent	J. S. McMahon
Service Department Superintendent	E. L. Richmond
Transportation Department Superintendent	R. T. Cooke
Medical Department Superintendent	W. D. Norwood, M.D.
Health Instrument Department Superintendent	H. M. Parker

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FORCE REPORT
FEBRUARY 1948

	Non-Exempt		Exempt		Total	
	1-30-48	2-27-48	1-30-48	2-27-48	1-30-48	2-27-48
Management	6	6	9	12	15	18
Design	131	141	109	110	240	251
Construction	135	160	218	241	353	401
P Department	233	241	55	55	288	296
S Department	238	242	59	59	297	301
Technical	291	325	192	203	483	528
Power	412	409	86	86	498	495
Maintenance	945	820	130	87	1075	907
Project Engineering	-	116	-	50	-	166
Electrical	242	242	44	45	286	287
Instrument	139	145	45	44	184	189
Service	1350	1470	234	232	1584	1702
Transportation	814	703	73	74	887	777
Medical	540	375	147	71	687	446
H. I. Department	-	176	-	76	-	252
Accounting	587	607	56	55	643	662
TOTAL	6063	6178	1457	1500	7520	7678

PERSONNEL DISTRIBUTION - FEBRUARY 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
MANAGEMENT	-	-	-	-	-	-	-	-	12	12
Clerical	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	18	18
DESIGN DEPARTMENT										
Exempt Employees	-	-	-	-	-	-	-	-	110	110
Non-Exempt Employees	-	-	-	-	-	-	-	-	82	82
Clerical	-	-	-	-	-	-	-	-	59	59
Total	-	-	-	-	-	-	-	-	251	251
CONSTRUCTION DEPARTMENT										
Exempt Employees	-	-	-	-	-	-	-	-	241	241
Non-Exempt Employees	-	-	-	-	-	-	-	-	81	81
Clerical	-	-	-	-	-	-	-	-	79	79
Total	-	-	-	-	-	-	-	-	401	401
P DEPARTMENT										
Supervisors	1	15	16	-	-	17	-	-	6	55
Operators	10	38	38	-	-	152	-	-	1	239
Clerical	-	-	-	-	-	-	-	-	2	2
Total	11	53	54	-	-	169	-	-	9	296
S DEPARTMENT										
Supervisors	-	-	-	19	30	-	2	-	8	59
Operators	-	-	-	96	130	-	12	-	2	240
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	115	160	-	14	-	12	301

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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
TECHNICAL DEPARTMENT										
Supervisors	-	4	-	6	6	32	-	-	9	57
Chemists-Engineers-Physicists-Jr. Technologists & Metallurgists	-	8	12	11	11	116	-	-	17	177
Laboratorians & Analysts	1	38	41	25	18	86	-	-	-	209
Clerical	-	2	1	-	-	20	-	-	8	31
Others	1	4	7	5	7	32	-	-	1	57
Total	2	53	61	47	42	288	-	-	35	528
POWER DEPARTMENT										
Supervisors	7	23	21	6	9	-	5	6	9	86
Operators	40	95	91	24	35	8	-	25	63	381
Clerical	-	-	-	-	-	-	2	-	1	3
Others	2	5	4	3	4	4	-	-	3	25
Total	49	123	116	33	48	12	7	31	76	495
MAINTENANCE DEPARTMENT										
Supervisors	1	4	11	6	15	7	11	0	31	86
Engineers	-	-	1	1	1	2	1	-	2	8
Mechanics	11	38	71	46	102	61	93	-	260	682
Clerical	-	-	-	-	1	-	11	-	-	12
Others	1	4	10	7	19	14	37	-	27	119
Total	13	46	93	60	138	84	153	-	320	907
PROJECT ENGINEERING DEPARTMENT										
Supervisors	-	-	-	-	1	-	-	-	14	15
Engineers	-	-	-	-	5	1	-	-	29	35
Drafting Personnel	-	-	1	-	6	2	-	-	33	43
Clerical	-	-	1	-	1	-	-	-	58	60
Others	-	-	1	-	2	-	-	-	10	13
Total	-	-	3	-	15	4	-	-	144	166

	100-D Area	100-D Area	100-F Area	200-E Area	200-W Area	300-Area	Plant General	3000 Area	700-1100 Area	Total
ELECTRICAL DEPARTMENT										
Supervisors	1	2	3	2	2	1	19	-	10	40
Electricians	7	10	17	13	11	11	62	-	48	179
Clerical	-	-	-	-	-	-	-	-	3	3
Others	1	1	2	1	3	2	34	-	21	65
Total	9	13	22	16	16	14	115	-	82	287
INSTRUMENT DEPARTMENT										
Supervisors	1	3	5	2	4	8	-	-	7	30
Engineers	-	-	-	1	-	10	-	-	6	17
Mechanics	3	15	15	12	15	33	-	-	6	99
Clerical	-	-	1	-	-	-	-	-	4	5
Others	2	1	3	1	3	20	-	-	8	38
Total	6	19	24	16	22	71	-	-	31	189
SERVICE DEPARTMENT										
Supervisors	13	7	9	9	9	12	12	46	115	232
Patrolman	50	58	64	78	99	72	14	76	104	617
Laundry Operators	-	-	-	-	2	-	-	-	2	4
Inspectors	5	4	4	4	4	-	3	8	1	33
Janitors	4	6	6	9	13	13	-	165	54	270
Clerical	-	-	-	-	-	-	58	37	128	223
Others	40	-	-	-	14	13	-	33	223	323
Total	112	75	83	100	141	110	87	367	627	1702
TRANSPORTATION DEPARTMENT										
Supervisors	6	2	2	3	3	2	7	-	49	74
Drivers (Based on Areas Served)	13	23	27	32	45	32	22	-	63	257
Mechanics	9	2	1	2	2	-	1	-	81	98
Trainmen	4	4	4	4	4	-	-	-	8	28
Laborers	3	11	2	6	19	8	-	-	85	134
Clerical	-	1	1	1	-	1	-	-	29	33
Others	18	11	6	12	34	3	-	-	79	153
Total	53	54	43	60	97	46	30	-	394	777

	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 DEPARTMENT										
Physicians	-	-	-	-	-	-	9	-	15	24
Dentists	-	-	-	-	-	-	-	-	10	10
Technicians	-	1	-	1	-	1	-	-	28	31
Clerical	-	1	1	1	1	1	-	-	97	102
Others	1	4	-	3	3	2	9	4	253	279
Total	1	6	1	5	4	4	18	4	403	446
H. I. DEPARTMENT										
Supervisors	-	1	3	4	7	13	-	-	5	33
Engineers	1	3	6	13	12	6	2	-	-	43
H. I. Inspectors	-	3	7	9	9	22	10	-	1	61
Clerical	-	-	-	-	-	2	-	-	3	5
Others	-	10	11	14	38	26	5	-	6	110
Total	1	17	27	40	66	69	17	-	15	252
ACCOUNTING DEPARTMENT										
Supervisors	-	-	-	-	-	-	-	-	56	56
Clerks	1	5	7	6	9	6	-	-	291	325
Telephone & Teletype Operators	-	-	-	-	-	-	-	-	51	51
Others	-	3	3	6	13	11	-	-	194	230
Total	1	8	10	12	22	17	-	-	592	662
GRAND TOTAL	258	467	537	504	771	888	441	402	3410	7678

ARRIVALS AND DEPARTURES OF EXEMPT PERSONNEL

ARRIVALS

Name	Department	Physical Arrival	Origin
John R. Rue	Management	2-14-48	Trf.Schenectady
H. H. Zornig	Management	2-1-48	Trf.Schenectady
Albert T. Donnels	Design	2-2-48	New
Frank R. Ofner	Design	2-4-48	New
Donald L. Peterson	Design	1-26-48	Trf.Schenectady
A. G. Silvester	Design	2-1-48	Trf.Schenectady
Francis H. Bacon	Construction	2-18-48	New
Byron M. Barbeau	Construction	2-4-48	New
Alexander L. Black	Construction	2-2-48	New
Loris B. Brinkman	Construction	2-2-48	New
Robert G. Colwell	Construction	2-10-48	New
John G. C. Diehl	Construction	2-23-48	New
Benjamin D. Dirks	Construction	2-12-48	New
William E. Downing	Construction	2-18-48	New
Earl R. Erickson	Construction	2-13-48	New
Lamar (NMN) Fontaine, Jr.,	Construction	2-23-48	New
Earl A. Greenleaf	Construction	2-11-48	New
Frank C. Hatch	Construction	2-5-48	New
Harry W. Johnson	Construction	2-16-48	New
Lyle O. Kimball	Construction	2-16-48	New
Robert G. Kramer	Construction	2-5-48	New
Gerald E. Lattin	Construction	2-9-48	New
Harold C. Lee	Construction	2-19-48	New
John J. McInerny	Construction	2-2-48	New
John C. Manderscheid	Construction	2-2-48	New
Oscar N. Regnier, Jr.,	Construction	2-11-48	New
Edwin C. Schlender	Construction	2-17-48	New
Harold B. Schroeder	Construction	2-16-48	New
Frank T. Keenan	"S" Dept.	2-18-48	New
Leland L. Burger	Technical	2-23-48	New
John B. Burnham, Jr.,	Technical	2-16-48	New
Frederic (NMN) Clagett	Technical	2-27-48	New
Noboru (NMN) Endow	Technical	2-12-48	New
P. Roger Gillette	Technical	2-16-48	New
C. E. Lacy	Technical	2-1-48	Trf,Schenectady
J. B. Lambert	Technical	2-1-48	Trf.Schenectady

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ARRIVALS

Name	Department	Physical Arrival	Origin
D. W.Pearce	Technical	2-1-48	Trf.Schenectady
R. F. Plott	Technical	2-1-48	Trf.Schenectady
Frank B. Quinlan	Technical	2-1-48	Trf.Schenectady
Edward A. Pfistor	Power	2-2-48	New
Milford H. Meuser	Maintenance	2-16-48	New
Frank E. Adley	H. I. Department	2-2-48	New
Edmond J. Barrett	Project Engineering	2-18-48	New

DEPARTURES

Name	Department	Date of Departure	Origin
B. Norman Hoberg	Design	1-30-48	Vol-Quit-
Dale H. Rea	Design	1-30-48	Vol-Quit-Housing
George H. Bauer	Design	2-20-48	*
Merton E. Buffham	Construction	2-26-48	Vol-Quit-Housing
C. C. Henderson	Construction	1-16-48	*
W. E. Tibbetts	Construction	1-2-48	*
John J. Williams	Construction	2-13-48	Vol-Quit-To accept better position.
Fred Moss	"S" Department	1-31-48	Vol-Quit-Housing.
Abel C. Aronson	Technical	1-31-48	Vol-Quit
Reuben Kronstadt	Technical	2-13-48	Vol-Quit-Other employment.
Elwood J. Reber	Technical	2-24-48	Trf.Schenectady
William A. Preisz	Instrument	2-23-48	Vol-Quit-To go into private business.
Dorothy E. Kinkaid	Service	2-3-48	Vol-Quit
Gordon E. Towne	Service	2-4-48	Vol-Quit-To join Army.
Francis E. McCarty	Transportation	1-30-48	Retired.
Clarence O. Lystad	H. I. Department	2-3-48	Vol-Quit-Another job.

* Removed from roll.

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P DEPARTMENT

FEBRUARY - 1948

I. GENERAL

The D and F Piles operated at 275 M.W. throughout February except for scheduled outages. Each operating area had an extended outage of approximately one week to allow repairs to Van Stone flanges. The B-Pile was maintained in standby condition with a water flow of 10,300 g.p.m.

The 100 Area discharge rate continued at 60 tons per month. The 300 Area production amounted to 105 tons of acceptable 4" canned slugs; several operations in this area were placed on a 2-shift, five-day week schedule on February 2, 1948.

Commencing with the first metal charged in the piles this month, all replacement slugs are of a nominal 4" length. A stock of 8" slugs currently stored in the 300 Area will be held in reserve for use at some future date.

The new casting facilities in Building 314 in the 300 Area were placed in operation, the first crucible charge being melted and poured in the south furnace on February 2. Conversion from 14" to 21" billet manufacture was commenced on February 23 and completed February 27. Eleven tons of billets were produced during the month.

A study setting forth metal requirements for possible 3-pile operation was prepared in February. (Document No. HW-8961, Lee to Shugg, February 23, 1948).

The 100 Area Process Control group continued preliminary test work on the long stroke and the magazine-type rear face charging machines. After modification, both machines will be set up at the B-Pile for evaluation.

The design work on a spare effluent sewer line at the F-Pile is nearly complete. Orders are being placed for materials of construction.

In the first severe occurrence of this type, the stringer in Tube No. 2464-D was found to be firmly wedged during normal discharge operations on February 2, requiring the cutting away of the process tube ribs downstream of the stuck slug. Following this, the charge was pushed out by means of a hydraulic ram previously developed for this purpose.

As a result of successful pile exposure tests on lead dipped alpha rolled material, it was decided to convert billets to rods by the alpha-rolling or alpha-extrusion process. The February billet shipment was diverted to a rolling mill in the Middle West for rolling.

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P Department

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll: February

Beginning of Month	288
End of Month	296
Net Increase	8

The employees added to the payroll were assigned as indicated below, the addition being necessary for increased production of slugs.

Ten new operators were hired and two terminated voluntarily. All operator moves were in the 300 Area.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time Operated (%)	-	70.4	66.4
Operating Efficiency (%)	-	69.6	64.7
*Power Level (M.W.)	-	275	275
*Inlet Water Temperature	5.7	5.3	5.3
*Outlet Water Temperature (Maximum °C., 10 tubes, .240" zone)	5.7	46.6	52.5
Number of Scrams	-	0	0
Number of Purges	0	1	2
Helium Consumption (cu. ft.)	27,620	55,131	61,860
Metal Discharged (tons)	0	29.7	31.8
Inhours Gained (this month)	0	14	(-)6
*Inhours Poisoned	-	341	289
*Inhours in Rods	-	59	28

*Month end figures.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled Outages: Metal Discharged	Scheduled Outages: Maintenance	Unscheduled	Length of Outages (Hours)
2-1-48	F**	F		155.1
2-2-48	D*			83.6
2-16-48	D**	D		122.7
2-17-48	F*			34.6
2-24-48	F*			39.7
2-29-48	F**	F		4.2

* Startup was delayed because of difficulty in discharging tubes.
** Extended outage for repairs to Van Stone flanges.

P Department

Operating Experience

A number of Special Request samples were processed during February. Details of their irradiation and of all currently active Production Tests may be found in the Technical section of this report. Production Tests having significant operational details are indicated below:

No. 105-75-P (Exposure of 4" Slugs)
Tube No. 1172-F, containing 27-4" pieces and 18-8" pieces was discharged on February 24. Although the stringer was at a concentration about 2½ times normal, no difficulties in discharging were experienced.

105-144-P (Graphite Packing Samples from Tube Channels)
Samples of graphite were removed from the channel of Tube No. 0182-F without incident on February 6.

105-168-P (Replacement of Pile Helium Atmosphere with Carbon Dioxide)
The atmosphere in the D-Pile was maintained at approximately the following analysis during the entire month:

Helium	90.0%
Carbon Dioxide	8.5%
Air and other impurities	1.5%

No effects other than those reported last month have been observed.

The carbon dioxide addition equipment is being revised in accordance with Blueprint No. H-1-780 to permit more efficient handling of the gas. A supplement to this Production Test is being prepared to increase the carbon dioxide in the pile atmosphere to 25%.

The installation of strain gauges on the front and rear faces of D-Pile was continued during February. These gauges are used for following and observing motion of the pile during replacement of the helium atmosphere with carbon dioxide. To date, 34 gauges have been installed; 13 more are scheduled.

105-174-P (Annealing of Graphite)
The step plug and thimble were removed from the "A" Test Hole at D-Pile on February 18; a special plug incorporating a gas seal and radiation shielding was installed but no new thimble was inserted. During shutdowns, the shield plug will be removed to allow measurements of the graphite blocks; basic measurements of this type were made on February 18 and 19 on graphite surrounding Tubes No. 2177-D, 2186-D, 2286-D, and 2287-D which were discharged and left empty on February 17. Operation as air filled tubes will

allow these graphite blocks to run at a higher than normal temperature, with the possibility that some annealing of the graphite will result.

Capacity tests on the water filters at Buildings 183-F and 183-D were begun on February 9 and 21 respectively. No operational difficulties have been experienced at the pile buildings as a result of this test other than a rise in the rate of increase of water pressure drop in the process tubes. To date this has been about twice normal at F-Pile and only slightly above normal at D-Pile. No significant change in the iron content of the water or in the effluent water radioactivity has been observed.

Mechanical Experience

The program of inspection and repair of Van Stone flanges was continued. "To date" figures on repairs at the end of the month were:

	Pile	Inspected	Below .030"	%	Below .040"	%
Front	D	1921	-	-	230	12
	F	1784	163	9	-	-
Rear	D	1903	-	-	177	9
	F	1781	1040	58	-	-

	Repaired	Gun Barrels Given Additional Clearance
D	525	289
F	1203	324

Considerable difficulty was encountered during routine discharges because of "hard-to-push" stringers. Tubes No. 3183-D, 3672-D, 3684-D, 1481-F, 1875-F, 2078-F, and 3282-F all required special equipment, (hand charger, hydraulic ram, and expanding mandrel), for discharge. Tube No. 2464-D, on February 2, stuck firmly and could not be moved until the pieces downstream of the stuck slug had been removed by washing them out with high pressure process water. Following this, a special cutting tool was inserted from the rear face of the pile to cut away most of the process tube ribs downstream of the stuck piece, after which the tube was discharged readily using the hand charger. (A detailed report on this incident is being issued separately). In the 8 tubes indicated above, a total of 10 badly blistered or distorted slugs were found. Examination of the end cap data on these slugs revealed that all were standard 8" MZ pieces canned in the 300 Area between May 15 and June 6, 1947, 5 of them having been canned on May 29, 1947. Further investigation will be made to determine if any slug fabrication conditions can be correlated with the blistering effect.

Tube No. 3183-D was replaced on February 19 without incident and charged with regular metal. The remaining 7 tubes which gave trouble are out of service at present and will be replaced in March.

P Department

Tube No. 0182-F was removed in February in order to obtain samples of irradiated graphite from the center of the pile. (See Production Test 105-144-P above). This tube had been established as an air tube after difficulty was experienced in a discharge during October, 1947. The tube was not replaced. Short sections of process tubing crimped at the inner ends and containing grooved steel pieces, were inserted at each end and the flanges were blanked. Special shielding was installed over the blanked ends.

All horizontal and vertical rods at D and F-Pile were in satisfactory operating condition at the end of the month. Work done on them in February was as follows:

On February 16, the stepped plug on the No. 25 vertical rod at D-Pile was shimmed to bring the rod and plug back to vertical. This plug was shimmed previously on November 25, 1947.

The tips on Vertical Rods No. 24 and 31 at F-Pile were found to be bowed and were replaced with new tips.

No. 4 and 5 Horizontal Rods at F-Pile showed some evidence of binding. Both were coated with Aqua-Dag and have operated satisfactorily since.

Repairs to the F-Area process water sewer line between Building 105 and 107 were continued. Six new leaks have evidenced themselves during the month. Design work on a spare line is nearly completed; orders for the necessary steel piping will be placed early in March.

The chamber in the "D" Test Hole at D-Pile was replaced with one of a different type on February 3 for use in conjunction with the No. 1 galvanometer in the Control Room. This replacement was necessary since the chamber formerly used for this control was in "A" Test Hole and was removed along with the thimble on February 18 in conjunction with Production Test 105-174-P (Annealing of Graphite).

GAS PROCESSING BUILDING

The F-Pile was purged with approximately 15,000 cu. ft. of helium over the period February 7-8 to raise the gas purity from 77% to 90% following an extended outage.

SPECIAL HAZARDS

The water leaks in the F-Area process sewer line gave maximum readings of 25 mr/hour. All such areas were roped off as danger zones.

No unusually hazardous conditions were encountered during the month.

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of February was as follows:

P Department

Billets Produced	11 Tons
Billets Extruded	86 Tons
Rods Machined	106 Tons
Acceptable Pieces Canned	105 Tons

Melt Plant:

The casting yields were as follows:

	% Yield February
Billet	65.6
Solid Metal	85.8

On February 2 the first crucible charge was melted and poured in the south ("B") furnace. The charge melted at approximately 1110°C under a vacuum of 6 microns. A leak developed around the stopper rod seat of the crucible and it was necessary to pour at approximately 1205°C. On subsequent pours, stopper rod leakage was somewhat in evidence until heavier counter weights were installed on the fulcrum arm controls on the stopper rods.

On February 3 the first complete furnace charge (four crucibles) was melted and poured successfully in the "B" furnace. This furnace was operated daily until February 9, when arcing across the coils necessitated shutdown. The arcing originated during the melting of the Number 3 crucible charge. The graphite sleeve between the crucible and insulating brick had been removed to determine the sleeve's effect on heat transfer. Inspection of the furnace revealed that it was necessary to remove the coils to repair the Micarta supports and repaint the coils with glyptol. To reduce the possibility of future arcing the following changes were made in the "A" and "B" furnaces: The bolts were counter sunk in the Micarta supports on the coils and covered with facing plates; the two cross I beam supports were removed from the top side and welded on the bottom side of the false bottom of each furnace. In addition, the brick cubes used as insulation between the coils and sleeves were replaced with solid brick.

Work was completed on the "A" furnace on February 12 and the "B" furnace on February 17. Outgassing was completed on February 16 and 20, respectively. Both furnaces were operated for the balance of the month on a two-shift schedule.

On February 24, molds were used in "A" furnace that had been treated with a solution of carbonaceous cement (C-3) and aerosol as recommended by Mallinckrodt. When the melts were poured there was evidence of the metal boiling in the molds, which indicated that the molds contained moisture. All twelve billets cast from this charge were rejected for surface porosity. The mold treatment was repeated on molds used in the same furnace on February 25, with special precautions being taken to assure that the molds were properly preheated. They appeared to be dry when they were placed in

the furnace; however, boiling was observed in two molds and the two billets were rejected for porosity. The mold treatment was discontinued and is currently being investigated with respect to application and drying.

Since 21" billets are preferred by the rolling mills, conversion of the furnaces was started on February 23 to cast billets of that length. A five-inch extension was added to each crucible so that the charge could be increased from approximately 450 lbs. to 575 lbs. A seven-inch extension was added to each mold sleeve. Eight acceptable 21" billets were poured from "B" furnace on February 25. Difficulty was encountered in the removal of the crucibles following this charge. The insulating brick underneath the crucibles fused to the crucible bottoms and was pulled out. It was thought that the indicated pouring temperatures, as observed by the optical pyrometer from the top of the crucibles, may have been lower than the actual temperature due to a top scum, or layer, preventing accurate readings. A study is being made of pouring temperatures and the pouring time is currently based on the calculated KWH required providing that the indicated temperature does not exceed/315°C. The conversion of the "A" furnace for casting 21" billets was completed on February 27.

To date the capping of billets has not been completely successful with respect to reducing the porosity and pipes in the top end of billets. Various capping times, ranging from 5 seconds to 1 minute and 45 seconds, have been tried. The study is being continued. An average of approximately two inches is being cropped in order to conform with the ½" maximum depth for pipes in finished billets.

Extrusion, Outgassing, and Machining:

Extrusion, Machining, and Billet yields were as follows:

	% Yield (4" A's)		
	January	February	To Date 1943
Extrusion	93.8	93.9	93.9
Machining	79.7	79.1	79.4
Billet	74.6	74.3	74.4

Extrusion was operated three eight-hour shifts on regular material in February. Following arrangements to convert current billet production to alpha-rolling, only enough rods to meet production quotas will be extruded until rolled rods are made available. Machining was placed on a two-shift schedule beginning February 2 and was returned to one-shift on February 20 because of the conversion to processing alpha-rolled rods.

Eighteen billets of Lot No. 544-B, cast in the Melt Plant and having pipes over one inch in depth, were extruded on February 11 to determine if the piping would be carried into the rods. The rods were machined on February 18 with a normal yield; however, the average slug weight was 3.92 lbs. as compared to 3.94 lbs. for slugs machined from virgin material. The individual weights ranged from 3.88 lbs. to 3.95 lbs.

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Twenty chamfered-end billets were gamma extruded in conformance with Production Test 314-53-M, "Alpha Phase Extrusion" on February 11. The resulting rods will be used to furnish control slugs for the test. Twenty copper-jacketed billets were alpha extruded under this test on February 19 and 24. These billets were preheated in a lead bath at a temperature of 1130°C with the copper jackets punctured so the lead could enter the jackets. They were extruded through a 1.525" die, using a lead-in cone ahead of the die and a 2½" graphite insert between the dummy block and the billet. The extrusion pressures ranged from 600 to 750 tons. After the extrusion of seven billets on February 19 the press container and liner cracked. The remaining thirteen billets were extruded on February 24 without incident after replacing the container and liner. The rods from this test are currently being machined to standard 8" MZ dimensions.

The rods from Lots No. 482-Y through 492-Y inclusive were machined in conformance with Production Test No. 313-101-M, "Canning 4" Slugs of 1.356" Nominal Diameter."

Chip Recovery and Oxide Burning

The Chip Recovery yield was as follows:

% Yield		
January	February	To Date 1948
89.7	89.2	89.4

Chip Recovery operated twelve eight-hour shifts and processed 25,583 lbs. of briquettes. The press was shutdown on February 2 and 3 when it became necessary to repair the compression ram.

The material burned in the oxide burner was as follows:

Weight Out - Lbs.		
January	February	To Date 1948
9233	6336	15569

The oxide burner was operated on a daily schedule. It was shutdown on February 10 and 11 to make necessary repairs on the hopper and to weld the top shell. The exhaust stack was extended above the 314 Building roof level on February 17. A study for improving the exhaust system is being continued; precautions are being taken in the charging and stirring of oxides to keep air contamination to a minimum.

Canning Operation

The canning yield was as follows:

[redacted]

	% Yield (4")		
	January	February	To Date 1948
	85.5	87.9	86.8

Canning rejects, by cause, were:

	% of Total Canned (4")		
	January	February	To Date 1948
Non-Seating	3.2	3.4	3.3
Marred Surface	1.2	1.7	1.5
Al Si on Outside of Can	2.1	1.4	1.7
Frost Test	2.6	1.4	1.9
Bad Welds	2.4	1.2	1.7
Miscellaneous	3.0	3.0	3.1
	14.5	12.1	13.2

In spite of greatly increased production and the influx of new operators, the overall quality continued to show improvement.

A total of 184 pieces was rejected on the G line and 319 on the H line on February 17. The laboratory analyses indicated a tin content and in the respective canning baths. On February 18 the analysis of the H line canning bath was reported as This necessitated rejecting 221 pieces. There was no apprent reason for the tin exceeding the specification limit as the analysis had been averaging about prior to the aforementioned difficulties.

Canning was started on Production Test No. 313-101-M, "Canning 4" Slugs of 1.356" Nominal Diameter", on February 18 and completed on February 25.

Further work done to determine the merits of using phosphoric acid versus hydrofluorosilicic acid as a cap etchant resulted in a proposal that phosphoric acid be used as a cap etchant.

One hundred and fifty papoose slugs and 39 receptacle slugs were canned in February.

A total of 1430 bismuth slugs was canned. This completes the canning of Lot No. 1422. In addition, 250 pieces of Special Request No. 13-15 (beryllium nitride) were canned.

Recovery Operation:

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	% Recovered		Ave. Weight - Lbs.	
	February	To Date 1948	February	To Date 1948
Z Slugs	80.3	80.6	3.911	3.912
X Slugs	12.5	12.5	3.854	3.854
Rejects	7.2	6.9	--	--
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

January	February	To Date 1948
0.85/M	0.20/M	0.47/M

The number of autoclave failures decreased appreciably during February and can be attributed chiefly to improved technique in cap-wetting and welding. Ten failures occurred; one piece had a swelling on the sidewall beginning at the base of the cap, three pieces had small ruptures in the sidewall beginning at the base of the cap, and six pieces were completely destroyed.

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

	% Useable (4")		
	January	February	To Date 1948
Aluminum Cans	86.5	88.7	87.9
Aluminum Caps	99.5	99.3	99.3
Steel Sleeves	80.6	79.3	79.7

Two new gauges have been fabricated for use in checking the base thickness, inside diameter, and dimple depth of a can in one operation. These gauges have proved satisfactory and time saving.

On February 16 the coil on the frost test machine failed and was replaced. Since the number of frost test rejects decreased at about the same time, it was thought that the exchange of coils might have altered the machine's efficiency. The machine was thoroughly checked and 24 frost test rejects were given to the Plant Assistance Group for self-radiographing. The results indicated that the machine was functioning normally. This problem is still under investigation.

300 Area Test Pile:

This unit was operated on a one-shift five-day week schedule in February making 97 tests on canned slugs, 29 on billet eggs, 487 on graphite bars,

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and carrying out the following special work requests:

Request No.		No. of Tests
12	To determine if CSF bars vary in purity from the outside edges to the center.	7
13	To determine whether the poisoning effect of a given amount of cadmium is influenced by the amount of moderator in the immediate vicinity of cadmium.	6
15	To determine the effect of "B" slugs on the flux distribution in the center of the metal test stringer.	4

Tests on canned slugs from Lot 105-BT gave an average value of -1.47 dih as compared to a limit of -0.20 dih. The billets from which the slugs were fabricated were known to have a high T.D.S. value and chromium content. Only 49 pieces were included in the lot and they were held for investigation and subsequent scrapping.

Graphite bars are being sorted after testing as follows:

Class	Test Result (ih)
E	+ 0.300 or greater.
D	+ 0.100 through + 0.299 inclusive
H	- 0.200 through + 0.099 inclusive
M	- 1.000 through - 0.201 inclusive
P	Less than - 1.000

Four bar testing was investigated on February 16, 24 runs on 24 bars of graphite being made. Results indicated that 4 bar testing is not suited to the present test requirements.

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OPERATING SECTION

I. GENERAL

Forty-two batches were completed in the Canyon Buildings during February, and forty-two were processed through the Concentration Buildings and the Isolation Building. The average purity for the completed charges was 98.8%.

The material balances for T and B Plants averaged 101.0% and 105.4%, respectively, for a combined average of 103.4%. Waste losses for the two plants averaged 2.5%.

Canyon and Concentration Building Production Performance Data — (2/1/48 – 2/29/48, inclusive)

	B Plant	T Plant	Combined
Number of charges started	21	19	40
Number of charges completed	23	19	42
For completed charges:			
Percentage of starting product in waste			
This month	2.6(a)	2.4(a)	2.5
Last month	2.6(b)	2.5(b)	2.5
Cumulative to date	5.4(c)	5.3(c)	5.3
Percentage of starting product recovered			
This month	102.8	98.6	100.9
Last month	102.4	98.2	100.3
Cumulative to date	97.0	95.5	96.3
Percentage of starting product accounted for			
This month	105.4	101.0	103.4
Last month	105.0	100.7	102.8
Cumulative to date	102.3	100.8	101.6
Gamma decontamination factor (log.)			
This month	7.62	7.72	7.66
Last month	7.58	7.63	7.60
Cumulative to date	7.31	7.27	7.29

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.021%—T Plant; 0.016%—B Plant. (b) 0.026%—T Plant; 0.021%—B Plant. (c) 0.16%—T Plant; 0.0045%—B Plant.

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Isolation Building Performance Data (2/1/48 – 2/29/48, inclusive)

	% of Incoming Product			
	Prepared for Shipment	Recycle	Losses	Material Balance
Average for this month	95.3	4.25	0.03	99.6
Average for last month	95.7	4.75	0.05	100.5
Average to date	96.5	3.94	0.11	100.6

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	297
End of month	301
Net increase	4

Remarks: 5 employees were added on weekly roll.
1 new hire on monthly roll.
1 termination on weekly roll.
1 transfer to construction from weekly roll.

Changes in supervisory organization:

F. T. Keenan, a new hire, reported to work on February 16, 1948, as Supervisor-in-Training.

K. C. Vint, formerly Chief Supervisor, 200 East Area, and H. W. Huntley formerly Senior Supervisor, 200 East Area, are transferred to the Design and Construction Consultants Section of the S Department as of March 1, 1948, making the following changes in the Operating Section necessary:

E. A. Foskett, formerly Assistant Chief Supervisor, 200 West Area, will assume the duties of Chief Supervisor, 200 East Area as of March 1, 1948.

F. A. E. Stainken, formerly Area Supervisor, 200 East Area, will assume the duties of Assistant Chief Supervisor, 200 West Area, as of March 1, 1948.

W. B. Reed, formerly Senior Supervisor, will assume the duties of Area Supervisor, 200 East Area, as of March 1, 1948.

A. P. Boston, formerly Shift Supervisor, will assume the duties of Senior Supervisor, 200 West Area, as of March 1, 1948.

P. A. Levernier, formerly Shift Supervisor, will assume the duties of Senior Supervisor, 200 East Area, as of March 1, 1948.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants

Section 8 Extraction Waste Losses

Evaluation of Section 8 extraction variables continued in both Canyon Buildings under Production Test 221-T-12. At T Plant the study of the effect of the temperature variable during centrifugation was continued. The final average waste loss for the month was 0.44 percent. At B Plant variations in phosphoric addition rate and precipitate digestion time (phases 5-D and 5-E) of the Production Test, were evaluated further. The average final waste loss for the month (five runs exceeded the arbitrary waste limit of 0.60 percent and were reworked) was 0.46 percent.

Section 13 Scavenger Reduction

Evaluation of Production Test 221-B-6, involving the reduction of bismuth, cerium and zirconium scavengers, continued throughout the month. At T Plant, all runs processed during the month, with the exception of T-8-01-D-12, used 25 percent of the normal amount of cerium and zirconium scavengers with a 50 percent reduction in the amount of hydrogen peroxide used in cake solution. The average 13-14BP waste loss for the month was 0.84 percent.

On Run T-8-02-D-12, cerium and zirconium scavengers were completely eliminated as was the bismuth which is normally added with the scavengers in Section 13. This was done in order to determine whether or not a significant reduction in waste loss could be obtained with the maximum reduction in scavengers and bismuth permitted by the test. The 13-14BP waste loss on this run was 1.59 percent (reworked to 1.23 percent) and the 17-4 log decontamination factor dropped to 4.78 from an average of 5.14. It is possible that the high waste was caused by incomplete oxidation. The test will be repeated in March.

At B Plant, the use of 25 percent of the normal amount of cerium-zirconium scavengers with a 50 percent reduction in hydrogen peroxide for cake solution was continued throughout the month. Although a new jet assembly was installed during the latter part of January, addition of cake dissolving acid via the precipitator continues to result in higher than normal losses. Tests indicate that these losses are not due to the presence of product bearing heels in the precipitator but may now be due to insufficient cleaning of the precipitator during the period in which cake removal acid was added directly from the scale tank. A modified procedure is now in use which permits cake removal acid to be added directly to the centrifuge bowl in conjunction with a small acid flush of the precipitator following each run.

Addition of acid via precipitator	(4 runs)	1.47%
Addition of acid directly to bowl	(15 runs)	0.76%
Average final 13-14BP (3 runs reworked)	(19 runs)	0.87%

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Acid Wash T-8-02-AW1

An acid flush was processed through the T Plant Decontamination and Concentration Buildings early in the month. No abnormal product holdup in the process equipment was indicated.

Section E Waste Losses

An improvement in waste losses of approximately 0.05 percent has been effected in both T and B Plants by cooling to a minimum of 25°C during centrifugation instead of continued cooling, which during cold weather reduces the temperature to 8°C to 10°C. The improvement is attributed to more efficient centrifugation of the less viscous solution and to larger crystal growth.

Section A Byproduct Cake Removal

All runs were processed in Section A of the T Plant Concentration Building under Production Test 224-T-11, "Bismuth Phosphate Byproduct Removal (A-4BP) with Water or Water-Nitric Acid Combination." As reported last month the minimum amount of nitric acid necessary for cake removal is 700 pounds of 60 percent nitric acid which represents a 50 percent reduction from normal. Beyond this point analytical difficulties develop. Previous work has shown that cake removal can be effected efficiently with water alone but that representative samples of the slurry could not be obtained. During the month it has been determined that this difficulty is caused by the precipitate settling in the tip of the sampling pipette. Methods of getting a representative sample from the pipette are now being investigated with the assistance of the Laboratory Group.

WASTE DISPOSAL

T and B Plants

Cribbing of Second Cycle Wastes

The special perforating tool for taking soil samples from the test wells was completed during the month. Although the tool has been successfully demonstrated during a test, minor difficulties have not permitted soil samples to be taken from the test wells at the T Plant second cycle waste crib. Cribbing of second cycle wastes at T Plant will be resumed as soon as the necessary soil sampling has been accomplished.

At B Plant 39,000 gallons of second cycle waste was cribbed from the X-112-B tank when it was discovered that liquid was entering the fifty foot test shaft through the two six inch lateral tubes which extend under the crib at depths of nine and fifteen feet below the crib. Tests have shown that this liquid is extremely low in activity and it is expected that cribbing will be resumed as soon as the liquor (about eighteen inches) can be removed from the shaft and modified sampling facilities provided.

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Additional Waste Disposal and Waste Storage Facilities

a. 241-TX Tank Farm -- Project 163

Tank construction by the subcontractor appears to be progressing satisfactorily. Concrete tank bottoms have been poured for fifteen tanks. The asphaltic membrane has been applied to three tank bottoms and fabrication of the steel bottom plates has been started.

In the General Electric phase of the work, the excavation for the 154-TX diversion box and catch tank has been completed and the forms for the first pour of concrete for the 154-TX diversion box have been installed. Excavation for the trench and the installation of the concrete encasement from the 154-TX diversion box to the 155-TX diversion box has been completed except for the short portion between the 154-TX diversion box and the 222-T Building. Painting of the encasement and the laying of pipe is progressing. Forms for the last pour of concrete for the 155-TX diversion box have been installed. Excavation of the trench from the 155-TX diversion box to the 151 and 152-U diversion boxes is essentially complete and approximately 200 feet of concrete encasement in this trench has been poured. Excavation of the trench from the 155-TX diversion box to the 154-TX diversion box is approximately 85 percent complete.

b. Crib and Tile Field -- 221-B Cell Drainage Water

In order to avoid the possible leaching of product from the 224-B waste sludge in the 201-B tank, and to eliminate the possibility of jetting wastes from the 224-B to the 221-B Building or vice versa due to use of a common line and further, to prevent the overloading of the 201-B cribs, it has been proposed that a crib and tile field be installed in the vicinity of the 361-B tank for the purpose of disposing of the 221-B cell drainage water. Project No. C-225 covering this work has been submitted to the A.E.C. for approval.

Metal Waste Sample

A twenty-five gallon sample of metal waste supernate for use in metal waste recovery development work at Site K-25 was taken from tank X-103-T without incident.

Waste Status

The status of the Waste Storage Areas on February 29, 1948, is shown in the following table:

Bldgs. 241 Tanks	Waste	Percentage Full B	C	BX	T	U	Reserve Capacity in Batches to Process B	C	BX	T	U	Total
x101,2,3	Metal	100	100	12.4	100	100	0	0	236	0	0)	686
x104,5,6	Metal	—	100	0		46.7			269	—	144)	
x201,2,3,4	Metal	0	100	—	0	0	—	0			37)	
x107,8,9	1st Cycle	100	59.2	0	100	0	0	138	338	0	338)	
x110,1,2	1st Cycle	—	100	—	—	87.1	—	0	—	—	44)	858
x104,5,6	1st Cycle	—	--	—	100	—	—	—	--		)	[redacted]

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Bldg. 241 Tanks	Waste	Percentage Full B	C	BX	T	U	Reserve Capacity in Batches to Process B	C	BX	T	U	Total
x104,5,6	2nd Cycle	89.4	--	—			48				)	
x110,1,2	2nd Cycle	100	--	0	67		0	—	454	151	)	676
x105,6	2nd Cycle	—	—	—	92.3	—				23	)	

MECHANICAL PERFORMANCE

Project C-166 — Additional Nitric Acid Storage Facilities

In accordance with the project, six new 10'x14' vertical stainless steel tanks have been received and set in place; three in the 211-B and three in the 211-T tank farms. The seventh tank was removed from the 273-E Building and set in place in the 211-B tank farm. Work is now in progress on the fabrication and installation of the necessary drip pans, connecting lines and catwalks.

SPECIAL HAZARDS

Stack Gas Contamination

As reported last month, one new fan equipped with stainless steel inlet and outlet ducts has been installed at the 291-T and 291-B stacks. Operation during the month of February was limited to the use of the new fans except for a short period when it was necessary to take the 291-T fan out of service for the purpose of adjusting the drive belts. Indications to date are that a noticeable decrease in the number and intensity of the discrete active particles being discharged has been effected. The third fan will be installed at 291-T early in March and fabrication of the fourth fan for installation at 291-B is being expedited. Measures designed to protect personnel from possible inhalation or ingestion are being continued.

A project covering the installation of new fans and stainless steel ducts, the development of methods and equipment for stack gas decontamination and for area cleanup is being prepared.

Several methods for removing the active particles which have been deposited on the ground around the stacks in the East and West Areas have been tried. The most promising method appears to be the use of some type of vacuum cleaner, although it is recognized that it may be necessary to actually remove the top layer of surface soil in order to effect a cleanup.

METEOROLOGICAL SECTION

A total of eighty-seven forecasts were issued to the T and B Plants during February, with an average accuracy of 85.6 percent.

[redacted]

S Department

General weather conditions for February are shown in the following table:

Maximum average hourly wind velocity at 200'	58 mph on 2/18/48
Minimum average hourly wind velocity at 200'	0 mph
Maximum average hourly wind velocity at 50'	48 mph on 2/18/48
Minimum average hourly wind velocity at 50'	0 mph
Prevailing wind direction	NW
Prevailing wind quadrant	NW
Maximum air temperature (4 feet)	64°F on 2/17/48
Minimum air temperature (4 feet)	1°C on 2/3/48
Number of days precipitation and/or fog occurred	8
Number of days precipitation occurred	7
Number of days snow occurred	4
Number of days fog occurred	5
Greatest duration of precipitation	22.4 hrs on 1/31/48 and 2/1/48

DESIGN AND CONSTRUCTION CONSULTANTS SECTION

Redox

During the week of February 16, 1948, representatives of the Kellex Corporation met at Hanford with Company personnel in the first of a series of bi-weekly liaison meetings to be held alternately at Hanford and at New York City. Kellex presented their "Schedules and Estimates - Main Plant" which incorporated two alternate plans for process design scheduling. The plans were as follows:

1. Alternate A assumes that Kellex will receive the main plant process and design criteria in the form of a Specifications Letter from General Electric on November 15, 1948.

2. Alternate B assumes that Kellex will proceed at once with the design of a main plant, using basic information already furnished for the test plant. The process flowsheet and design will be modified by Kellex in accordance with sound engineering principles to reflect the difference in scale and the difference in objectives of a test unit and a production unit.

The General Electric Company accepted "Alternate B" with the following modifications:

1. General Electric will release preliminary incremental process design studies to Kellex on a closely scheduled partial release basis, starting March 1, 1948.

2. Receipt of this material by Kellex will permit the direct and immediate initiation of main plant process design without the necessity for awaiting final detailed specifications from General Electric.

3. The design schedule agreed upon will permit the release of a tentative overall process flowsheet on or about August 1, 1948

[redacted]

S Department

The preliminary and tentative nature of this work was emphasized by both companies in view of the status of the Redox development program and the necessity for making the following assumptions as the present basis for the main plant process design:

1. The use of vertical, packed column contactors.

2. The use of the Chicago Redox flowsheet of September 1, 1947.

3. The adoption of the $Al(NO_3)_3$ version of the second uranium cycle as shown in Specification Letter No. 15 released for the Test Plant.

4. A disregard for the possible instability of hexone with respect to high level radiation effects.

5. No provisions to be made for pretreatment of hexone.

6. The consideration of waste gas purification as a process design problem separate from Redox.

7. The possibility of providing "hot" waste pretreatment facilities prior to the cribbing of certain of these wastes.

The S Department Consultants Group will closely assist the Redox Development Section of the Technical Department in the scheduled release of the process design data to Kellex. The first of these Redox Process Studies, "Study No. PP-1, Metal Solution, Clarification and Oxidation" (~~HW-9001~~), was completed by monthend and ready for transmittal to Kellex on March 1, 1948, as scheduled.

During the month the Technical Department was requested to initiate a critical mass study of the Redox process as related to full scale plant activity. Work will commence early in March and be expedited as rapidly as possible in view of the direct bearing the results may have on main plant design.

Area Laundry

The Design Engineering Department requested the Kellex Corporation to prepare a design study and cost estimate covering the proposed additional protective clothing laundry facilities. The Consultants Group provided Kellex with all information requested and outlined in detail the desired requirements of the proposed facility.

The study will be completed by Kellex early in March.

[redacted]

TECHNICAL DEPARTMENT

FEBRUARY 1948

GENERAL

M. D. Peterson, R. W. Stoughton, F. T. Miles, and H. M. Feder of the Clinton National Laboratory visited here from February 3 to 6 to discuss solvent extraction problems, and the hexone radiation stability tests which are being carried out at Oak Ridge for the Redox program.

George L. Heitman, of the Knolls Atomic Power Division, visited here from February 6 to February 13 for consultations on the "beta" experiment.

John B. Sampson, physicist from the Knolls Atomic Power Division, arrived on February 11 to spend approximately one month assisting in the calculation of control systems for the new piles.

M. Studier and E. K. Hyde (of Argonne National Laboratory) completed their analytical work on Request 44 during the week of February 8 - 14, and returned to Chicago.

The regular semi-monthly meeting on Redox design was held on February 16-17-18 with the Kellex process design representatives and was attended by H. H. Willis, A. P. Weber, T. I. Peterson, A. A. Regel, and K. O. Donelian of the Kellex Corporation.

C. S. Wynn and H. B. Smith of the Air Reduction Company spent the week of February 23 here discussing stack gas disposal problems and particularly the clean-up of mists and dusts which are now exhausted with the Canyon ventilation air.

H. P. Sleeper, of the General Engineering and Consulting Laboratory, Schenectady, and C. E. Clifford and T. Rockwell, of Clinton National Laboratory, arrived on February 26 for consultation on new shielding systems for piles.

Business trips of Technical Department personnel during February were as follows:

C. P. Cabell attended the sectional meeting of the American Institute of Electrical Engineers in Seattle, Washington, on February 11. He gave a talk entitled, "Hanford Works from an Engineer's Viewpoint".

C. G. Stevenson attended an A.E.C. meeting of project site Information Division heads in Washington, D. C., on February 10-12. On his return trip he reviewed informational methods and facilities at Oak Ridge (both A.E.C. and Clinton) and at the Argonne National Laboratory in Chicago.

C. E. Lacy attended the Metallurgy Information Meeting held at the Argonne National Laboratory on February 12-13.

R. J. Hale served as chairman of the Laboratory Design Conference at Argonne National Laboratory on February 23-24. The subject of this session was "Surfaces". V. R. Cooper, W. O. Switzer, and C. M. Slansky also attended this conference. Dr. Slansky remained at Argonne February 25-27 in general discussions on Redox process chemistry.

Technical Department

R. E. Smith went to Seattle on February 23-24 to inspect equipment being fabricated by the Alaskan Copper Company for the Redox program.

R. J. Schier and T.S. Jones left for Ft. Wayne, Indiana, on February 28, where they are to supervise the rolling of uranium billets into rods for Hanford. This work is being done by the Joslyn Manufacturing & Supply Company.

ORGANIZATION AND PERSONNEL

Personnel totals in the several divisions and groups were as follows:

	January 31	February 29
Pile Physics	19	21
Pile Engineering	12	13
200 Plant Assistance	17	16
Chemical Development	75	79
Chemical Research	12	15
300 Plant Assistance - 313	5	7
300 Plant Assistance - 314	4	4
Metallurgy Laboratory	10	15
Laboratories Division	301	330
Statistics Division	10	10
Information Division	10	9
Administration	8	9
	483	528

The increase of 45 in total personnel resulted from net additions of 11 and 34, respectively, to the monthly and weekly rolls.

Effective with the discontinuance of the Hanford Branch of the Schenectady Research Laboratory on February 1, five of the scientific personnel comprising this group were transferred to the Technical Department, as follows:

C. E. Lacy (metallurgist) to Metallurgy Laboratory
F. B. Quinlan (engineer) to Metallurgy Laboratory
J. B. Lambert (engineer) to Pile Engineering
R. F. Plott (physicist) to Pile Physics
D. W. Pearce (chemist) to Chemical Research

E. J. Reber, an engineer in 200 Plant Assistance, was transferred to the Knolls Atomic Power Laboratory on February 24.

The other personnel changes reflected by the above statistics may be summarized as follows:

The Pile Physics Division employed one physicist. Chemical Development added one weekly chemist and three other non-exempt people. The Chemical Research Division employed one monthly chemist, and added a stenographer by transfer from Chemical Development. One weekly metallurgist was employed for 300 Plant Assistance (313), and this group added also a laboratorian by transfer from the Laboratories Division. One exempt metallurgist was employed for the Metallurgy Laboratory, and two laboratorians were transferred to it from

Laboratories. The latter Division continued its Redox program expansion adding 1 monthly chemist, 6 weekly chemists, 24 laboratorians, 8 laborers, and 2 clerical; transfers out and terminations reduced its net increase to 29.

At month-end there were 1 exempt and 46 non-exempt personnel on the Technical rolls awaiting security clearance for classified work. Most of the latter were laboratorians.

300 AREA PLANT ASSISTANCE

Uranium Melting and Casting

Remelting of uranium scrap was started in the Building 314 melt plant on February 2, and this operation has been followed closely from a plant assistance standpoint.

Crucible charges have been made up as a mixture of scrap of the following types in the approximate proportions in which uranium scrap is produced in 300 Area operations:

TX	-	11.1%
TXB	-	37.8
UM	-	20.0
BT	-	26.7
G	-	4.4
		100.0%

Unbriquetted turnings scrap (TX) is added to fill voids in the charge. Billets produced from this scrap blend have been designated as Type "B". In the course of operations, pouring temperatures of 1210°C (2210°F) to 1400°C (2552°F) have been used, and pressures have been as high as 300 microns because of manipulation difficulties with the furnaces. However, sufficient data are not available at present to correlate the effect of operating conditions on billet quality and yield.

Results of chemical and spectrographic analyses of 18 casting heats (54 billets) indicate that the quality of these billets is at least comparable to that of billets formerly produced from scrap by Metal Hydrides. Results reported for some of the metal impurities are as follow:

Carbon	-	300 and 341 ppm (2 determinations)
Hydrogen	-	L 10 ppm (2 determinations)
Iron	-	56 to 77 ppm
Silicon	-	44 to 91 ppm
Nitrogen	-	10 to 78 ppm
Boron	-	L 0.2 ppm
Density	-	18.84 to 18.96 gm/cc.

During the week of February 8, alterations were made on the furnaces to minimize the tendency for coils to arc since arcing occurred when a coil assembly was tried without a graphite sleeve. When the coils were reassembled, solid Type K-30 refractory brick was substituted for the 1" cubes previously used, and this form of insulation has effected a reduction of 40% in the melt time.

Attempts to reduce the lengths of casting pipes by capping billets after they have partly solidified have not yet been successful. Only when molten metal is

allowed to drip on to the top of the billet as it solidifies is the pipe cavity eliminated. With the introduction of 24" molds (on February 25) for the production of 21" length billets for alpha rolling, it could be observed that the top of the billet solidifies within 30 seconds after pouring, and that the pipe forms beneath this crust. The capping study is being continued.

Results of laboratory experiments with the heating of Type AGR graphite in air at 648° to 1315°C (1200°-2400°F) indicated that graphite does not deteriorate rapidly when heated as high as 981°C (1800°F) for 20 minutes and cooled in air. When air cooling of the furnace crucible and liner from 900°C (1652°F) was tried after casting, the sleeve oxidized and had to be replaced after two runs because the insulating brick surrounding it prevented it from cooling rapidly. However, there was negligible oxidation of the crucible. Cooling from 800°C (1472°F) is being investigated.

Gamma Phase Extrusion of Uranium

The forty Type C virgin uranium billets that were reported to contain unusually high amounts of hydrogen (46 ppm) were gamma extruded as Lot No. 540 on February 12. Chemical analyses of samples from 12 rods indicated an average gas content of only 1.9 ppm, and a maximum of 3.2 ppm. Accordingly, these rods were released for normal fabrication.

Eighteen deeply piped (2" to 3") billets from the first 51 Type B billets cast from remelted uranium scrap in the new Building 314 melt plant were gamma extruded and machined as Lot No. 544 to determine the effect of casting pipes on extruded rod quality. Results of a visual inspection of 426 FA-size slugs after pickling (prior to canning) showed the following distribution of voids and pipes:

	Rejected	OK to Can
Sound slugs	0	40.0%
Slugs containing voids 0.020" to 0.100" in diameter	0	28.6%
Piped slugs	8.2%	23.2%

In addition, individual weighing of these slugs showed them to have an average weight 0.02 lb. less than normal gamma extruded material.

The large number of defective slugs that resulted in this trial, together with their lower average weight, indicate that it is desirable to eliminate billet flaws by either cropping or improved casting technique since the flaws are not healed during rod fabrication.

Alpha Phase Extrusion of Uranium

Work has been started on the preparation of about 200 lead-dip canned, standard 8-inch "MZ" slugs under P.T. 314-53-M for pile evaluation of alpha extruded material. For this test, 20 copper-jacketed virgin uranium billets with chamfered ends were alpha extruded with the 300 Area press. These billets were heated to 609°C (1130°F) in lead (with jacket perforation to assure penetration of lead for lubrication), and then extruded through a 1.535" diameter die. An average pressure of 725 tons was required to start the billets through the die, and the average pressure was 625 tons.

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Technical Department

Twenty paired billets of a similar type were gamma extruded to furnish control slugs for this test. These alpha and gamma extruded rods, as well as the several small lots of alpha extruded uranium rod on hand from earlier trials here and at Detroit, are now being machined into slugs.

Alpha Phase Rolling of Uranium

The A.E.C. completed arrangements for Joslyn Manufacturing and Supply Company to alpha-roll one 30-ton carload of 14" Mallinckrodt billets into 1.5" diameter rod at their Ft. Wayne, Indiana, plant. The conditions for this work are to duplicate those used for the 10-ton run made at Joslyn for Hanford in August 1947. R. J. Schier and T. S. Jones left for Ft. Wayne on February 28, to follow this 30-ton rolling.

Slug Machining

The work of testing the suitability of two proposed substitutes for the Calol cutting oil now used in the slug machining operation has been completed, with the conclusion that either Texaco Soluble Oil C or the new-formula Calol will be satisfactory for this purpose. It is now planned to test similarly another proposed substitute, Cim-Cool, a sample of which has been ordered. An interim report on the covering production test (P.T. 313-98-M, "Evaluation of Cutting Oils") is being issued, with final reporting to be made when the testing of Cim-Cool is completed.

Under P.T. 313-101-M (see next Section), approximately 6,000 four-inch slugs were machined to "I" diameter (1.356" + 0.001" - 0.002"), and another 6,000 to "A" diameter (1.359" + 0.001" - 0.002").

Slug Canning

The "A" and "I" slugs of P.T. 313-101-M were canned by the standard triple-dip process to determine whether the 0.003" reduction in diameter will relieve the non-seating trouble commonly experienced in canning "A" diameter slugs (even in the 4" length), without at the same time increasing frost test rejections. Final inspection of these slugs, and the evaluation of results, have not yet been completed.

Evaluation of the slugs produced under P.T. 313-99-M, "Lead-Dip Canning of Four-Inch 'A' Diameter Uranium Slugs", is still incomplete. The recently-devised jacket adherence tester (described separately, below) is being used in this evaluation work. In addition, metallographic examination and analytical checks for total lead content are being conducted.

Comparative tests to determine the suitability of a 20% phosphoric acid etch for aluminum caps, in place of the 1% fluosilicic acid now specified in the Process, indicated that the phosphoric acid is satisfactory for etching the caps currently supplied. Since the concentration of phosphoric acid is more easily controlled, and since this etchant is less expensive than the fluosilicic acid, the revised Process (now in preparation) will specify the phosphoric etch.

Slug Inspection and Testing

The bond strength testing device was modified to handle 4-inch slugs. This mechanical slug stripper consists of two recessed bearings which firmly hold a slug at the ends while permitting it to rotate freely about its longitudinal

axis. A strip of the desired width is separated from the remainder of the can by machining to the uranium layer in two circumferential cuts. The strip is cut in two and is broken away from the base metal at one end. This free end is gripped by mechanical jaws while a known force is applied to tear the strip of aluminum can from the slug. The force required is a measure of the strength of the bond.

While no definite generalizations can be made on the basis of results to date, it is indicated that the highest bond strength exists on lead-dip recovered pieces. The jacket adherence appears much better on rolled material canned either by the three-dip or lead-dip processes than on extruded material. Mechanical shock applied by administering blows of sufficient force to deform the can on a region subsequently stripped on the testing device appears to strengthen the bond rather than to weaken or shatter it. Thermal shock created by repeated passage of the slugs through the frost testing machine, followed immediately by a cold water quench, appears to have no effect on the bond strength. Work on this testing program is continuing.

In connection with the Process revision, tests have been conducted to determine the feasibility of relaxing the temperature tolerance specification for the constant temperature air bath which conditions slugs for the frost test. This work has been complicated by failure of the frost test induction coil, and by the need for replacing the standard pilot slugs. Installation of a new coil necessitated readjustment of the electrical system to resonance, and of the power level to indicate the proper degree of frost melting over void areas. The equipment has now been adjusted to give reasonable reproducibility of results, and a new set of pilot slugs is being collected and evaluated by means of self-radiographs. Meanwhile the temperature tolerances for the air bath are being investigated, and efforts to improve the reproducibility of results are underway.

The slugs from two rods that had been withheld from production channels (P.T. 314-47-M) because of reported high chromium content, and later released when analysis showed only 50 ppm, were tested for reactivity in the Test Pile on January 30 and found to have extremely low reactivity (-1.47 dih). Individual weighing of the slugs showed no subnormal densities; therefore, samples were cut from representative slugs and analyzed spectrochemically to determine the causes for the low reactivity. Cobalt in excess of 1000 ppm was reported. Since these slugs were made from extrusion butt (BT) material (Lot 105), it is assumed that contamination with chipped-off Stoody facing from the dummy blocks was responsible for the high cobalt content.

Miscellaneous

Six capsules were loaded with graphite and crimped, using the assembling jig heretofore employed for the purpose. Owing to the unusually soft aluminum used in making these capsules, much difficulty was experienced in withdrawing the expanded capsules from the jig. The assembling equipment was redesigned, and using these new tools, 16 more capsules were loaded with improved facility. The capsules were attached to their special slugs and delivered to the 100 Areas for pile loading.

Special Request Nos. R-55 (4 pieces), R-62 (15 pieces), R-64 (2 pieces), and R-65 (2 pieces) were canned, tested, and shipped to the 100 Areas or to the supplier, as required.

Technical Department

The 104 radiographs of canned 8-inch "A" diameter slugs furnished by Dr. Charlton of the Schenectady Research Laboratory were compared, and the 20 best and 20 worst slugs from the standpoint of internal voids were selected and shipped in equal numbers to 100-D and 100-F Areas for charging under P.T. 105-173-P.

Five dummy R-40 slugs were canned for the Pile Engineering Division for use in testing the "can opener" facility.

A check on the history of a group of slugs that recently showed bad blistering in the 100 Area piles reveals that seven of the nine slugs, representing four different lots of TX and P material, canned on four different days, were extruded on the same day. This is a strong indication that the factors responsible for blistering are associated with one or more of the three rod fabrication operations (extrusion, outgassing and straightening), and tentatively eliminates a variety of other suspected factors.

METALLURGY LABORATORY

Alpha Extruded Uranium Rod

A report was issued covering the examination of uranium rods alpha extruded at Detroit on September 17 and 18, October 10, and November 3. This report is Doc. HW-8754, dated February 5, 1948.

The results of the examination of the uranium rods alpha extruded in the 300 Area on December 12, 1947 and January 22, 1948 are reported in Doc. No. HW-8808 and Doc. No. HW-8807, respectively, both dated February 9, 1948.

Transverse and longitudinal samples of alpha extruded and alpha rolled uranium were metallographically prepared and sealed in evacuated glass tubes previously flushed with argon, and then were shipped to Dr. D. Harker at Schenectady. These samples will be used by Harker for a preliminary determination of any preference of crystal orientations obtained by these two methods of rod fabrication.

Examination of Irradiated Uranium

Redesign and rebuilding of the wheel shaft and other features which were added to the slug cut-off box allowed a number of successful trial runs on 1-5/8" diameter rold rolled steel stock to be completed in the 200-W Area Maintenance Shop. Completion of the box mounting in the 200-N Area, and the first cutting of a slug, were delayed by higher priority shop jobs taking precedence over the box revisions.

Bonded Slug Compound Layers

Continuing the study of bonding of uranium during the canning process, a number of samples of uranium have been dipped in liquid metal baths of the parent metals of the alloys used in the canning process. These samples will be used for the purpose of studying the compound layers formed. The layers formed are to be compared to the layers formed during production canning. Identification is made by their reaction to various etchants and their micro-hardness values. Chemical analyses of these layers are also planned, if and when suitable techniques can be had for obtaining the pure compounds.

Dilatometric Studies of Uranium

Expansion and contraction curves on alpha rolled uranium have been made through the temperature range of about -196°C to about 700°C. At the extremely low

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temperatures a regular and continuous expansion and contraction occurred; however, due to the low temperatures involved, the regularity of the curve is not considered proof of alpha phase continuity to these low temperatures. Different average coefficients of linear expansion for temperatures below room temperature from those above room temperature were obtained. No explanation for these variations is available.

Checks on the microstructures of samples simply quenched, and of samples polished, quenched, deformed at these low temperatures and re-examined, have indicated no changes other than those that occur during room temperature deformation.

Uranium Billet Studies

Studies of the macrostructure of two uranium billets show that near the top of the billet the grains are columnar in shape, with the major axis of the grains nearly perpendicular to the sides of the billet, whereas the grains in the lower portion are more polyhedral in shape. Macro-examination of the billet sections revealed apparent crystals of a large size; however, microscopic examination of these crystals showed them to be composed of many smaller ones. These small grains are further complicated by the presence of a large number of broad "twin" bands. It was concluded that it probably will not be possible to obtain a good pseudo-single crystal of uranium by machining material from a billet.

Orientation Studies by Etch Pit Technique

Experiments undertaken sometime ago, but discontinued due to the pressure of other work, have been re-initiated to find a suitable etchant for the evaluation of grain orientation of uranium by the etch pit method. Geometrically shaped 4, 5, and 6-sided pits were obtained when gamma extruded uranium was suitably etched with a solution containing one part water saturated with $FeCl_3.6H_2O$. The etchant does not reveal grain boundaries, and the few deep pits obtained are considered insufficient to evaluate the orientation.

Electrolytic etching of uranium with a solution of 10% oxalic acid and water produced geometric etch pits and shows promise as a solution for this purpose. This etch also outlines the grains to make them visible without benefit of light polarization; however, interference with structural analysis is produced by the etch pits obtained.

Three additional solutions frequently used for producing etch pits on other metals were tried in an effort to improve on the results obtained by the exalic acid etch, but the pits obtained are not satisfactory.

Redox Corrosion Tests

Stellite Star "J" samples showed no weight changes after an exposure of four days in solutions IAX, IAF, IAS, IBX, and IBP. Hastelloy C exposed to these same solutions showed partial removal of what appeared to be an oxide coating in IAX and IBP, with an accompanying high weight loss, but no indication of corrosion of the base metal has been observed. Chemical analyses of IAX solution after four days exposure to one of these coated Hastelloy C samples showed quite positive results for phosphorus, indicating that the coating could be a Parkerize.

A 9.1% loss in weight was observed in 6 days on an irregularly shaped sample of Colmoney No. 5 in static IAX solution. Accordingly, this alloy is not recommended for use in the Redox process.

Technical Department

No significant changes have occurred in two weeks to Stellite "J" and T-316 in static IAX solution.

The corrosion resistance of welded stainless steel samples 347, 316, and 309 in Redox solutions IAX, IAS, IAF, and IBX is reported in Progress Report No. 2, Doc. HW-8731, issued February 3, 1948.

Progress Report No. 3, on the corrosion resistance of special alloys in Redox solutions, was issued as Doc. No. HW-8790, dated February 6, 1948.

Miscellaneous

Two new uranium electropolishing units were assembled and put into operation.

An investigation to evaluate the suitability of centrifugally-cast Type 302 stainless steel containing boron for use in the construction of vertical safety rods was requested by the Design Engineering Department. These studies are underway.

Welded stainless steel samples of tank material to be used in Redox vessel construction, and which were submitted by the Design Engineering Department, were macro- and micro-examined and were found to satisfy the original drawing specifications in all respects.

Three small samples of uranium which were taken from the centers of rods believed to be from Lot 116-P, which showed unusual blistering during pile exposure, were macro-etched and examined. No unusual macrostructures were observed.

LABORATORIES DIVISION

Work Volume Statistics

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

	January		February	
	Samples	Determinations	Samples	Determinations
Routine Control, 200	1553	2559	1648	2621
Routine Control 300	798	3001	774	3314
Water Control, 100, 700	9853	17488	9769	18282
Redox Control	1391	4576	1023	3573
Process Reagents	811	1462	886	1592
Essential Materials	118	666	105	580
Special Samples	1707	2632	1534	2314
Totals	16231	32384	15739	32276

200 Area Process Control

Dr. M. Studier and Dr. E. K. Hyde, from Argonne National Laboratory, completed their observations and assistance in connection with work in the 200-E Control Laboratory pertinent to their Special Request No. 44. The irradiated sample of U_3O_8 was processed by the Laboratory personnel without incident. Decay studies are still being made, and the data will be compiled and forwarded to them upon completion. The dissolver solution will also be bottled and returned to them when the activity has decayed to a safe handling level.

Technical Department

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

Laboratory	Ave. Geometry	No. Tests
B & T Plant	50.52%	103
Isolation Bldg.	50.49	57

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:

	January		February	
Sample	Precision (±%)	No. Out of Control	Precision(±%)	No. Out of Control
8-1-MR	1.30	10	1.49	13
P-1	1.57	5	1.68	3
AT	1.29	1	1.23	1

The average range for the last 69 AT titrations was 0.69%, as compared to 0.84% for 49 results in January.

The standard iron solution used in the Isolation Laboratory to check the chemical titration of plutonium was analyzed a total of 108 times during the month. There were 65, 33, and 10 results inside ±1%, ±2%, and outside ±2% of the assay value, respectively. The average precision for duplicate titrations was ±1.92%, as compared to ±2.83% for January. A summary of the results follows:

				Precision(±%)	
Assay Value	Group Ave.	% Diff.	No. Determinations	Single	Duplicate
10.76	10.85	+ 0.8	28	2.39	1.69
11.51	11.61	+ 0.9	26	3.53	2.49
14.84	14.79	- 0.3	26	2.63	1.86
10.18	10.20	+ 0.2	26	2.30	1.63

The synthetic 8-1-MR was analyzed 13 times in the B & T Plant Control Laboratory (222-B). The standard precipitation procedure was used, with the percent recovery based on 2.077×10^6 c/m/ml. The results are tabulated below:

Month	Group Ave.	% Recovery
January	1.977	95.3
February	1.956	94.2

The assay value of this solution was also checked on a standard containing no UNH. A direct evaporation procedure (CA-6a) was used. Results of this check verified the assay value. Work is being continued to seek the cause of the decreasing percent recovery on this standard.

300 Area and Essential Material Control

Routine analytical control of the Bldg. 314 melt plant was established on February 2 and has continued without incident.

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Technical Department

On three occasions the tin content of the slug canning bath in Building 313 exceeded the 0.20% limit. Wet chemical analyses of these samples as a check against the spectrochemical control analysis were in agreement with the original results.

Graphite Analyses

Forty samples submitted by the National Carbon Company for analysis of boron content were completed. Excellent precision was obtained on duplicate samples but, in general, the average results are not in agreement with those supplied by the National Carbon Company.

A specially prepared graphite sample was submitted for complete analysis by the Pile Physics Division, and it was found that only small amounts of contaminants were present. However, the increase in purity indicated by the analysis does not bear a direct relation with the gain in Δ K value obtained in pile tests. Since the improvement in reactivity was greater than that indicated by the analyzed purity, it was theorized that the purification process used may have removed hydrogen from the sample. An attempt was made to determine this element in graphite by a combustion method, but it was found that a temperature of 1350°C was required to oxidize the graphite. No furnace is currently available for use at this temperature, but one is being constructed in the experimental shops. This work will be continued when the furnace is available.

Redox Analytical Control

A fence has been placed around the T-plant Laboratory (Building 222-T) in 200-W Area, and a path laid to the outside of the exclusion area. The isolation of this building from the exclusion area will allow its use by "S" clearance personnel for limited Redox analytical work until such time as it is again required for control of T Plant production. The laboratory is in the process of being cleaned up preparatory to the installation of special equipment. Fifteen people have been assigned to the building, on a shift basis. It is estimated that Redox process control work can begin the first week in March.

At present a total of 121 persons have been trained for the Redox Analytical Program. Of this total, 60 are working in the 3706 Laboratory, 300 Area; 46 in the 185-F Laboratory, 100-F Area; and 15 in the 222-T Laboratory, 200-W Area. An additional 30 personnel are in the process of being trained for this program.

Analytical Development - Redox

Tests were run to determine the amount of interference caused by uranium when aluminum is determined colorimetrically with hematoxylin. From the results it was apparent that aluminum in the range of 10 gammas may be determined in the presence of 0.5 grams of UNH without difficulty.

The study of the micro-volumetric determination for UNH continued. A 2 ml. glass syringe was mounted on a micrometer feed screw, and it is hoped that this syringe, with its accurate control, may be used to replace the unwieldy Misco micro-burettes. Some difficulty in the calibration of this equipment was experienced but the calibration has been completed. Information is not yet available for a comparison of the operation of this equipment with the Misco micro-burette. Several of the modifications of the technique applied to this method have been

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worked out, and plans are being made to mount the apparatus on a panel board. A study of electrode poisoning was conducted and a method for the renewal of these electrodes was devised.

The present control method for the determination of hexone in the 1A column has been extended to cover the 1B column system. This is made possible by acidifying the sample before distillation to prevent the carryover of hydrazine.

The determination of hydrazine itself is under investigation. The colored azines formed by the reaction of hydrazine with salicyaldehyde or p-dimethyl amino benzaldehyde have not proven satisfactory, since under the conditions required to produce stable colors the solutions do not follow Beers law. Pure hydrazine and pure salicyaldehyde were reacted, and the resulting azine recrystallized from alcohol; this compound is being studied to determine the optimum analytical conditions. Average recoveries of only 94.3% are obtained using the gravimetric method based on the precipitation of salicyaldehyde azine in aqueous solution. Further work is being done to perfect this method.

Analyses for Pu (III) and Pu(IV) are being investigated. The regular spectrophotometer method has not proven sufficiently sensitive. A reducing chemical method utilizing the ability of zirconium phenyl-arsenic acid to carry Pu (IV) while not carrying Pu (III) is being tested. Results to date have not been promising. The cause of the poor recoveries is not known but is under investigation.

Work was started on a spectrographic method for the determination of trace amounts of UNH. It is expected that the routine method for determination of uranium can be applied to Redox solutions and, if this is true, the lower limit will be about 10 micrograms of UNH. The limiting sensitivity will probably depend on the ability to concentrate the sample or the feasibility of removing the interfering materials.

Routine Redox control analyses using the X-ray Photometer had to be discontinued, early in the month, pending investigation of the lack of reproducibility of results on the same sample at different dilutions. It is evident that the working curve is not a straight line. In an attempt to prepare new working curves for this instrument, which will take into account the corrections for displaced water, nitric acid and ammonium nitrate, a statistical approach is being investigated. This procedure will require the preparation of approximately one hundred synthetic solutions of known concentrations containing various amounts of the above reagents. When this work has been completed a calibration curve will be available which will include these corrections. It is expected at that time to return this instrument to routine analytical service.

Analytical Development - Counting Techniques

An experimental A.S.P. testing instrument employing a 1 mil electrode in the sample chamber was installed in the Testing Room of Bldg. 3706. Experiments are now in progress to determine the operational characteristics of this instrument, as compared to one fitted with the regulation 2 mil electrode. Automatic timing devices with two different ranges (i.e., 0-2 min. and 0-20 min) have been installed on the A.S.P. instruments. The use of these devices has demonstrated that:

(1) The accuracy of the counting interval can be increased by using automatic devices.

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(2) The operating man-hours can be decreased, since one technician can operate approximately eight machines simultaneously providing the counting interval is properly selected.

The voltage supply to the regulated voltage transformer for the testing instruments in Bldg. 3706 has been isolated from the general lighting system by the installation of a separate transformer from the 440 volt lines. This change has eliminated interference on the regulated voltage line.

Special Hazards Control

Prints of the preliminary production models for the Hanford stainless steel hood are complete. These prints will be released as soon as the air flow characteristics of the mock-up have been checked.

Design work has been started on the mock-up of a laboratory table to be used in "hot work". Construction of a model is underway.

The second portion of the rubber glove test in the Isolation Building Laboratory was completed, and the data are being compiled.

STATISTICAL STUDIES

Graphite Quality

Previous analyses of graphite data revealed differences in graphite quality due to position of the bars in the heat treatment furnace. As a result of this finding, the reactivity of every bar in one heat was determined in the Test Pile. This study provided data to determine in more detail the nature of the differences due to position. The average dih of graphite from each row in the furnace is given in the following table:

Row	Average dih of Each Row
1 (top)	+.227
2	+.210
3	+.195
4	+.197
5	+.163
6	+.146
7 (bottom)	-.099

The table reveals a difference in reactivity of 0.245 dih between rows 6 and 7. There is a significant correlation between dih and rows 1 to 6. The range of this trend is 0.081 dih. There were no significant differences between stacks. On the basis of these data, each heat will be divided into two batches, one comprising rows 1 to 6, and the other consisting of row 7. Details for testing these lots on a routine basis are being worked out jointly with the Pile Physics Division.

No correlation was found between reactivity and the weight of individual graphite bars, even within manufacturers lots within heats.

300 Area Quality Control

During the period between January 1 and February 20 there has been a gradual, but erratic, improvement in the yield of "Class III" four-inch slugs. Frost test

rejects have decreased from 4% to 1%, with the downward trend still evident. The not-canned rejects have decreased sharply, and are now in control at a low level. Al-Si rejects show a consistent downward trend during the period of February 10 to 20. The bad-welds rejects dropped to a lower level on January 29, and have remained consistently at that level with the exception of two days. Stuck-in-sleeve rejects have remained at a low level throughout the entire period. Marred-surfaces have stayed consistently at a lower level than previous rejects of 8" slugs for this cause. Non-seats have been extremely erratic, varying between 0.2% and 9% with no apparent trend.

The frost test, not-canned, Al-Si, and bad welds have been responsible for the gradual improvement in yield; and the non-seats have been responsible for the erratic nature of the yield. Wrinkled cans were consistently at a low level until February 13, when an increase in rejects for this cause occurred, and persisted through February 20 without indication of a return to the former level.

Can Wall Thickness

Previously it was reported that slug can walls were not uniform in circumferential thickness, and that along the wall the cans were thinnest at the closed end. In order to determine how thin the thinnest part of the can wall would be expected to measure, one reading from each can was taken for the position nearest the base and at the thinnest position around the can. At this point the average thickness of the 30 cans tested was 0.0332" (as compared to an average of 0.0356" for the entire can). The 99% confidence limits were 0.0315" and 0.0349". This means that 199 cans out of 200 can be expected to have a wall thickness greater than 0.0315" at the thinnest point.

On the basis of this information, a tentative inspection procedure for can wall thickness was recommended in which 10 cans in every case of 330 are to be measured for minimum thickness at the base. If the average of the ten cans is above 0.0326", then there is less than 1 chance in 40,000 that any single can in the case has a minimum wall thickness less than 0.0300" (the engineering tolerance limit). A limit on the range of thicknesses observed is being computed and will be included in the specification. As further inspection data are collected, the tentative specifications will be replaced by a permanent one, and may possibly involve a smaller sample.

Aluminum Can Bonding Strength

Data were submitted by the 300 Area Plant Assistance group giving the weight required to strip a one-half inch segment from rolled and extruded slugs canned by the lead-dip and triple-dip processes. Strips were taken from bottom, center, and top portions of the walls of each of eight canned slugs. An analysis of variance led to the following conclusions:

(1) With the triple-dip process, there was no difference in the bonding strength using rolled and extruded uranium.

(2) With the lead-dip process, the bonding strength using rolled uranium was significantly greater than with the triple-dip process.

(3) With the lead-dip process, the bonding strength using extruded uranium was significantly less than with the triple-dip process.

Technical Department

Stuck-in-Sleeve Rejects vs Density

A correlation between the number of 8" slug stuck-in-sleeve rejects and the average billet density of 130 lots failed to show any significant relationship.

Preparation of Alpha Extruded Uranium

In conjunction with the 300 Area Plant Assistance group, a statistical design was developed for P.T. 314-53-M, "Preparation of Alpha Extruded Uranium for Pile Testing". A pile loading chart for this material has been developed for use, subject to approval by the Pile Engineering Division.

Effect of Tube Position in Pile on Slug Blistering

No apparent relationship was found between tube position in the pile and the amount of slug blistering occurring in each tube. This study confirms an earlier correlation which showed no relationship between slug blistering and exposure rate.

Van Stone Flange Corrosion

Although a statistically significant correlation was found between rows in the pile and Van Stone flange corrosion for all four zones of the front face of the D pile, this fact is not of practical significance since it only accounts for about 5% of the variation in corrosion. On the rear face the correlations failed to follow a consistent pattern.

G. E. X-Ray Photometer

Difficulty has been encountered by the Laboratories Division in obtaining a UNH calibration curve for use with the X-ray Photometer in the analysis of Redox solutions containing NH_4NO_3 and $Na_2Cr_2O_7$. At their request, an experiment was designed to study the nature of the interference. An analysis of variance revealed interactions between the three constituents, indicating that the interferences from NH_4NO_3 and $Na_2Cr_2O_7$ are not independent of each other or of the amount of UNH present. A second experiment has been designed to establish a calibration curve which will take into account both the primary interferences and their interactions for contemplated ranges of UNH, NH_4NO_3, $Na_2Cr_2O_7$, and HNO_3 in Redox solutions.

Laboratory Precision

A review of laboratory precision data revealed that the final product analyses (AT) in the 200 Area Isolation Building are in an excellent state of statistical control. The canyon starting product analysis (8-1-MR), however, is not as effectively controlled.

An experiment was designed to determine the plant sampling [illegible], and within chemist errors in the analysis of Redox feed, product, and waste solutions.

A study has been made to determine the effect of concentration on both the absolute and percent precision of nitric acid, ammonium nitrate, and UNH analysis of Redox solutions. As was expected, the absolute error increases and the percentage error decreases with concentration. Accordingly, it will be necessary to treat the precision of each concentration separately. Precision control calculations are being made using absolute errors. For determining the precision of stage calculations (HETS) the percentage errors will be used.

Technical Department

Regression analyses have been made to determine the relationship between UNH concentration and specific gravity. High correlations (indicating reliable regressions) were obtained for (1) the 4-, 10-, and 13-foot aqueous side stream samples, (2) the 4-, 10-, and 13-foot hexone side stream samples, and (3) the 16- and 20-foot hexone side stream samples. Charts based upon these regression analyses, indicating the expected limits for UNH concentration for a given specific gravity, have been prepared for the Laboratories Division. Similar regressions are being attempted for other samples.

At the request of the Laboratories Division, correlations were run between the range of duplicate analyses of standard Redox solutions and the absolute deviation from the known value. In the 300 Area laboratory a significant correlation coefficient of +0.5351 was obtained for hexavalent chromium, indicating a high range was associated with a high absolute deviation. All other coefficients were not significant. Statistically, when an analysis is in a state of control a significant correlation would not be expected.

Hexone-Aqueous Vaporization

In conjunction with the Chemical Research Division, a table of kettle composition and vapor composition results for presentation at a meeting with the Kellex Corporation was compiled from data previously analyzed.

Blood Count Data

Further analysis of differences in blood analysis due to sex, age, and seasons of the year are being made, taking into account the varying number of observations in each category. This problem will require extensive computations involving large numbers of simultaneous equations preparatory to the analysis of variance.

A conference was held with Dr. P. A. Fuqua of the Medical Department, and Dr. S. T. Cantril, consultant, relative to the analysis of blood count data.

Conferences

Representatives from the S. F. Accountability Group of the Atomic Energy Commission visited the Statistics Division on February 11, to discuss the statistical techniques used at Hanford relative to material accounting. The delegation headed by W. C. Young included H. W. Norton, statistician, C. D. W. Thornton, chemist, and Douglas George, accountant. The group was accompanied by two representatives of the local A.E.C. office. As very little statistics are applied at Hanford to accountability problems, the discussion centered around the possible use of statistical methods in this direction.

A conference was held with Instrument Department personnel to discuss means of interpreting data on the study of fatigue of Geiger mica window tubes. Two conferences with Health Instrument Department personnel were devoted to discussion of the statistical control of low background alpha (LBA) counters.

Reports Issued

The following reports were issued during February:

Correlation of Chemical Analyses on Graphite Bars (HW-8767)

Comparison of Corrosion Weight Loss for Blistered and Non-Blistered Slugs (HW-8889)

Technical Department

Statistical Design of P.T. 314-53-M, "Preparation of Alpha Extruded Uranium for Pile Testing" (HW-8951)

Statistical Analysis - Van Stone Flange Corrosion (HW-8976)

Variation of Thickness of 4-inch Cans (HW-8888)

Diameter Measurements of Slugs Before and After Prolonged Heat Treatment (HW-8879)

Other Problems

The following problems, not reported on, are still in progress: essential materials, and control of radio assay counting instruments.

INFORMATION DIVISION

Plant Library

Library statistics were as follows:

	January	February
Number of books on order received	574	743
Number of books fully cataloged	361	410
Bound periodicals processed, but not fully cataloged	341	26
Pamphlets added to pamphlet file	183	515
Miscellaneous material received, processed, and routed (Includes maps, photostats, patents, etc.)	15	16
Books and periodicals circulated	455	563
Reference services rendered	220	221

Work on the acquisition, cataloging, and circulation of books, and the expansion of the pamphlets and specifications files proceeded on schedule. Returns from the bindery are steadily increasing the stock of bound periodicals. The importance of this phase of the Library expansion is emphasized by the delays which seem unavoidable in securing from off-site photostats of needed periodical materials. Arrangements were completed to take advantage of the coupon photocopying service of the American Chemical Society in Washington, D.C., but even with this simple routine a delay of three or four weeks is not unusual. Every opportunity to shorten this delay is being explored, but only by blocking-in large gaps in the present collection of basic periodicals can this problem really be solved.

Two handbooks, Perry's "Chemical Engineer's Handbook" and Lange's "Handbook of Chemistry", have been received in quantity and are now set up as Stores items. They will be available as desk copies to qualified plant personnel, and may be obtained on a Store Order bearing an Assistant Superintendent's signature. Hodgman's "Handbook of Chemistry and Physics" will be similarly handled when the shipment is received. The demand for these handbooks has always exceeded the copies available from the Library.

Technical Department

The "Manual of Procedure" was completed and is being used as a basis for personnel training.

Issuance of the "Information Bulletin" was delayed due to printing difficulties, and the inserts are being redone to bring the material up to date.

300 Area Classified Files

Work on the receipt, issuance, and routing of documents proceeded routinely. File document statistics were as follows:

	January	February
Documents routed	3,286	4,235
Documents issued	742	886
Reference services rendered	2,045	2,414

Completion of the plan for the division of function between the 700 Area Classified Files of the Service Department, and the 300 Area Classified File unit of the Information Division, is proceeding but was delayed pending completion of C. G. Stevenson's observation trip to Oak Ridge and Chicago.

Study is underway on the matter of eliminating entirely the major portion of the positive (unsolicited) routing of documents from the Files unit in favor of the circulation of abstracts covering the same material. It is felt that this routing involves a great deal of clerical routine for both File room and recipient, that many documents so routed are of doubtful value to the recipients, and that in any case the recipient does not have time for a careful scrutiny of any but a small percentage of them. An additional factor is the burdening of the recipient with the responsibility of properly caring for a large number of such classified items.

Along this line all Departments were circularized as to their probable needs for "Guide to Published Research on Atomic Energy" (covering the periodical literature), "Abstracts of Research and Development Reports" (covering reports issued by the various installations distributed according to the standard distribution list), and the "Abstracts of Declassified Documents" (covering MDDC reports). It is proposed to establish this procedure initially with the MDDC reports and from there, on the basis of experience with the method, to broaden the procedure to include the other categories of reports.

To set this up, arrangements have been completed to have the A.E.C. at Oak Ridge supply approximately 50 copies of their bi-monthly "Abstracts of Declassified Documents". On receipt of these, all positive routing of MDDC documents will be discontinued. Individuals formerly on such MDDC document route lists will receive desk copies of these "Abstracts", and from these can make a selection of documents to be requested from the Files.

PILE PHYSICS

Graphite Purification

Functional tests of the first four heats of purified graphite from Morganton indicated that only one, CSF-3, was of high purity. By activation experiments in a pile, it was demonstrated that the material of low quality contained enough residual chlorine to account for the functional test results. It was

also shown that the chlorine could be removed by heating the bars for two hours at 1400° C. in a propane atmosphere. Subsequently, it was found at Morganton that the high quality material came from the hottest part of the furnace; and a series of experimental runs was begun to investigate the effects of operating at higher temperatures and of cutting off the carbon tetrachloride feed early in the cooling cycle. By the end of the month, functional tests on the first two of the experimental heats had produced satisfactory results.

A small experimental heat of purified graphite from Bay City, made with ammonia instead of nitrogen, gave satisfactory functional test results. It is also planned to evaluate helium as a carrier gas.

Regular Production Graphite

Functional testing of a complete heat of CS graphite showed that the bottom layer is of much lower quality than the remainder. This result is confirmed by all other data on selected samples from each production heat. Accordingly, all future heats will be divided by assigning an "N" classification to the bottom layer only and an "O" classification to the remainder.

The density of the CS heats currently being received is 1.652 gm/cc. Although this represents a drop of 1.5% from the density which was observed in Heats 25 through 45, the functional test results have remained high.

Control System of Present Piles

A review of present information on rod strength has confirmed the fact that the present vertical rod system is adequate to compensate for loss of water and to shut the pile down quickly. It has also shown, however, that at present operating levels the vertical rods alone are probably insufficient to keep the pile subcritical after the xenon has decayed and the fission products have heated the pile. It is questionable whether the vertical and horizontal systems together would keep the pile subcritical under these conditions. It should be noted, however, that an interval of more than 24 hours would elapse between the time of emergency shutdown and the time when the pile would again become chain reacting; and during this time poison columns could be loaded or, if the rear face were inaccessible, cadmium splines could be inserted in selected process tubes. The providing of such splines is under consideration.

Control System for H Pile

Calculations have shown that a system of 41 vertical rods would keep the hot, dry, xenon-free H Pile subcritical after operation at 400 MW. A horizontal pattern of 24 rods would allow the pile to be shut down for an indefinite period after operation at 400 MW and then restarted without the use of temporary poison columns. Since this system introduces considerable mechanical complications, efforts are being made to develop a simpler system which will satisfy the requirements. Experiments are in progress to measure the gains in rod efficiency which may be obtained by placing hydrogenous material or resonance absorbers inside the vertical rods.

Irradiation Facilities for H Pile

Consideration is being given to the insertion of special holes for the irradiation of bismuth or other materials in the H Pile, to obtain increased irradiation

[redacted]

capacity at less cost in reactivity.

Xenon Generator

Samples of the various componenets of the generator for Xe^{135} have been made. Construction of the first complete generator containing natural uranium will begin as soon as materials arrive.

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

	D Pile	F Pile
In rods	59 inhours	28 inhours
In Special Requests		
within poison pattern	162	122
outside poison pattern	10	0
In Plant Assistance irradiations	20	3
In lead-cadmium columns	0	0
In bismuth columns	111	104
In dummy columns (including empty fringe tubes)	38	60
In xenon	512	527
In overall coefficient	- 110	- 118
Total cold, clean reactivity	802	726

The D Pile gained 14 inhours and the F Pile lost 6 inhours during the month.

Production Test 105-1-P, Graphite Monitoring

Electrical resistance measurements on unexposed CS graphite indicate that it is not as highly oriented as KC material. Therefore, endwise expansion of CS bars may occur in the piles. The neutron induced expansion rates will be determined for samples of CS material cut both parallel and transverse to the direction of extrusion.

A sample of purified CS graphite had an electrical resistance which was not significantly different from that of unpurified CS.

Samples of various experimental types of graphite were placed in the piles during the month.

Status of Special Irradiations

The status of the Special Request program on February 29 is given below. Those items which were active during the month are marked with an asterisk. Items listed as completed last month will receive no further mention. The number under P.T. indicates the Production Test, series 105-P. The letter suffix after a tube denotes the pile. Under "Quantity" the number of pieces, if given, will indicate that the material has been received. If the Hanford Request has been approved but no material has been received, the Request No. and material only will be listed. Under "Tube and Pile" the initials BTHD or BTHF mean the piece is charged into the "B" test hole at the D or F Pile. The abbreviations ORNL and ANL after the request number refer to Oak Ridge National Laboratories and Argonne National Laboratories respectively; KAPL refers to the Knolls Atomic Power Laboratory, UCRL refers to the Radiation Laboratories at the University of California.

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
3-3(ORNL)	Thorium	16 pcs.	120 da.	6/3/47	1579D	10/21/47	--	49-F	
		16 pcs.	120 da.	6/3/47	3274D	10/21/47	--	49-F	
		44 pcs.	120 da.	6/17/47	2374D	11/3/47	--	49-E	
		32 pcs.	120 da.	6/17/47	1569D	11/3/47	--	49-E	
		24 pcs.	120 da.	7/2/47	2082F	12/2/47	--	49-F	
		24 pcs.	120 da.	7/2/47	1579F	12/2/47	--	49-F	
		16 pcs.	120 da.	8/5/47	2066D	1/6/48	--	49-F	
		20 pcs.	120 da.	8/10/47	3274F	1/11/48	--	49-F	
		22 pcs.	120 da.	9/2/47	2666D	1/6/48	--	49-F	
		27 pcs.	120 da.	9/2/47	2682D	1/6/48	--	49-F	
*		32 pcs.	120 da.	9/16/47	3179D	2/16/48	--	49-F	
*		27 pcs.	120 da.	9/9/47	2082D	2/3/48	--	49-F	
		18 pcs.	120 da.	10/21/47	1579D	--	--	49-F	19
		16 pcs.	120 da.	10/21/47	3274D	11/18/47	--	49-F	
		20 pcs.	120 da.	12/2/47	2082F	--	--	49-F	18
		20 pcs.	120 da.	12/2/47	1579F	--	--	49-F	18
		18 pcs.	120 da.	12/8/47	3274D	--	--	49-F	19
		11 pcs.	120 da.	1/8/48	2066D	--	--	49-F	15
		11 pcs.	120 da.	1/8/48	2666D	--	--	49-F	15
		27 pcs.	120 da.	1/8/48	2682D	--	--	49-F	25
		16 pcs.	120 da.	1/8/48	3169D	--	--	49-F	17
12-B(ANL)	Pu^{239}	540 mg.							
		1 slug	14 mo.	7/18/46	3378F	7/16/47	--	59	
		This request will be recharged							
13-3(ORNL)	Be_3N_2	250-	6 mo.					70-B	
		2	6 mo.	2/4/47	1474D	8/5/47	--	38 pcs. shipped	
		40	6 mo.	2/4/47	2066D	8/5/47	--	1/19/48	
		40	6 mo.	2/4/47	2082D	8/5/47	--		
		40	6 mo.	2/4/47	3169D	8/5/47	--		
		44	6 mo.	2/12/47	3274F	8/10/47	--		
		45	6 mo.	2/12/47	2666F	8/10/47	--		
13-4(ORNL)	Be_3N_2	35	6 mo.	2/12/47	1474F	8/10/47	--	70-C	
13-5(ORNL)	Be_3N_2	26 pcs.	6 mo.	9/9/47	1474D	11/18/47	--		
		38 pcs.	6 mo.	9/9/47	3169D	11/18/47	--		
		30 pcs.	6 mo.	11/4/47	2374F	--	--		15
		30 pcs.	6 mo.	11/4/47	1569F	--	--		15
*		19 pcs.	6 mo.	2/2/48	1569D	--	--		12
14-3(ORNL)	Al-U alloy		12 mo.	1/22/47	2977F	1/27/48	--	84	
*15-15(ANL)	LiF	19		12/24/47	1569D	2/3/48	--		
		23		12/24/47	2374D	1/18/48	--		
		8		12/23/47	3179F	1/27/48	--		
		18		12/2/47	3169F	1/27/48	--		
		8		12/23/47	2682F	1/27/48	--		
*		11		1/27/48	3179F	2/24/48	--		
*		11		1/27/48	3169F	2/24/48	--		
*		11		1/27/48	2682F	2/24/48	--		

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
*15-15(ANL)	LiF	15		2/3/48	2082D	--	--		18
*		11		2/24/48	3179F	--	--		16
*		11		2/24/48	3169F	--	--		16
*		11		2/24/48	2682F	--	--		16
*27-3(ORNL)	CaO	1 slug	5-6 mo.	6/25/47	2066F	1/6/48	2/18/48	93	
*28-2(ORNL)	Iron	1 casing	2 mos.	2/16/48	BTHD	--	--	87	0
28-3(ORNL)	Iron	1 casing	2 mos.	--	--	--	--		
28-4(ORNL)	Iron	1 casing	2 mos.	--	--	--	--		
28-5(ORNL)	Iron(Enriched)	1 casing	Indefinite	--	--	--	--		
28-6(ORNL)	Iron(Enriched)	1 casing	6 mos.	--	--	--	--		
29-5-10(ORNL)	P_2O_5	6 casings	60 days	--	--	--	--		
*32A(ANL)	$Np^{237}Ox.$	50 mg.	6 mo.	7/29/47	BTHD	2/3/48	--	112	
B	Cb met.	2 g.							
C	$Pu^{238}Ox.$	2 µgm.							
40-Proliminary(KAPL)	Pu	2 slugs	1 wk.	--	--	--	--	148	
40-3(KAPL)	Pu	3 slugs	2 mos.	1/18/48	2881D	--	--	148	5
40-4(KAPL)	Pu	3 slugs	4 mos.	1/18/48	3177D	--	--	148	5
*43(ORNL)	Stainless Steel & Monel	1 papoose	5-6 mo.	7/29/47	2684D	1/6/48	2/18/48	111	
		1 papoose	3 mo.	12/23/47	2666F	--	--	111	10***
*44(ANL)	U^{238}	1 casing	1 da.	2/6/48	BTHF	2/8/48	Chem. Analysis done at L	169	
45(ORNL)	Gold	4 slugs	90 da.	12/23/47	2666F	--	--	131	
46(ANL)	Bi^{209}	1 papoose	4 mo.	12/23/47	2271F	--	--	126	
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 received					
			1-90 da.	12/23/47	2666F	--	--		
			1-180 da.	Has not been received					
48(ANL)	BeO	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	1/14/48	128	
			1-30 da.	Has not been received					
			1-90 da.	12/23/47	2666F	--	--		
			1-180 da.	Has not been received					

*** Tube 2666F also contains 4 SR-45, 1 SR-47, 1 SR-48, and 1 SR-49

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
49(ANL)	Graphite-U Oxide	4 slugs	1-15 da. 1-30 da. 1-90 da. 1-180 da.	12/21/47 Has not been received 12/23/47 Has not been received	3169D 2666F 	1/6/48 --	— —	129	
*50(UCRL)	Tissue Ash	24 casings	1 wk.	2/6/48	BTHF	2/17/48	2/20/48	132	
51(ANL)	Be	1 receptacle	2-3 mo.	1/6/48	1474D	--	--	133	5
52(ORNL)	Al-U Alloy	Details of shipping and exposure being worked out							
53(ANL)	Te	1 casing	4 mo.	1/27/48	BTHF	--	--	134	
54(ORNL)	Cu-Be Alloy	1 slug	2 mo.	1/6/48	1474D	--	--	135	
*55(ORNL)	Stainless Steel	4 slugs	6 mo.	2/16/48	--	--	--	130	0
56(ORNL)	Be-Cu Alloy	2 slugs	6 mo.	1/27/48	1368F	--	--	136	0
57(ORNL)	$CaCO_3$	3 casings	6 mo.	1/27/48	BTHF	--	--	137	0
58(ORNL)	Zinc	1 casing	6 mo.	1/27/48	BTHF	--	--	138	0
59(ORNL)	Antimony	1 casing	6 mo.	1/27/48	BTHF	--	--	139	0
*60(ORNL)	KCl	7 casings	1-2 wks. 1-1 mo. 1-3 mo. 1-6 mo. 3-1 yr.	2/16/48	BTHD	--	--	140	0
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. 5-5 mo.	7 slugs were charged in Tubes 3179D and 1774D on 2/16/48				145	0
*64(ORNL)	Cu-Au Alloy	5 slugs	1 slug each - 15, 30, 60, 150 and 300 days	30 day sample charged into Tube 3179D on 2/16/48 150 da. sample charged into Tube 1774D on 2/16/48					5
*65(ANL)	Li-Al Alloy	2 slugs	3-4 wks.	2/16/48	3179D	--	--	143	
66(ORNL)	U^{234}	2 casings	2 & 4 mo.	1 casing received 2/17/48					
67-76(ORNL)		Received 2 samples of 68 and one of each of the other requests on 2/17/48							

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
77-78(ANL)		Samples are being canned.							
79(KAPL)	U^{235}	Details being worked out.							

The following requests have been approved but the samples have not been received: 63, 80 - 89, ANL-100-101, ORNL-100.

PILE ENGINEERING

Corrosion and Blistering of Slugs

The first definite promise of solution to the blistering problem was obtained this month with the discharge of two tubes containing a total of 30 alpha-rolled, lead dipped slugs at an average exposure of only 83% of normal. Twenty-four of these slugs were free of blistering, five may have been slightly blistered, and one was not inspected. In contrast, all twenty four of the normal slugs at the ends of the column were slightly blistered and three of the ten gamma-extruded lead-dipped slugs were moderately blistered. No effect of outgassing of rolled lead-dipped slugs was detectable.

The irradiation of rolled, triple dipped slugs charged under Production Test 105-79-P was completed with the discharge of nine tubes at an average exposure of about twice normal. The rolled slugs (16% moderately blistered) appeared somewhat better than the extruded slugs (21% moderately blistered), but the slugs reclaimed from unbonded slugs believed to have been rolled were considerably worse (30% blistered).

The irradiation of slugs made from extruded reclaimed (TX) metal and charged under Production Test 105-90-P was substantially completed with the discharge of twenty-eight tubes at normal concentration. No significant difference in blistering tendency between TX metal and virgin metal was observed.

Additional inspections included two tubes containing capsule samples, one tube containing weighed corrosion pieces, one tube selected from normal discharge, all at normal exposure, and one tube containing four-inch slugs at an exposure 250% of normal.

Difficulty was encountered with the discharge of eight normal production tubes during the month. In one case the offending slug was warped but had only slight surface distortion; in the remaining cases the bad slugs contained large swollen knobs or bumps. A coincidence of end cap data among some of those slugs was noted.

A reasonably satisfactory full cylindrical replica of one badly blistered slug has been made and displayed.

Corrosion of Van Stone Flanges

The hot flow laboratory was operated during the month with no interruption for inspection.

Technical Department

Flow cup measurements show that the cathodic protection furnished aluminum by magnesium disappears after two months contact of the triple coil of aluminum, magnesium, and stainless steel with process water. Aluminum pitting characteristic of Van Stone flange corrosion was reproduced in these tests.

Prior to obtaining the above result from the laboratory, thirty one magnesium gaskets were installed on newly-formed Van Stone flanges at the outlet end of process tubes, in addition to the installation of five neoprene gaskets at the inner end of process tubes.

Five process tubes were found which inadvertently had not been equipped with gaskets on the outlet end. Only two of these flanges were badly corroded.

Three different types of asbestos-base "Granite" gaskets have been found in use on the piles. To date no conclusive correlation has been found between Van Stone flange corrosion and use of these different types of gaskets.

Graphite Expansion

Extensive data have been obtained on the vertical height between tube-bearing graphite layers adjacent to the A Test Hole of the D Pile. These data confirm the conclusion reported last month that the bulk of the pile expansion results from expansion of the tube-bearing blocks, and also demonstrate that KC graphite (located in the central Green zone) expands in a transverse direction considerably more than comparable blocks of CS graphite (located in the White zone).

A nominal concentration of 10% carbon dioxide (90% helium) was maintained in the D Pile atmosphere during the month. No significant changes in thermal stress in the biological shields at the front and rear faces were observed, nor was any definite effect on graphite expansion rate encountered.

An electrical-resistance heater for use in experimental study of annealing pile graphite is being fabricated in Schenectady.

Field releases for construction of a nine tube test unit have been issued on the basis of a work order provided by the Design Department. This test unit is similar to the sixteen tube mock-up used in the SMX study at Clinton Laboratory in 1943-44, and is intended primarily for use in verifying design changes planned for new piles. Provision is made for simulating vertical bowing of the full-length process tubes.

Measurement of Slug Axial Temperature (Production Test 105-80-P)

The temperature of the special slug in Tube 2679F was 146°C. on February 16.

Underwater Laboratory

Work on this laboratory has been given secondary priority to completion of work with the can opener facility.

Can Opener Facility

At month-end work on irradiated slugs was almost ready to start. Tests during the month demonstrated the need for a different type of cutting tool in order

to operate properly on beta-experiment slugs, and the advisability of using a vacuum line with the sample retriever for alpha-experiment slugs.

Beta Experiment

With the dissolution of the Hanford Branch of the Research Laboratory on February 1, responsibility for irradiation of slugs for the beta experiment passed to this group. Beta slugs contain enriched uranium in contact with sodium and are to be operated at elevated temperatures during irradiation by use of an electrical resistance heater. Temperature and control tests in a flow laboratory tube, charging and discharging tests at the B Pile, and tests with the can opener were conducted during the month.

Segmented Discharge

Tests with both the long-stroke hydraulic ram and with the short-stroke magazine type charging machine have been encouraging, and have shown no marked advantage for either machine.

Tubes containing a short aluminum rod anchored to the end cap in place of the standard upstream dummy slugs continue to show satisfactory shielding characteristics. Development of a satisfactory technique for routine loading of tubes which do not contain the standard upstream dummy slugs is still in progress.

200 AREA PLANT ASSISTANCE

Canyon Buildings

The study of factors governing the first cycle by-product waste loss level at B Plant was continued. It has previously been observed that removal of the cake from Centrifuge 13-2 by adding the acid direct from the gallery resulted in lower 13-4-BP losses than removal in the standard manner via 13-1 Tank. This trend persisted during February on the few runs on which the standard removal was attempted, despite the fact that the 13-1 to 13-2 jets were replaced. A program of flushing the 13-1 Tank with water before adding the acid for cake removal indicated that holdup of solids containing product, rather than heels of liquid, was responsible for the higher losses. The reason for this product level in the precipitate is not known.

An old batch of bismuth subnitrate solution containing 0.9 grams of zirconium impurity per liter was tested for use in all Canyon Building sections which use bismuth. A ten percent blend of this solution with normal bismuth salt solution was found to have no deleterious effect upon yield or decontamination. The remainder of the off-standard material is therefore being used in this fashion.

A second run was made without the use of cerium and zirconium scavengers in Section 13 at T Plant under Production Test 221-B-6. The decontamination factor through the Canyon Building was 4.78, significantly lower than the average of the previous ten runs (5.15), but this loss in decontamination efficiency was regained in the Concentration Building since the final PR can reading was 7 mr/hr. as compared with an average of 6 mr/hr. for the ten preceding runs. The 13-4-BP (first by-product) loss before reworking was 1.59% as compared with the 0.85% average for the previous ten runs; this was believed due to the reduced amount of sodium bismuthate used in the modified procedure. Further attempts to eliminate scavengers and reduce the 13-4-BP losses will be directed

toward substitution of the scavenger-free Section 16 by-product procedure for the existing Section 13 procedure.

Concentration Buildings

Examination of accumulated data for lanthanum fluoride product precipitations over the past year revealed a seasonal trend in E-3-WS losses. Since the temperature of the plant cooling water, and therefore the final temperature of the E-1 Tank slurry before centrifuging, was considerably lower in winter than in summer, it seemed possible that the temperature of centrifuging was influencing the loss level. Alternate groups of five runs (at both T and B Plants) were therefore centrifuged at final temperatures of 10 to 13°C and of 25 to 35°C. A significant improvement (amounting to about 0.05% of 8-1-MR) in E-3-WS losses resulted at the higher temperature level and the latter has been adopted as standard.

Isolation Building

A recalibration of the P-1 precipitators of Cells 3 and 4 revealed slight variations between the new and earlier calibrations. Use of the new values may remove recent discrepancies in material balance for B and T Plant runs (through the Canyon and Concentration Buildings and through the Isolation Building), but the 200 Areas material balance will not be affected.

REDOX DEVELOPMENT

Demonstration Apparatus

The Demonstration Apparatus columns were operated only during the first half of the month of February, with a shut-down occurring during the latter half of the month to permit the revisions previously described to be carried out. Five 32 to 64-hour uranium runs on the 2-inch IA Column and five recovery runs on the 3-inch IC Column were carried out. The IA Column runs were made to determine the uranium extraction section H.E.T.S. values at throughputs just below incipient flooding, with uranium feed solutions prepared from both dissolved uranium metal and UNH salt. The two types of metal feed solution were used to monitor the possibility of using the less costly UNH salt as a source of solution make-up for the forthcoming Scale-Up studies.

The two 2-inch IA Column runs carried out at ca. 55% of flow sheet throughput with 100% dissolved metal feed produced H.E.T.S. values of 1.0 ft., with IAW uranium losses of ca. 0.5% of the total IAF feed. The two runs carried out with 100% crystalline UNH salt as the source of IAF make-up, also at ca. 55% of flow sheet throughputs, produced H.E.T.S. values of 2.2 ft., with IAW uranium losses of 6 - 8%. The crystalline UNH runs were alternated with the dissolved metal solution runs and all operating variables were held constant throughout the mixed series. In addition, one run was carried out with a 50:50 mixture of dissolved metal-crystalline UNH IAF feed, at 60% of flow sheet throughput, and produced slightly subnormal IAW losses to give a calculated H.E.T.S. value of 0.8 ft.

In summary of the above anomalous behavior, it is believed that some impurity in one or the other of the two types of uranium solutions is affecting the diffusional or interfacial properties. These impurities are being explored and interfacial tension studies are being carried out in the laboratory. To date,

while no significant difference in distribution ratios has been found in laboratory batch tests, it is believed that the more expensive and more difficult to prepare dissolved metal feed solution will have to be used in the Scale-Up studies.

In recapitulation of scattered data previously reported, the best values for uranium H.E.T.S. measurements obtained from the most accurately monitored column runs are as follows:

IA Column Diam. (in.)	No. of Runs	Per Cent of Flow Sheet Thruput	Ave. U H.E.T.S. (extraction section) (ft.)
1/2	1	80	0.70 ± 0.05
1	4	53-100	0.69 ± 0.06
2	4	100	1.04 ± 0.10
2	2	55	1.00 ± 0.05
2	2*	58	2.2 ± 0.2
2	1**	61	0.8

* 100% Crystalline UNH runs
** 50:50 dissolver solution - crystalline UNH run

The H.E.T.S. values listed above indicate the following to be true:

(1) H.E.T.S. is unaffected by throughput rate in the 1 and 2-inch columns over a range of 55 to 100% of flow sheet throughput, and

(2) while no effect of diameter is noticeable in the range of 1/2 to 1 inch, a definite increase (ca. 40%) in H.E.T.S. is obtained with an increase in diameter of from 1 to 2 inches.

Revision of the Demonstration Apparatus as previously outlined in the January report has been approximately two-thirds completed. All columns were dismantled, and the Fenske packing inspected and degreased with trichlorethylene. Little or no evidence of "crud" deposits on the packing was found, with the exception of a pick-up by the glass Raschigs at the IAF feed mixing section. All tanks and lines have been flushed with water and tri-sodium phosphate. The new 5-inch stainless steel IC Column has been erected and packed with 1.5 cu. ft. of 1/4-inch stainless steel Raschigs. The new 3-inch glass IA Column has been erected and packed with 3/16-inch stainless steel Fenske helices. Glass pipe sections for the 1 and 2-inch IA Columns have been calibrated, and these latter two columns are being assembled and packed. New filters for all feed lines have been fabricated, all receiver head tank sight glasses are being lengthened, and repiping of the receiver system is in progress. Completion and start-up by March 7 is predicted.

Equipment Development

Equipment development activities connected with the Demonstration Apparatus during the month of February were primarily concerned with problems of flow control and solution clarification. A Hammel-Dahl orifice flow recorder was tested on the IAW effluent line of the 2-inch IA Column, in parallel with the pneumatic float flow controller, but produced erratic performance. A Fischer & Porter recording-controlling rotometer, coupled with a Hammel-Dahl control

valve, is being installed on the 2-inch IA Column IAX feed line. New Micro Metallic stainless steel filters for all feed lines have been designed and fabricated, and an experimental filtration test unit for studying various types of filters in clarifying dissolver metal solution is being constructed. A sampling device for obtaining IAF samples for clarity measurements has been designed.

Redesign of the test model of the Scale-Up mixer-settler decanter was carried out in a manner which raised the interface level during operation. A series of phase separation tests with a Column IC system produced highly satisfactory phase disengagement, correcting operating difficulties reported previously.

Uranium transfer studies with the 1-inch, 3-stage horizontal extractor, at total throughputs of 200 cc/min. and solvent/aqueous flow ratios of 1.5, have demonstrated the following: (1) ca. six column throughputs are necessary to re-establish equilibrium after sampling interstage flows at a rate not over 10% of a given phase flow; (2) equilibration of side-stream samples furnishes a rapid determination of the equilibrium line for any given set of operating conditions; (3) stage efficiences vary with interface position; and (4) reproducibility of stage efficiency measurements is within ± 1%. Stage efficiency studies with the 1-inch, 4-stage HNO_3 transfer model of the horizontal extractor have shown that (1) the efficiency varies between 31 and 95% with single agitator speed variation over a range of 700 to 1600 RPM, and (2) agitator spacing between 7 and 21 inches apart has no apparent effect on stage efficiency. Additional runs with the magnetically agitated model produced stage efficiencies of 75 to 85% but excessive pressure drop has caused the agitator to be submitted to redesign.

The General Engineering Laboratory "hot" service turbine pump was carefully dismantled, all parts weighed, dimensioned, and photographed, and reassembled. A test program has been agreed upon with the Kellex Corporation and the pump has been set up with a D.C. motor, variable-speed drive. Start-up tests have indicated shaft leakage to take place but it is believed that a simple design change can correct this. Additional models are being made up at Schenectady.

Solvent - HNO_3 resistance testing of synthetic coating materials has shown the following: (1) "Stalpic 98" is stable in IAX (solvent) solution; (2) "Phenoline" is stable in IAW, IAS, and IAX solutions but is definitely attacked by 60% HNO_3; and (3) "Amercoat 1364" is attacked by both IAX and 60% HNO_3 solution. Progress reports on welded stainless steels and special alloy corrosion testing have been issued by the Metallurgy Laboratory (HW-8731 and HW-8790).

Scale-Up Studies

A new process flow sheet for Scale-Up operations has been prepared and issued as Technical Data Letter No. SU-12 (HW-8853). A decrease in NH_4NO_3 consumption to ca. 5500 lbs. per week has been effected by this revision of earlier operating plans. Designs are being developed with the Design Engineering Department for the construction of a waste crib and water well ca. 5 miles north of the 300 Area for disposing of the uranium - NH_4NO_3 tail waters from Scale-Up operations. Arrangements are being made for bulk storage of NH_4NO_3 salt at the Umatilla Ordnance Depot.

Technical Department

All concrete work on the outdoor tank farm sump has been completed, except for the construction of a recently designed drain sump for handling the loading of disposal wastes into a tank trailer for removal to the crib described above. Fence revisions have been made to permit outside tank and piping installation by uncleared personnel of the Morrison-Knudsen Company. Construction within the Semi-Works Building is well underway. Concrete removal and excavation for sumps, curbs, and column supports is nearly completed. Concrete pouring for sumps, footings, and pump bases is ready to be started. Alterations to contaminated process piping is 95% completed. Construction personnel are now working a 6-day week.

All layout prints have now been approved and only detail prints are left for completion of the back-log. Preparation of the Scale-Up Operating Manual is being continued simultaneously with the checking of Design Engineering Department construction prints.

Process Design

Revisions of all process flow sheets attached to Redox Specifications Letter No. 15 for the Test Plant were issued on Feb. 3. A Revision and Errata Supplement to Letter No. 16 (HW-8833) was also issued on February 11. Both of these revisions were based on the results of previous discussions with the Kellex Corporation at New York City on January 15 - 16. During the period February 16 - 18, discussions were held at the Hanford Works with representatives of the Kellex Process Design staff and additional revisions were suggested by Kellex in "A Critical Review of G. E. Specifications Letters No. 15 & 16" (INDC-429). Agreement was reached on all points accepted or rejected and a summary of the discussions was presented for written confirmation (HW-8960).

A critical study of all possible rework methods has been made ready for review. A complete material flow diagram for the Test Plant ammonium nitrate flow sheet has been prepared and a similar diagram for the aluminum nitrate flow sheet is being drawn up.

During the Hanford Works meetings with Kellex on February 16 - 18, a plan for Production Plant process design break-down and scheduling was agreed upon. As summarized in a memorandum outlining these schedules (HW-8966), the frequent release of unit blocks of "process study" information to Kellex has been set up to obtain joint completion of a process flow sheet by August 1, 1948. The first unit block of such process design information was released on February 26 as "Redox Process Study No. PP-1" (HW-9001) and contained design proposals and projected operating procedures for metal solution preparation, clarification, and oxidation. This information is being transmitted to Kellex during meetings scheduled to be held at New York City on March 1 - 2. The Technical Department liaison representative, J. O. Ludlow, is also reporting at New York at that time.

Process Chemistry

Laboratory studies of the dissolution of UO_3 for possible use in preparing Scale-Up metal solution feeds have demonstrated that rapid dissolution in dilute HNO_3 can be obtained with no evolution of NO_x. Batch equilibrium studies with dissolved metal and crystalline UNH solutions have not evidenced any difference in uranium distribution ratios. A quantity of ketazine has been prepared and purified for future IBS solution make-up studies.

Technical Department

Centrifugation tests with semi-works dissolver metal solution have produced the following results: (1) At 1100 or 1600 G's, a hold-up time of 20 minutes increases solution clarities from 75 to 94% light transmission at 547 mμ wave length, and (2) at 1100 or 1600 G's a hold-up time of 20 minutes with 0.7% Fuller's Earth increases the clarity to 100%.

Laboratory filtration studies with sintered stainless steel filters (ca. 0.5 sq. in.) and metal feed solution indicate that the finest filter (0.0002 in. pore size) will clarify uncentrifuged dissolver solution from 73 to 87% but filter blinding occurs after passage of only 50 cc. Centrifuged dissolver solution can be clarified from 85 to 92% by the same filters, with plugging not occurring until after 300 cc. throughput.

REDOX RESEARCH

Mutual Solubilities of Hexone and Water

Using a cloud point method the solubility of hexone in water was found to range from 2.98 wt. % at 0°C to 1.35% at 87.9°C and that of water in hexone from 1.45% at 0°C to 4.80% at 87.9°. It will be noted that the solubility of hexone in water is retrograde whereas that of water in hexone is regular. At room temperatures or above the rate of solution of hexone in water or water in hexone is considerably slower than at temperatures near 0°C.

Reaction of Hexone and HNO_3 at High Temperatures

An autocatalytic reaction between hexone and nitric acid solutions to produce yellow reaction products, oxides of nitrogen and an odor of organic acids is frequently mentioned in the project literature. Refluxing experiments with 1M HNO_3 - 8M NH_4NO_3 solution and hexone indicate that the reaction actually occurs between hexone and nitrous acid. Whereas using pre-treated hexone and refluxing at ca. 104°C reaction was found to occur in somewhat less than two hours, addition of a trace of nitrite salt resulted in instantaneous reaction. Addition of nitrite at 75°C gave the same result but did not do so at 55°C. Instantaneous reaction was also induced by addition of a piece of ordinary steel but not by stainless steel. The induction period appears to be lengthened by rectification of pre-treated hexone, no reaction occurring after six hours at ca. 104°C whereas regular pre-treated material reacted in less than two hours, as previously mentioned. Isolation and identification of decomposition products is in progress.

Zirconium Investigations

Zirconium tracer has been prepared from 8-1-MR metal solution by three methods: (1) $BaZrF_6$ precipitation and dissolution in H_3BO_3, (2) the Th $(103)_4$ method for preparation of carrier-free Zr in oxalate solution followed by HNO_3 destruction of the oxalate, and (3) extraction of the carrier-free, oxalate-free tracer into TTA followed by re-extraction into 8M HNO_3. Distribution ratios (hex./aq.) obtained with the different tracers increased in the order given above.

[redacted]

Technical Department

Using straight 8-1-MR solution or tracer prepared by the $BaZrF_6$ method no extraction into TTA was possible and extraction of carrier-free tracer into TTA was accomplished only by use of more stringent conditions than indicated as necessary by the project literature.

Exchange in 10N HNO_3 solution of inactive $ZrO(NO_3)_2$ and carrier-free Zr tracer previously taken through a TTA cycle was studied by equilibration of aliquots with hexone and 5N HNO_3 solution and analysis for Zr by both radio assay and colorimetric determination. About 90% exchange was indicated but experimental error was possible and the work will be checked.

Equilibrium Data Using Aluminum Nitrate Salting Agent

Distribution ratios of uranium and other auxiliary data have been obtained for about 30 pretreated hexone - UNH, HNO_3, $Al(NO_3)_3$ systems. Distribution ratios vary with HNO_3 and Al concentrations as expected, however the relationship of the phase disengagement times is not yet fully understood. There is evidence that in addition to pH and viscosity dependance, disengagement times are related to a scrubbing action of UNH and $Al(NO_3)_3$ in the 5 to 8 volumes of aqueous phase successively contacting the hexone prior to attainment of equilibrium. This possibility will be investigated further.

Using a drop-on-plate method, interfacial contact angles have been measured for a number of the equilibrated systems against a polished stainless steel plate. In all cases finite angles were observed and in some systems were greater than 90° (measured through the aqueous phase), indicating actual preferential wetting of the solid by the organic phase. These preliminary results indicate that considerable adhesion of hexone droplets to packing surfaces may occur.

Freezing Points of the System UNH - $Al(NO_3)_3$ - HNO_3 - H_2O

Determination of freezing points for this system over the range 0 to 2M UNH, 0 to 2M $Al(NO_3)_3$, 0 to 1.0M HNO_3 is nearing completion.

Column IB Chemistry

Preliminary work leading to an investigation of Column IB chemistry has been completed. This has consisted mainly of a survey and laboratory checks of the available methods of analysis for Fe^{+2}, Fe^{+3}, N_2H_4 and UNH in IB systems.

Metal Waste Recovery

The available information on metal waste recovery has been surveyed and discussions have been held with representatives of the Kellex and U.C.C. Corporations on the problem. Laboratory work on metal waste recovery is about to be started on a limited scale.

STACK GAS DISPOSAL

Additional experiments have been made to study the adsorption of radioactive iodine by hot silver. The first silver reactor, which was set aside several weeks ago for the collected iodine to decay, has been opened for examination. The silver pellets had fused together slightly, presumably at the elevated temperature which was used for the attempted decontamination. A white crystalline coating on the pellets was identified as elemental silver; the

decontamination heating had apparently decomposed all silver salts formed during the adsorption runs. The second silver reactor, in which the silver catalyst supplied by the Air Reduction Company was used, was removed to decay after the very efficient adsorption run (over 99% of all radio-iodine in 7% of one dissolver cut) reported last month. A third reactor has been run at two different temperatures in an attempt to select the best one; these runs are not yet complete. Initial discussion and planning for larger scale unit, possibly for use in a dissolver cell, has been started.

It was reported last month that filter paper cartridges used to filter a portion of the dissolver off-gas became very radioactive due to mixed fission products entrained in the dissolver off-gases. This has been verified by observation of the decay rate of the filters which have shown half-lives much longer than the 8-day value of I^{131}. These results indicate that the dissolver off-gases must be treated to remove dust and mist in addition to gaseous iodine. It is planned to determine if hot silver or solvent scrubbing remove this dust and mist.

Particle collection runs at B Plant with samples of air drawn from the Canyon ventilation air prior to the fans have shown the presence of active particles at this point. The majority of the particles collected were small although a few were readily visible. Improved radio-autographic techniques in laboratories of the Health Instrument Department have been mainly responsible for these findings. Spectroscopic analyses of segregated particles indicated a high lead content suggesting the paint of the ventilation air tunnel as a possible source.

C. S. Wynn and H. B. Smith of the Air Reduction Company spent 3 days at the Hanford Works in consultations on the radio-iodine and active particle problems. In regard to the former it was agreed that studies on silver catalysts and other solids for iodine removal should be proposed to L. I. Gilbertson of Air Reduction. On the latter problem, designs of a test electrostatic precipitator unit (obtained from Western Precipitation Company by Air Reduction) were examined. It was decided to obtain, install, and test this unit on ventilation air. A comparison will be made with the Chemical Warfare Service type 6 filter paper in this service.

[redacted]

POWER DEPARTMENT
FEBRUARY 1948

GENERAL

Construction of concrete culverts over the export water line for a railroad crossing between White Bluffs and gravel plant and for a highway between Dr and gravel plant has been completed.

PERSONNEL AND ORGANIZATION

No. of Employees on Payroll	February
Beginning of month	496
End of month	495
Net decrease	1

On February 9 the assistant department superintendent was made superintendent. Coincidental with this change, the 100 Areas chief supervisor was promoted to assistant superintendent, the 100-F Area assistant chief supervisor to chief supervisor of the 100 Areas, the 200 Areas area supervisor to 100-F assistant chief supervisor, and a supervisor in training to 200 Areas area supervisor.

One supervisor was hired and one transferred to Design Engineering Department. One operator was hired, two were terminated and one transferred to Maintenance Department.

100 AREAS

The north clearwell in the B Area was drained and inspected for leakage. Test holes through the floor indicated voids which are being filled with mud grout. A section of gunite slope was found in bad condition.

The west clearwell in the F Area was out of service from February 4 to February 7 and repairs made to construction joint in bottom of overflow weir to stop leakage.

In collaboration with the Process and Technical Departments, tests were started on February 9 in F Area, and February 21 in D Area filtration plants to determine effects of increased flow rates. In stepwise manner, two filters were removed from service in F Area and three in D Area, with ten filters remaining in service at each plant. Results of tests to date indicate that although water quality is not as good in terms of iron content, it has not exceeded allowable tolerances and pressure drop has increased considerably.

Lay-up of refrigeration equipment in the D Area was started February 16. A representative of the York Company inspected the No. 1 unit internally on February 25 and concurred with procedure being followed.

Power Department

200 AREAS

On February 13 the suspension of sections of the 6-inch and 8-inch water lines, supplying the "T" plant, was completed. This was necessary on Third Street where excavation for process lines is in progress.

On February 12, in the East Area, a new 4-inch steam line serving the new tank farm areas was put into service.

300 AREA

As a result of increasing demand for steam and water overloading present facilities, all departments have been requested to conserve water and steam wherever possible until completion of additional steam generating and water supply equipment.

700 AREA

Peak steam demands of 75,000 lb./hr. were reached for short periods on several days during the month.

1100 AREA

The wood roof, including supporting members, on the North water storage reservoir has rotted to the point that replacement will be necessary. Plans for repairs to the structure have already been activated.

New water lines, serving the new "B" housing area, were connected to mains on Van Giesen Street and Wilson Avenue.

MISCELLANEOUS POWER OPERATION

The Power Department assumed the responsibility of the operation of the oil heating furnaces in the No. 4 warehouse at the Pasco Storage Depot on February 17.

POWER DEPARTMENT STATISTICS

From February 1, 1948

Thru February 29, 1948

			AREAS		
			100-B	100-D	100-F
RIVER PUMP HOUSE (Building 181)					
River Stage	Feet above sea level	(max)	388.3	380.3	366.7
		(min)	385.0	377.8	364.1
		(avg)	386.9	379.2	365.4
River temperature	avg. °F.		38.1	37.8	37.8
Water pumped to Reservoir	gpm avg. rate		12896	37250	35353
Water pumped to Refg. Condensers	gpm avg. rate			0	0
RESERVOIR (Building 182)					
Water pumped to Filter Plant	gpm avg. rate		12229	32008	29103
Water pumped to Condenser System	gpm avg. rate		640	3761	3849
Water pumped to Export System	gpm avg. rate		27	1481	2401
	gpm normal rate		3909	3909	3909
Chlorine added at #1 inlet	pounds		5338	7694	5000
FILTER PLANT (Building 183)					
Filtered water to Power House	gpm avg. rate		116	321	268
Filtered water to Process	gpm avg. rate		10634	26913	26314
Filteredwater to Fire & Sanitary	gpm avg. rate		59	88	131
Chlorine used in Water Treatment	pounds		747	1906	4000
	ppm avg.		1.3	.76	.81
Lime used in Water Treatment	pounds		15433	50550	39000
	ppm avg.		3.6	4.5	3.9
Coagulant used in Water Treatment	pounds		55959	184440	170000
	ppm avg.		13.1	16.5	15.8
Raw Water pH	pH avg.		7.73	7.99	8.0
Finished Water pH	pH avg.		No analysis	7.43	7.45
Alkalinity, M. O. - Raw	ppm avg.		57	56.9	60
Finished	ppm avg.		53	53.1	54
Residual Chlorine - Settled	ppm avg.		.23	.15	.24
Finished	ppm avg.		.11	.12	.17
Iron - Raw	ppm avg.		.22	.21	.28
North Clearwell	ppm avg.		No analysis	.02	.02
South Clearwell	ppm avg.		No analysis	.02	.02
Hardness - Finished	ppm avg.		70	72.3	72
Turbidity - Raw	ppm avg.		11.0	10.1	16.0
Filtered	ppm avg.		No analysis	0	0
REFRIGERATION (Building 189)					
Refrigeration produced	Tons per day			0	0
Temperature, Process Water In	avg. °F.			-	-
Temperature, Process Water Out	avg. °F.			-	-

[redacted]

Power Department

				100-B	100-D	100-F
POWER HOUSE (Building 184)						
Steam generated - Total		M pounds		38048	106625	94607
Average rate		lbs./hr.		54666	153197	135929
225 psi Steam to plant (est.)		M pounds		33332	92653	82489
15 psi Steam to plant (est.)		M pounds		150	1176	765
Coal consumed		Tons		2393	8041	6758
Coal in storage (est.)		Tons		20434	45787	44675
DEAERATOR PLANT (Building 185)						
Water flow		gpm avg. rate		10384	26623	26064
Chemicals consumed:						
Dichromate		pounds		7719	19900	19800
Sodium Silicate		pounds		81062	223696	192560
Chemical Analysis:						
pH		pH avg.		7.60	7.66	7.65
Dichromate		ppm avg.		No analysis	1.93	2.0
Silica		ppm avg.		No analysis	5.61	5.8
Dissolved Iron		ppm avg.		.02	.017	.02
Free Chlorine		ppm avg.		.05	.13	.16
PROCESS PUMP ROOM (Building 190)						
Total water pumped		gpm avg. rate		10349	26448	25889
		gpm normal rate		10349	31432	30082
Water temperature		avg. °F.		41.1	40.1	40.1
[redacted] PIT (Building 105)						
Chemicals consumed:						
Solids		pounds		0	1500	3800
Chemical analysis:						
A, B, C, & D Headers						
	Standard limits					
pH	7.5-7.8	pH	(max)	7.70	7.80	7.70
			(min)	7.60	7.55	7.60
			(avg)	7.62	7.67	7.65
SiO_2		ppm	(max)	6.0	6.0	6.5
			(min)	5.0	5.0	5.0
			(avg)	5.6	5.7	5.8
$Na_2Cr_2O_7$	1.8-2.2	ppm	(max)	2.1	2.0	2.1
			(min)	1.8	1.7	1.8
			(avg)	2.0	1.91	2.0
Iron		ppm	(max)	.04	.03	.03
			(min)	.01	.01	.005
			(avg)	.02	.016	.02
Chlorides		ppm avg.		1.9	1.43	1.2

[redacted]

Power Department

	Unit	200 AREAS	
		200-E	200-W
Reservoir (Building 282)			
Raw Water Pumped	gpm avg. rate	2085	1824
Filter Plant (Building 283)			
Filtered Water Pumped	gpm avg. rate	409	423
Chlorine Consumed	lb.	182	186
Alum Consumed	lb.	1600	2000
Chlorine Residual - Sanitary Water	ppm	.70	.70
Power House (Building 284)			
Steam Generated - Total	M lb.	23493	33493
Steam Generated - Ave. Rate	lb./hr.	33754	48122
Coal Consumed (Est.)	tons	1406.5	2009.
Coal in Storage (Est.)	tons	12871	17192

		300, 700, 1100 Areas		
		300	700	1100
Power House (Buildings 384 and 784)				
Steam generated - Total	M lb.	13424	28441	
Steam Generated - Avg. Rate	lb./hr.	19287	40864	
Coal Consumed - Total (Est.)	tons	780	2164.5	
Coal in Storage (Est.)	tons	1826.35	5460.45	
Sanitary and Fire System (1100)				
Well Water Pumped - Total	gal.			64,975,000
Well Water Per Day	gal/day			2,241,000
Well Water	gpm avg. rate			1556
Chlorine Residual	ppm			0.2
Sewage Treatment Plant (1100 Area)				
Total Sewage Treated	gal.			58,200,000
Sewage Treated Per Day	gal/day			2,007,000
Sewage Flow	gpm avg. rate			1394

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MAINTENANCE DEPARTMENT

February, 1948

GENERAL:

There was one sub-major injury in the Maintenance Department during February when a mechanic in the Village crushed his finger while replacing a manhole cover.

A serious problem has arisen in the 100 F Area in connection with the 42-inch reinforced concrete sewer between Buildings 105-F and 107-F. A large number of cracks have developed, causing heavy leakage at several points. The Project Engineering and "P" Departments are investigating the desirability and necess ity of installing a new line.

The underground waste disposal cribs in both 200-E and 200 W Areas and the H.T. shaft adjacent to the crib in 200-E Area were completed by the end of the month so that second cycle supernates can be diverted to the ground.

Billet casting facilities in the new addition of 314 Building were placed in operation early in the month and production was satisfactory by the end of the month, thus marking successful completion of this project. Work started on relocation of the propane storage tank to make room for area expansion and reduce fire hazard.

Work on the installation of a freight elevator in the 703 Administration Building progressed to the point where the machinery is now being installed by the sub-contractor. The revisions to Building 717 were completed and it is now in operation as a printing shop. The 722 Maintenance Hangar Shop Building was about 95 percent complete at the month end and has been occupied by the 700 Area group of the Maintenance Department.

ORGANIZATION AND PERSONNEL:

Two major organization changes, as described in HW Organization Announcements Nos. 71 and 72, were completed during the month 162 employees were transferred to the newly formed Project Engineering Department, and 186 transferred to the Village Public Works section of the Service Department. (Actual effective date of transfer of employees to Service Department was March 1.)

In connection with the above reorganization, the following promotions were made: one man to Area Engineer, one to Assistant Area Engineer, two to General Foreman and two to foreman.

Number of employees on payroll	February
Beginning of month	1074
End of month	712
Net decrease	362

162 — to P.F
186 — to Vill. pub. wks
348

Decrease in personnel due to reorganization as described above, plus normal turnover.

HW-9191-DEL

WORK ORDER SUMMARY:

FIELD FORCES

Area	Work on Hand 1/25 No. of Orders	Work on Hand 1/25 Estimated Man Days	Work Completed in Feb. No. of Orders	Work Completed in Feb. Estimated Man Days	Work on Hand 2/22 No. of Orders	Work on Hand 2/22 Estimated Man Days
100-B	78	239	156	226	67	213
100-D	59	484	227	583	78	416
100-F	118	268	236	608	116	220
Central Shops	231	3365	275	1829	242	2652
200-E	335	2368	341	991	326	2367
200-W	1033	3185	512	2677	1050	2968
300	375	2093	372	1941	318	1594
700/1100	1641	14449	1396	8051	1342	12372
Minor Const	190	7792	25	2393	214	7885
Total	4060	34245	3540	19301	3753	30690

An overall reduction in backlog of work was made during the month with no individual area group deviating from this trend. The backlog now amounts to about 48 days.

100 AREAS:

Steel plate gates have been installed in the A, B, and C chute openings of the 105-B unit to catch material that requires special handling. This simplified steel plate gate replaces the original catch boxes. Process tube #3183 was removed and replaced with a 2-S aluminum tube.

New bumper type railroad car stops were installed in the transfer area of all three of the 105 Buildings.

Four steam jets were installed on #1 boiler and eight on #2 boiler in Building 184-D to provide forced draft air over the fire in order to reduce stratification of gases and to prevent smoke when firing fresh coal. Five pounds of steam pressure are supplied to the jets.

Five sets of micrometer brackets were installed in the front face and four on the rear face of the 105-D unit to provide a method of accurately measuring movement of the unit.

The ven stone flange repair work is still in progress on both "D" and "F" units. On the "D" unit 1737 tubes have been inspected and 479 have been repaired. On the "F" unit 1781 have been inspected and 1207 repaired.

The step plug and thimble were removed from the "A" test hole location of 105-B unit to permit the Technical Department to make graphite expansion studies. A new one-piece shield plug was installed in the opening.

The #1 York refrigeration machine in Building 189-D was cleaned thoroughly

and placed in standby condition.

A new tile field was installed adjacent to the original tile field in the 115-F septic tank. The old tile field had become clogged from use.

Repairs were completed in the west clearwell of Building 183-F. The faulty expansion joint in the northwest corner of the clearwell was repaired by installing a new rubber seal strip. Also, a leak in the northeast corner was repaired in the same manner.

200 AREAS:

As a result of deterioration due to continual exposure to HF acid it was necessary to replace the french drain at the HF transfer pump site in the canyon tank farm of "B" plant.

The installation of exhaust manifolds on the gang valves of the canyon building control panels has been completed in both B and T plants. These manifolds permit the direction of vapors and condensate to the cells eliminating a special hazard and high humidity in the vicinity of the control instruments

The dip tube and sample arrangement for "E" cell was installed in E-4 tank of "E" cell of the "B" plant concentration building. The "E" cell equipment will be replaced when completed in the shop. As a result of a recent failure in F-22 centrifuge in West Area, the skimmer on both F-2 and F-22 centrifuges in the concentration building were doweled to the drive gear. This prevents the skimmer from falling into the centrifuge bowl when the locking set screw becomes loose.

In order to facilitate filter changing and to improve conditions in the cab of the 75 ton crane in the "T" canyon, an improved design filter was installed. A similar change was made in the "B" plant as previously reported.

A damaged skimmer in F-22 centrifuge in the "T" concentration building was replaced. Damage was caused by skimmer falling into the bowl. At this time the skimmer and plow controls were relocated to a more accessible location.

The pipe assembly in cell No. 1 of the isolation building was revised to make it similar to the other cells. This standardization will be valuable for both operation and maintenance

The "T" area control laboratory was reactivated for the Technical Department. It was necessary to isolate this building from the remainder of the area by fence and install a separate entrance. All the service equipment was reactivated including air conditioning, fresh air supply, hot water, heating, distilled water, and compressed air.

The equipment in the area laundry was rearranged to permit the installation of a three-compartment dryer This involved moving three small dryers, two extractors and a sink.. An additional wash machine will be installed in the near future. The lint catcher installed on Project C-126 will be connected to the new three-compartment dryer

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4 Maintenance partment

300 AREA:

The plannod shop changes in the 3713 Building are completed. The paint shop was moved into this building from the 301-A Building, and the sheet metal shop was moved from the 3722 Shop. Additional lighting will be necessary.

A special platform was constructed in the 305 Building for use by the Technical Department.

Since the furnaces in the melt plant in the 314 Building were placed in operation, several changes in design have been necessary. The crucible molds and baskets supports have been enlarged in order to make larger billets. A new stack was installed on the oxide-burning furnace exhaust.

A new track for the frost-test machine and new stainless steel coils for two pickle tanks were installed in the 313 Building.

The Maintenance shop previously located in the 321 basement was moved to the pipe gallery to permit construction of four offices in the basement. Work on the new five-inch column, and the revisions to the existing one, two, and three - inch columns on the demonstration unit, is being pushed to meet the completion date of March 8.

The installation of laboratory equipment in rooms 97 and 99, in the 3706 Building, will be completed during the week of March 8.

Construction work on the inside portion of the Redox Scale-Up unit has progressed to the point where all of the concrete will have been poured by March 4. Revisions to the existing piping have been made where necessary, and erection of a portion of the structural steel will be started during the first week of March. Negotiations have been made with Morrison - Knudsen supervision relative to the work in the tank farm portion of this job. Area fencing has been rearranged so that the tank farm is now a portion of the subcontractor's area. Morrison - Knudsen has begun to erect their shop facilities, and Electrical Distribution is currently installing a temporary substation for Morrison - Knudsen use. Although procurement of material for this job has been expedited in many instances, promised delivery dates on many of the items have not been improved sufficiently to meet the construction completion date of April 15.

700 AREA:

The irrigation pumps are being overhauled, the bronze sleeves of the pump shaft with stainless steel. At least one pump in each pump house is ready for operation.

1100 AREA:

A total of fourteen "E" type kitchens were remodeled during the month of February. There are twenty yet to be altered.

The interior painting program is considerably ahead of schedule with 142 per-

manent house units completed this month. In addition, fifteen prefabs, Sox tract house, sixteen kitchens, and twenty-two bathrooms were completed on regular renovation orders.

The installation of an additional hot water tank at the cafeteria to provide 130° water for the glass washers is complete. These glass washers now meet the Public Health requirements.

The hot water tank at the Commercial Laundry was relocated and is now in operation.

The miscellaneous repairs to the exterior of permanent house units in Division VII, preparatory to spring painting, is eighty-five percent complete. Repairs to Division IV are fifteen percent complete and one crew is starting repairs in Division V.

Thirty-five renovations were completed during the month and eight orders are now on hand. Orders have slightly increased over last month, but have not reached the anticipated number as yet.

Three hundred and eleven kitchen sink linoleum tops were replaced this month with 270 linoleum orders on hand now.

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PROJECT ENGINEERING DEPARTMENT

February 1948

GENERAL

As of February 1, 1948, the Project Engineering Department was formed as an independent department, having as its responsibility design and related engineering duties connected with authorized requests for work eminating from the Hanford Works Plant. The requests for engineering studies and project proposals in general will come from Works Engineering and Operating Departments.

As per Engineering Request Procedures of February 18, 1948, requests as mentioned above will be initiated on a Work Order accompanied by a reason wheet and shall be directed to the office of the Works Manager pending procedures forthcoming from the Project Engineering Department.

ORGANIZATION & PERSONNEL

	February
Number of employees on payroll	
Beginning of Month	167
End of Month	164
Net Decrease	3

As a result of Organization Announcement No. 71 the following personnel changes were made:

Removed from roll:

W. L. Brown W. D. Byrd P. M. Delph R. S. Flanders K. R. Flaten D. B. Halteman W. L. Harris G. Q. Mathews J. J. McNamara H. F. Robinson	Personnel of the Material Control Group remaining with the Maintenance Department
A. Lipke	Retained by Maintenance Department

1.

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Project Engineering Dept.

Added to roll:

J. S. McMahon N. F. Mosher	Transferred from the Service Department in connection with the formation of the Project Engineering Department.
H. R. Hughes O. B. Monteith E. J. Barrett	Transferred from the Electrical Department to the Project Engineering Department.

New employees:

P. H. Sawyer	Replacement for Jr. Draftsman with "Q" clearance who has transferred to the Technical Department.
P. Pedersen	Stenographer required because of additional work in the Electrical group.
V. D. Apple R. E. Nevills R. D. Scott W. E. Sprenkle R. Wesley	Personnel added to department to take care of additional blueprint reproduction due to demands of the Construction, Design and Project Engineering Departments.

Terminations:

F. C. Altman	Terminated due to housing.

Transfers:

J. C. Dahlin J. D. Dixon J. R. Gough	Three transfers to Technical Department to make available men with "Q" clearances for special work.

The force as of February 29, 1948, is as follows:

Superintendent	1	
Asst. Superintendent	1	
Asst. Area Engineers	3	
Engineering Group Leaders	4	
Engineer Assignment	38	
Foreman	3	
Total Supervision		50

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Project Engineering Dept.

ORGANIZATION & PERSONNEL (Cont.)

Draftsman	19	
Jr. Engineers	7	
Estimators	4	
Jr. Draftsman	15	
Clerks	4	
Jr. Clerks	5	
Helpers	6	
O.M.O.	23	
Stenographers	10	
Typist	4	
Office Helpers	17	
Total Weekly		114
Grand Total		164

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	1	8-19-47	$486,000
C-184	Experimental Animal Farm	0	10-27-47	286,000
C-222	Dismantling Unoperated Equipment in 105 Valve Pits	0	2-10-48	4,000
Susp. C.	Can Opening Facilities	75	- - - -	- - - -
	TOTAL Estimated Cost 100 Areas Projects			$776,000

200 AREAS

C-112	Additional Underground Waste Tank Facilities (% Comp. G.E. Portion Only - Does not include Subcontract) Part II has been authorized and Total for Entire Job is now $2,575,400.	99	11-25-46	287,790

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Project Engineering Dept.

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

200 AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-120	Divert Second Cycle Waste from X-110 (Now awaiting results of H. I. Studies on Soil Sampling)	97	1-15-47	$134,200
C-126	Install Central Lint Catcher for 2723-W Laundry.	95	1-9-47	2,525
C-133	Special Test Wells 200 E & W	87	1-30-47	135,000
C-160	H. I. Shaft at 241 B.	98	7-14-47	19,000
C-163	Additional Waste Storage and Tie Lines - 200 W (G.E. portion only - Subcontract not Included)	22	7-25-47	500,000
C-166	Additional Nitric Acid Storage Facilities.	35	7-2-47	57,000
C-171	Alterations to Six Periscope Assemblies.	36	8-6-47	7,200
C-192	Biology Laboratory.	0	2-3-48	590,000
C-193	Alterations to Existing Lighting System 272-E-W.	70	9-20-47	6,600
C-213	Sprinkler System - Railroad Shop - Riverland.	0	1-13-48	8,200
C-216	Addition to Building 2707 EA.	0	2-2-48	4,170
S.C.10155	Physical Testing Equipment.	65	- - - -	- - - -
S.C.10225	Stack Filtration Facilities - 200 E & W.	25	- - - -	- - - -
	TOTAL Estimated Cost 200 Areas Projects			$1,751,685

4.

Project Engineering Dept.

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

300 AREA

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-122	Additional H. I. Instruments	98	1-15-47	$105,200
C-127	300 Area - Increased Capacity of Telephone Exchange (Electrical Dept. will procure and install equipment).	0	5-12-47	30,000
C-141	Addition to 3717 Instrument Shop	98	3-24-47	90,000
C-142	Metal Casting Facilities (Parts I & II)	95	4-7-47	188,000
C-188	Technical Library and Office Building 3702	100	9-24-47	66,000
C-189	Building 3745-A X-Ray Facilities	40	8-20-47	22,000
C-207	Fire Alarm System for Building 3706 & 3717	10	11-19-47	5,450
C-208	Change House Enlargements Building 3707-A	100	11-20-47	3,600
C-215	Move Propane Tank - 300 Area	65	1-23-48	2,650
C-219	Development of Additional H.I. Instrm.	0	1-27-48	97,200
C-220	Project for Optical Building 3708 - 300 Area	0	1-30-48	81,900
C-223	3703 Office Building Units for Technical	0	3-1-48	93,000
	TOTAL Estimated Cost 300 Area Projects			$785,000

5.

Project Engineering Dept.

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

700 - ADMIN. & GENERAL PLANT AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-138	Bldg. 702 - Automatic Dial Exchange (Elec.Dept. will procure & install equip.)	2	5-12-47	$470,500
C-144	Additional Telephone Cables - Richland (Material partly received, but no installation work started)	0	5-12-47	45,000
C-147	Engineering Bldg. No. 760 (Field Work)	97	5-13-47	253,000
C-148	Combined Maint.Shops-700 Area.	75	6-25-47	170,700
C-149	Expansion of Printing Shop - Bldg. 717.	95	7-23-47	16,000
C-175	Bldg.703-Freight Elevator.	50	7-29-47	9,400
C-177	115 KV Power Line through Richland.	0	8-14-47	913,000
C-195	Radio Communications for R. R. Dispatching.	33	10-15-47	34,000
C-196	Electrical Distribution Headquarters Bldg. & Conversion of 2713 E to Garage.	0	10-10-47	162,400
C-200	Toilet Facilities & Air Conditioning for B-Y Telephone Exchange	100	10-16-47	9,700
C-202	Gate House & Parking Lots - 700 Area at Stevens Dr. & Swift Blvd.	43	11-7-47	31,500
C-209	Two Story Addition to Bldg.703.	30	12-3-47	140,000
C-214	Rehabilitation of Plant Railroad.	0	2-18-48	3,214,000
C-217	Addition to Bldg. 760.	0	2-24-48	113,300
	TOTAL Estimated Cost for 700 Admin. & General Plant Areas.			$5,112,000

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Project Engineering Dept.

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

1100 AREA

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-134	Richland Village Dust Control & Landscape Program 1947 to June 1948	48	12-19-46	250,000
C-146	Irrigation Extensions-Village	86	3-28-47	90,000
C-157	Revisions to Kitchens - All "E" Type Houses	78	6-12-47	15,960
C-158	Air Conditioning All Dorms except W-4 & W-13	22	7-28-47	136,800
C-164	Construction & Expansion of Parking Compounds-Village	0	6-27-47	50,900
C-167	Commercial Laundry Add. to Equipment Room	90	7-1-47	8,000
C-182	Install Sidewalks, Curb & Gutter West Side Geo. Wash. Way, Gillespie to Abbott Streets	0	8-19-47	26,800
C-186	Overhead Doors - 1131 Garage	0	8-26-47	5,500
C-194	Air Conditioning Richland Theatre	55	10-1-47	7,000
C-224	Transformer Station for Bakery Addition Foodstore "A"	90	2-13-48	4,000
	TOTAL Estimated Cost 1100 Areas Projects			$594,960
	TOTAL Estimated Cost for Active Approved Projects All Areas			$9,019,645

Projects Being Routed for Authorization

E. R. No.			Estimated Cost
A-412	(C-210)	Automatic Traffic Signals-Richland	$ 5,200
A-416	(C-213)	Village Streets-(Returned for Additions & ReEstimate)	23,600
2383	(C-225)	5-6 Waste Disposal to Ground	32,000

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Project Engineering Dept.

PROJECT ENGINEERING - AREA REPORTS

Status of Engineering Study & Design Work in Progress During Month of February:

100 AREAS

E.R.No.		% Engineering Complete
A-1004	Downcomer Design 105-F.	20
A-1006	Dry Air Supply to Test Holes.	25
A-1012	Physical Bend and Tension Testing Machine.	65
A-1035	Can Opening Facilities 200-N.	97
A-1044	Outlet Charging Device.	40
A-1046	Spectrometer.	60
A-1048	Revise Gas Circulating System Building 105.	50
A-1052	Study 2nd Effluent Sewer Line 105 F to 107 F and Recommend New Installation.	25
A-1053	Study 2nd Effluent Sewer Line 105 D to 107 D and Recommend New Installation.	0

200 AREAS

2279	Prepare Project for Regasketing Facilities 221-T & B.	72
2285	"B" Jet Assembly.	75
2287	Study Rail Alignment of 200-N Cranes.	70
2299	Stack Alignment Survey 291-T-B (Long term).	90
2305	Study & Recommend Facilities & Procedure for Working Diversion Boxes.	90
2309	Water Supply & Plumbing - 622 Bldg. - Project being prepared.	80
2326	Mark Grade on Steam Line Supports 200-W.	0
2327	Study Possibility & Redesigning connector head to Simplify Gasket Changing.	70

8.

Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

200 AREAS (Cont.)

E.R. No.		% Engineering Complete
2333	Study and Recommend Outer Roller Bearing for 30 Ton Crane.	75
2339	Design Bracing for Stand Pipes-High Water Tanks.	95
2343	Design Equipment Decontamination Station for Small Items 221B.	94
2344	Design Equipment Decontamination Station for Small Items 221T	90
2353	Crane Alignment & Rail Elevation - 221-T.	70
2354	Design Sampler to Simplify Sampling 221.	95
2360	Prepare Project to Build an Addition to 222U.	99
2361	Specify Catwalks Replacement for High Water Tanks (H-I-539 to be used).	80
2363	Revise Trombone Type Sampler 221-B.	0
2368	Study & Recommend a means of Preventing Steam Cell Piping from Creeping Through a Concrete Wall.	30
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.	40
2371	Design Decontamination Sink & Piping 221-T & B.	90
2372	292-B Annex to Scrubber Facilities.	40
2373	Design Safety Shower for G Cell 224-T.	5
2374	Estimate Cost of Providing Parallel Operation of "B" & "E" & of "G" & "F" Cells, 224-T.	0
2375	Adapt "Q" Smith Sampler Principles to 221 Bldg. Sampler Compartments.	0
2376	Cathodic Protection to Underground Waste Lines (Survey Work and As-Built Drawings).	75

9.

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Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

200 AREAS (cont.)

E.R. No.		% Engineering Complete
2377	Stack Gas Decontamination 291-T-U-B.	57
2378	Design Precipitator Tanks with Longer Life Jackets 221-T-B.	70
2379	Design Single Dip Tubes for F-1 & Piping to F-2, N-1, WR-1, Bldg. 231 Cell No. 1.	100
2380	Study Sanitary Septic Tank & Tile Field Overload Conditions at 200 E & W Process Areas.	8
2381	Design Acid Supply Tanks & Piping for 222-B.	50
2383	Crib & Tile Field for Disposal of 5-6 Waste Near 361-B Tank	100
2385	Steel Stock Handling Equipment.	90
2386	Connector Wall Nozzle 46 to 15-8 Nozzle 16 at 221-B.	0
2387	Piping Changes E-I-Y Tank 224-T.	20
2388	Redesign Centrifuge Drive Fork.	10
2389	Air Conditioner - 622 Building.	10
2390	Valve Maintenance Chart.	60
2392	Laundry Equipment Rearrangement.	100
2393	Steam Jet with Remotely Removable Features.	0
2395	Bismuth Subnitrate Preparation Facilities.	25
2396	Diversion Box Connector - Upper 2 to Lower 13 24-154-B.	0
2397	Specify 1-1/2" Pipe from Car Spot to 181 Tank 211-T.	15
2398	Industrial Burial Ground 221 T-B.	30
2399	Redesign Poppy Carriage 221 T-B & 231.	0
2400	Maintenance Hoist for Cranes 221 T-U-B.	0
2401	Maintenance Hoist for Cranes 212 N-P-R.	0

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Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

- 200 AREAS (Cont.)

E. R. No.		% Engineering Complete
2402	Gib Crane Over Axelson Lathe 272-E.	0
	300 AREA	
A-3003	Stump Shear.	47
A-3019	Housing for X-Ray Machine.	97
A-3027	Water Softeners - 3706 Building.	80
A-3032	Metal Punch Press Design.	100
A-3036	Designs for Construction Optical Instrument Bldg. 300 Area.	50
A-3037	Design Marking Device for Building 313.	95
A-3042	Design Air Filters for Building 3706.	60
A-3044	Designs for Conversion of Bldg.3706 Offices to Labs.	60
A-3046	Study Procurement of New Chip Recovery Press.	30
A-3047	Design Tube Mock Up.	95
A-3048	Study & Recommend Additional Ventilation for Oxide Burner Room Bldg. 314.	40
A-3049	Design for Building 3703.	75
A-3050	Make A Design Study of Rolling Mill for 300 Area.	0
A-3051	Make a Design Study of New Extrusion Press for 300 Area.	2
	700 ADMIN. & GENERAL PLANT AREAS	
828	Bldg. 702 - Automatic Dial Exchange.	93
861	Stores Warehouse Hanger (Canceled).	8
923	Improvement of Air Conditioning System Bldg.703.	30
925	Combined Maintenance Shops - Bldg. 722.	92

11.

Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

700 ADMIN. & GENERAL PLANT AREAS (Cont.)

E.R. No.		% Engineering Completed
941	Experimental Animal Farm.	41
962	115 KV Power Line Through Richland.	38
963	Biology Laboratory.	5
972	Survey Effluent Lines 100 B & D Areas.	0
973	Elec. Dist.Hdqts. Bldg.Substation 251 & Conversion of Bldg. 2713 E to Garage.	28
981	Special Danger Zone Fences (Canceled).	0
997	Deodorizer for Building 706.	5
A-401	Telephone Cable Layout - Bldg. 720.	20
A-409	Telephone Cable Layout for Bldgs.703,705,760 & 770.	0
A-414	Fire Alarm & Detector System for Bldg. 705.	20
A-420	Rehabilitation of Plant Railroad.	20
A-428	Design & Estimate for Office Machine Repair Shop-Hutment 722-H.	30
A-429	Electrical Work - Bldg. 3708.	5
A-432	Addition to Bldg. 760.	30
A-434	Study of Lighting - Bldg. 3713.	100
A-435	Study & Estimate for (1) Fire Detector System & (2) Automatic Sprinkler System for 7 Warehouses-Pasco Depot.	100
A-438	Design for Badge Assembly Marker for Construction Sec.	10
A-444	Design Steam Line Bracket at Power House Bldg.784.	100
A-445	Electrical Design for Bldgs.3706, 3703 & 3707.	50
A-448	Electrical Work Bldg. 305-A Test Unit.	30

12.

Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

700 ADMIN. & GENERAL PLANT AREAS (Cont.)

E. R. No.		% Engineering Completed
A-450	Determine Elevation of Export Line 100 F Area	90
A-451	Layout for Concrete Work 321 Bldg.	60
A-452	Expansion of Main Plant Telephone System.	0
A-457	Plans & Survey for Relocation of Tel.Cable - 3000 Area.	75
A-458	Electrical Work Bldg. 721.	100
A-459	Lighting of Maintenance Shops - Bldg. 3722.	0
	1100 AREAS	
785	Cafeteria - Air Conditioning.	55
822	Pop Up Sprinkler System - Village Public Grounds.	35
841	Richland Dust Control & Landscape Program.	74
896	Construction & Expansion of Parking Compounds - Village.	55
920	Air Conditioning All Dorms Except W-4 & W-13.	75
958	Design for 5 Ton Overhead Crane - 1131 Garage.	0
A-411	Oil Burner for Hospital Incinerator.	0
A-412	Automatic Traffic Signals - Richland.	30
A-416	Patching & Seal Coating of Village Streets.	90
A-418	Study of Lighting - Commercial Laundry.	80
A-422	Air Conditioning - Transient Quarters.	7
A-426	Electric Heating - Wiring - M.S. Warehouse.	25
A-436	Revise Village Map to Show All New Houses.	100
A-437	Design Steel Columns in Basement-Richland Lutheran Church.	25

13.

[redacted]

Project Engineering Dept.

Status of Engineering Study & Design Work in Progress During Month of February (Cont.)

1100 AREAS (Cont.)

E.R. No.		% Engineering Completed
A-439	Design for Vestibule & Taxi Stand - Commercial Bus Depot.	100
A-441	Design & Estimate for Heater Platforms - Lewis & Clark School.	90
A-442	Design & Estimate for Walk-in Refrigerator - Recreation Hall.	0
A-447	Irrigation, Grading & Seeding for Grounds of 950 New Houses.	0
A-453	Replacement of Roof - North Reservoir - Richland.	10
A-454	Installation of Mail Boxes - All Dormitories.	90
A-455	Renovation of Tract House L-859.	10
A-456	Improvement of Van Giesen St. - Perkins Ave. to Yakima River Bridge.	30

ENGINEERING STUDIES GROUP REPORT

Studies Completed This Month

E.R. No.		Date Completed
2311	Examination of "C" Crane.	2-6-48
2323	Spare Parts - Whiting & Northern Cranes.	2-12-48
4295	Safety & Relief Valve Standardization.	2-12-48
4320	Prevention of Seepage - Residence Basements.	2-12-48
4334	Use of Salvaged Poles.	2-6-48

Studies Added This Month

4333	Stainless Steel Control.	2-9-48
4334	Use of Salvaged Poles.	2-6-48
979	Standard Sign - Catalog.	8-12

14.

[redacted]

Project Engineering Dept.

Active Studies

		% Complete
979	Standard Sign Catalog.	5
4296	Oil Reclamation Survey.	95
4305	Work Space Under Floors.	95
4306	Concrete Standard Practice.	95
4310	J. I. Use of Abrasive Equipment.	90
4316	Revise Paint Standards.	90
4318	Revise Packing & Gasket Standards.	5
4321	Hutment Weatherproofing.	95
4322	Non - Slip Floor Finishes.	95
4324	Lubrication Survey 300 Area.	75
4325	Lubrication Survey 3000 Area.	50
4326	Use of Inhibited Oil in Turbines.	75
4327	Maintenance of Pitched Roofs	70
4330	J. I. Perna & Worthington Compressors.	5
4331	J. I. Boiler Pumps & Turbines.	10
4332	J. I. Ruggles Klingeman Valve.	60
4333	Stainless Steel Control.	15

BLUEPRINT CONTROL GROUP REPORT

	This Month	Last Month
"SK" AND "H" Drawings Numbers Issued	460	511
Black and White	27,293	15,216
Blueprint	19,758	20,464
Ozalid	25,276	25,048
Photostat	41,036	40,819

15.

[redacted]

Project Engineering Dept.

BLUE PRINT CONTROL GROUP REPORT (Cont.)

	This Month	Last Month
Reproducibles		
Ozalid	1,493	1,664
Portagraph	75	48
Prints Temporarily Out Carded & Returned for Filing	2,250	2,398
Prints Carded Out on a Permanent Basis	42,187	38,918
Permanently Charged Prints Returned for Disposal	9,315	8,155

BACKLOG SUMMARY

	Work on Hand 1-31 Estimated Man Days	Work Completed 2-29 Estimated Man Days	Work on Hand 2-29 Estimated Man Days
Studies	242	97	203
Projects	7,564	1,587	8,667
TOTAL	7,806	1,684	8,870

ELECTRICAL DEPARTMENT

FEBRUARY, 1948

GENERAL

Work Order Summary:

Area	Work on Hand Jan. 25		Work Completed to Feb. 22		Work on Hand Feb. 22	
	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days
100-B	14	61.3	31	158.9	12	58.0
100-D	14	20.8	34	211.2	16	27.2
100-F	34	43.4	74	328.1	33	32.7
200-E	63	231.8	72	270.9	43	143.2
200-W	64	197.5	54	255.5	77	152.4
300	43	330.5	80	259.1	38	591.8
700-1100	99	397.5	120	491.9	110	417.5
Distribution	207	12,340.7	196	1562.8	209	12,490.0
Telephone	19	2,431.5	24	411.9	20	2,495.3
Minor Const.	32	1,696.7	21	872.5	33	1,216.3
Total	589	17,751.7	716	4822.8	591	17,624.4

The total backlog of work orders has been reduced very slightly during the month. The largest decrease has been in minor construction backlog. The overall month end picture is essentially the same as last month.

The attached load chart for the peak day of the month, February 10, shows a total of 50.9 MWH peak for the entire project including coincidental 22.0 MWH demand for the 66 KV system. Both peaks are the highest experienced during all operation to date by a very small margin. The usual 66 KV peak is in the evening (5-6 P.M.) but the attached chart shows an additional pronounced peak of 21.5 MWH between the hours of 7-8 A.M., resulting from an unusually dark morning.

On Project C-177, 115 KV system, there have been a number of developments.

Materials are accumulating to enable starting construction of the 115 KV line in the near future. Arrangements have been made with Subcontractor to start dismantling the Allard line during the first week of March in order to make the poles available for 115 KV construction. A materials storage yard near the 300 Area has been provided.

Rerouting of the 115 KV line through the Village has been thoroughly discussed with the Design Department and the Consulting Engineers concerned with the Village Master Plan. Alternatives of routing outside the Village with substations on the edge of the Village, and of underground 115 KV through the Village have been formally reported on and final decision is awaited. Until final decision is given, final studies pertaining to reconnection of Village feeders, and the contract for construction of the 115 KV line are held up. A decision must be made during the first week of March to avoid delay to the program.

Electrical Department

Special labor crews continue Osmose treating of pole butts, and during the month the following work was accomplished:

263 poles, 230 KV line
169 poles, general distribution, 100-D Area

A complete report was made detailing the backlog of work for line crews, both normal maintenance and special line work as necessary to rebuild existing lines, or to connect in Subcontractor's constructed lines. It is essential to employ nine men to assure complete 1948 coverage of maintenance, without consideration of the special work. The present situation is critical and cannot be relieved without further substantial employment of Linemen and Helpers.

Weekly meeting of Electrical Standards Committee continue. The Hanford Works "Electrical Design and Installation Standards" has been reviewed completely, modified as necessary, and approved. The subject of grounded versus ungrounded operation of 440 volt systems is now being considered.

An agreement has been reached with the newly formed Village Public Works Organization whereby the Electrical Department will turn over to them three supervisors plus 19 Electricians and Helpers as a permanent part of this organization. It has been agreed that the Village Public Works Organization will be responsible for all 1100 Area electrical maintenance and minor construction except items maintained by the Power Department and the Hospital. The Electrical Department will retain responsibility for the 700 Area. The effective date of transfer will be March 15.

Since the Maintenance Department will occupy the new 722 Building, the 700 Area Electrical Division is moving into the entire 722-A Building as headquarters. Arrangements are being made to consolidate Richland line crews in one headquarters to be located outside the 700 Area proper.

A complete load forecast has been developed for the entire electrical system, predicting load to January 1951 in consideration of expansion planned in the Village and in the work areas. An ultimate peak of 130 MWH is predicted with 100 MWH peak to develop in mid-year of 1949. Request for corresponding power allocation is being made through the Atomic Energy Commission and Bonneville Power Administration.

A further load forecast has been made for the 66 KV system (future 115 KV) for the 300 and 3000 Areas (North Richland). The present 750 KVA bank in the 300 Area has already been overloaded on peaks, and survey of proposed installations indicate substantial load will develop late in 1948. In 3000 Area, a peak of double the present 5000 KVA capacity is expected to develop in January, 1949. A method of providing extra capacity in both areas has been developed, but actual realization is dependent upon availability of Richland 66 KV transformers after 115 KV substations in Richland are complete. This means that 115 KV in Richland must be in service by September, 1948, and that decision as to line and substation location must be made immediately.

In view of the expected increase in 300 Area load, not previously known, a Part II of Project C-177 has been requested to provide 115 KV transformer capacity for the 115 KV system, in addition to that previously requested and approved.

As requested by Management, budget estimates have been prepared for electrical maintenance and operation.

HW-7191-dec

Electrical Department

Discussions with the Design Department took place during the month relative to new 100 Area changes, and expanded 200 Area general power supply. Data were supplied as requested.

ORGANIZATION AND PERSONNEL

In line with last month's observation relative to re-organization of line crew supervision, Mr. Roy Keene has been made Shift Engineer directly responsible for line crews in Richland, and Mr. R. J. Agen was appointed Shift Engineer in charge of the work areas, both reporting to the Assistant Area Engineer, Distribution Division.

To replace Messrs. Keene and Agen, W. R. Howard and G. E. Hall were upgraded to the position of Craft Foreman.

Mr. C. R. Bergdahl, Assistant Area Engineer in charge of the 300, 700 and 1100 Areas, has been transferred to the new Village Public Works Organization, and has been replaced by R. F. Smith, upgraded from position of Foreman.

Mr. E. G. Dosskey, Foreman in Substation Maintenance, was transferred to the Design Department at their request, and Substation Maintenance was reduced from three crews to two.

Two Assignment Engineers, H. R. Hughes and O. B. Monteith, have been transferred to the new Project Engineering Department.

One Junior Engineer was hired during the month.

Two Linemen were added to the payroll, and one Helper was transferred in from another department during the month.

One Lineman and one Helper terminated voluntarily.

	February	
Number of employees on payroll:	Exempt	Non-Exempt
Beginning of month	43	242
End of month	42	242
Net decrease	1	0

AREA ACTIVITIES

1. 100 Areas

A. General

The 105 Pile Building mixer panel amplifiers in all areas were remodeled by adding relays to make it impossible to cross the elevator amplifiers by leaving the voice power selector switches in the wrong position. Microphones were installed in the Monitor Room and Control Room locations to give better reproduction on the elevators from those positions. Several other minor changes were made and the communication system now seems to be very satisfactory.

3

Electrical Department

B. 100-B Area

In Vernita, tract houses JJ-649 and W-1986 have been wired for occupancy and connected in.

Six lights and a receptacle were installed in the balcony at the north end of Water Treatment Building 185. This section is to be used as an Instrument Shop.

Installation of shielded cable for the "C" and "D" elevator communication systems was completed.

C. 100-D Area

Synthetic wires were installed from the junction box in the ceiling of the 183 Filter Plant Pump House to the Bailey transmitter in the southeast corner of the room. The original wires were in bad condition due to moisture in the conduit. Condulets and joints were sealed with glyptal.

The following was accomplished in the 105 Pile Building during the month:

(a) Wiring was completed for the movement indicators on the back face of the Pile.
(b) Wiring was completed for the strain gauge installation on the rear face of the unit.
(c) Work was started to restore the "D" elevator cab positioning switch to service. The design is being altered somewhat from the original and the job is about 50 percent complete.
(d) Transformers XXT and ANT in the electrical control room were disconnected from the VSR Saflex switch and connected to a spare switch in the Process Saflex Panel. This allows the safety circuits and annunciator circuits to remain energized while the vertical safety rods are de-energized for maintenance work.
(e) Fan damper solenoids failed on #7, #9, and #10 fans and were replaced. Failures of the solenoids were due to sticking of the armatures in two cases and failure of a linkage pin in the other.

Broken counterpoise was repaired in the 230 KV line just outside 100-D Area (broken by road equipment).

D. 100-F Area

A thermocouple wire was installed for the Instrument Department from the 10 ft. level far side to the control room in the Pile Building 105.

Three flood lights were installed along the north wall walk-way of 182 Reservoir Building.

Two additional lights were installed over the chlorine tank storage area at 183 Filter Plant Head House to provide adequate light for making connections to tanks.

E. 105 DR Area

Because of low voltage at Gate House in the 105 DR Area, the transformer was changed and additional tap range provided.

Electrical Department

F. White Bluffs

An electric water heater was removed from Hanford Fire Station and installed in the White Bluffs Fire Station.

A complete overhaul was made on the ice hoist motor and gear case in the White Bluffs Ice House.

Overhead clearance guys on road crossing under the 230 KV line at White Bluffs, just outside of the 100-D Area, were installed.

On February 3, 6900 volt distribution system in White Bluffs was connected on to the new 3000 KVA substation which had been completed during the month of January.

The Hanford Fire Department was moved to White Bluffs, and it was necessary to install a pole for radio service.

G. Hanford

A new transformer bank for the boat and sentry house at the Hanford Ferry Dock was constructed.

Considerable line and three transformer settings in the Hanford area were removed and salvaged.

H. Status of Major Work Orders

Project	Location	Item	Comments
Design Ch. 56	1709-B (Fire Dept. Bldg.)	Electric heating	100% complete
WO D-33846 D-37381	Riverland Locomotives	Oil and water heaters	90% complete - Balance held for materials.
Design Ch. 58	105-D	High radiation alarm	100% complete

2. 200 Areas

A. General

The following notations indicate developments during the month relative to cathodic protection of stainless steel pipes

Rectifiers promised for delivery in February have not been received. These rectifiers are for use in the "U" Area. However, three more cathode connections were made to pipe stubs in the "U" Area and additional anodes were installed. To date, six cathode connections and eight anodes have been installed, while five more cathodes and two more anodes remain to be installed for full protection.

Due to the "TX" project some of the anodes on the T-U tie line have been disconnected, but ample protection of the line is being maintained.

The proposed experimental work relative to determining threshold values of potential, and checking the action of protective coatings is progressing. Work is held up awaiting excavation at present.

As the result of a suggestion, potential tests have been made on the lighting circuits in the 224-B and 224-T Building canyons to determine life expectancy of lamps used in these areas. Tentatively, the results indicate approximately 200 Percent normal life in 224-B and 400 percent normal life in 224-T, based on standard 120 volt lamps. The study is being continued.

B. 200-W Area

On February 3, service was supplied to the "TX" construction substation and the 155 diversion box. On February 9, the original lighting transformer for "TX" was changed from a 25 KVA to a 100 KVA.

On February 12, an unscheduled outage occurred on line E8-L16 when the Electrical Distribution group were preparing to install a 10 KVA transformer for the concrete mix plant. An error was made in checking out the lines, and grounding wires were applied to the wrong circuit, resulting in blown fuses. Details are covered in a near-serious accident report.

On February 20, at approximately 12:50 P.M., a crane being used in the 221-T Area was swung into the 2300 volt feeder E8-L7, tripping oil circuit breaker E8-X7 and interrupting half the service to "T" Area. The breaker was reclosed and service restored at 12:55 P.M. A near serious accident investigation was held and report made.

A 10 KVA transformer and service for the mix plant was installed.

Transformer capacity and three-wire service for Construction Badge House was provided.

Transformer, service and flood lights to 241-B were installed.

C. 200-E Area

A device was installed in the Maintenance tool crib for checking the continuity of the ground conductor on all portable tools.

Nineteen motors were rewound and repaired in the motor shop.

Due to additional load in the 2708 Building, it was necessary to install a new service.

Secondary and service to Excess Warehouse was extended.

Twenty poles in the 13.8 KV lines between A-8 and 200 East were straightened and retamped.

D. Status of Major Work Orders

Project	Location	Item	Comments
C-126	200-W	Installation of filters in laundry dryers	90% complete

Electrical Department

Status of Major Work Orders (Cont'd.)

Project	Location	Item	Comments
C-133	Record Bldg. Annex	Electric heat and fixtures	100% complete
C-160	241-B	H.I. Shaft second cycle waste crib	75% complete
C-166	211-B & T	Nitric Acid Storage	50% complete in 211 B 0% complete in 211 T (Not yet ready for electrical work.)
C-193	200-E & W	Alterations to lighting	70% complete in 272-E 95% complete in 272-W
Design Ch. 11	200-E & W	Excavation signals and code call system	80% complete in T 50% complete in B 0% complete in U (Awaiting materials)

3. 300 Area

A. Refer to "General" comments relative to 300 Area future load studies and power supply to the area.

B. Project C-142 (314 Building induction melting furnace) was completed early in the month and is now in full operation. Thymotrol motor drive has not yet arrived and the turntable is being driven by air temporarily.

On February 10, an arc over occured in the south furnace, partially due to close clearances, and partially to inexperience of operators. Changes were made to increase insulation and increase clearances. The furnace operated satisfactorily to the end of the month after changes and clean-up.

C. Radio station WUGN-11 was moved from Richland Barricade to the 300 Area. Antenna was constructed.

D. Status of Major Work Orders

Project	Bldg.	Item	Comments
C-142	314	Induction heating	98% complete
C-141	3717	Addendum #2, addition to Bldg. (Instrument Shop)	0% complete (Work order just received.)
C-187	321	Scale-up Tank Farm	2% complete (Inside work started 2/23/48.)
C-188	3702	Technical Library and Office	95% complete

Electrical Department

Status of Major Work Orders (Cont'd.)

Project	Bldg.	Item	Comments
C-189	3745-A	X-Ray Building	5% complete (Electrical work progressing with construction of the building.)
C-207	3706 3717	Fire Alarm System	0% complete (Awaiting delivery of materials.)
C-208	3707-A	Addition to Bldg.	100% complete
C-215		Relocating Propane Tanks	0% complete (Work order just received.)
C-220	3708	Electrical Shop and Optical Building	0% complete (Drawings not yet available.)

4. North Richland (3000 Area)

A. During the month, studies were made of a possible re-routing of main telephone trunk cable to the work areas which runs lengthwise through the center of the 3000 Area, especially subject to fire hazard where it passes through an extensive lumber yard. Plans for a main parallel cable were formulated and work started towards its installation at the George Washington Way side of North Richland. The new cable will carry all important trunk service to the work areas.

5. Gable Mountain Communications Building

A. The new communications building is complete and in service.

6. 700-1100 Areas

A. Responsibility for the maintenance of all X-Ray equipment at the Kadlec Hospital was assumed by the Electrical Department on February 6, 1948 at the request of the Instrument Department.

B. On February 17, temporary repairs were made to the chest X-Ray machine by removing from service one of the indicating tapes. A purchase requisition was placed for entire tape assembly but information was received from the supplier that, although this was the usual method of making these repairs, no assembly was on hand and one would be shipped by Air Express for early March delivery.

C. Trouble developed in tube rotating circuit and in the tube of above machine on February 27. Repairs were completed and the tube replaced.

D. This X-Ray machine is being worked excessively and trouble can be expected until relief is provided by the installation of an additional machine which is on order.

E. A new transformer bank at 701-A Gate House was installed.

[redacted]

F. Three-wire service to tract house 1607 was installed.

G. At the request of the Design Department, a 10 KVA transformer bank for service to tract house 764-K was installed.

H. Transformer capacity at the Richland Rod and Gun Club was increased from a 5 KVA to a 10 KVA.

I. In order to provide capacity for welders in the Heavy Equipment Yard, it was necessary to extend primary and construct transformer bank consisting of two 15 KVA transformers.

J. Guard poles at overhead transformer station in the rear of the Recreation Hall were installed because the station was a safety hazard to high trunk loads.

K. Three poles were set and three-phase service was extended to 1131 Service Station.

L. The 7200 volt line was extended eight spans and a transformer bank was constructed to provide service to Patrol Checking Station on George Washington Way just north of the Yakima Bridge.

M. Distribution systems construced by the Contractor in "A" and "B" housing areas were energized.

N. New service was provided to [redacted] precut houses.

O. All burned out fence lights, road lights, and flood lights in the 300, 700 and 1100 Areas, Pasco, Benton City were relamped during the month.

P. A transformer bank consisting of three 25 KVA transformers was constructed at the Filter Plant for the Tertilling Construction Company.

Q. Four fence light poles were relocated on the west side of the 700 Area.

R. In order to provide telephone service to the 722 combined shops, it was necessary to set four poles, three anchors, and string eleven hundred feet of messenger and fifty-pair telephone cable from the 702 Building.

S. Primary lines running on Davidson Street past "A" area were re-routed over the new construction lines so as to remove existing lines in order to allow for excavation purposes. Old poles and line will be removed as soon as telephone circuits have been cleared by the Telephone Department.

T. Status of Major Work Orders

Project	Item	Comments
C-115	Fire alarm extension in all dormitories (Does not include M-9 through M-14.)	100% complete
C-147	Engineering Bldg. (760)	90% complete (Fire alarm equipment not yet received.)

Electrical Depar .ent

Status of Major Work Orders (Cont'd.)

Project	Item	Comments
C-148	Electrical work on combined shop (722 Bldg.)	80% complete
C-149	Conversion of 717 Bldg. to print shop	100% complete
C-153	Flood lighting Soft Ball Park	0% complete
C-157	Revisions to "E" house kitchens	65% complete
C-158	Air conditioning in all dorms (Does not include M-9 through M-14.)	50% complete
C-175	Installation of freight elevator in 703 Bldg.	20% complete
C-186	Installation of electrically operated garage doors at 1131 Garage Bldg.	5% complete
C-194	Revisions to heating and air conditioning of Richland Theatre	45% complete
C-202	Electrical work for Gate Houses 701-A and 701-B	50% complete
C-209	Two story additions to 703 Bldg.	10% complete
C-224	Service to Garno's Bakery	100% complete
WO 24551	Clean and inspect electric heaters and cords in prefab houses	0% complete
WO 25210	Installation of electric heat in Luthern Church (old Grange Hall)	60% complete (Completion dependent on delivery of heaters on order.)
WO 25584	Alterations to U.P. Church lighting	100% complete
WO 25976	Alterations to dining room lighting fixtures and inspection of service panel in prefab houses	0% complete
WO 25977	Inspection of service panel and grounding of laundry tub receptacle in all conventional type houses	0% complete

Status of Major Work Orders (Cont'd.)

Project	Item	Comments
WO 22521	Electric heat - tract house O-1124	0% complete
WO 26124	Electric heat - tract house O-1163	100% complete
WO 26638	Electric heat - tract house K-788	100% complete
WO 26904	Electric heat - tract house L-898	100% complete
WO 27034	Electric heat - tract house 2000-X	100% complete
WO 27053	Electric heat - tract house L-865	0% complete
WO 25964	Electric heat - tract house L-894	0% complete

7. Telephone Group

A. Forty-four two-party resident numbers were changed to the newly provided "2200" and "2300" number groups in order to provide low number lines for office use.

B. Sixty-five resident one-party numbers were changed to two-party numbers in order to secure additional lines for office use.

C. One additional foreign exchange line was connected to Seattle making a total of three to Seattle. Also, one additional foreign exchange line was connected to Portland making a total of two to Portland.

D. One-hundred and forty-nine lines were vacant on the Richland Switchboard as of February 29, 1948.

E. Work on the North Richland dial exchange has progressed to the point where it is expected to be in service during the second week of March.

F. Project C-127, expansion of 300 Area exchange to 200 lines is still awaiting arrival of equipment.

G. Project C-200, additions to "BY" Telephone Building, is 75 percent complete.

H. During the month, the following telephone instruments were moved:

	Installed	Removed
All work areas	51	41
Richland	393	265
North Richland	18	7
	462	313

I. The requirements for moving telephones have increased substantially over the past few months. All indications are that the high rate will continue as construction progresses. Therefore, it is imperative that additional telephone installers be hired immediately. The present shortage of personnel in this group means substantial overtime must be continued, and that overtime will be inadequate in view of the increasing rate of activity.

8. Power Supply Interruptions

Date	Area	Circuit Affected	Duration	Remarks
		230 KV		
There were no unscheduled interruptions during the month.				
		66 KV		
Feb. 4	Columbia Camp	REA Line	50 min.	Trouble at REA sub.
Feb. 5	"	REA line, single phase	5 hrs.	Cause unknown
Feb. 5	Richland	Transformer to Rec. Hall	19 min.	Leads loose - truck hit pole
Feb. 5	Columbia Camp	REA line, single	1 hr. 1 min.	Cause unknown
Feb. 15	"	REA Line	27 min.	REA sub. out
Feb. 22	Richland	D1-L12 from D1-12X96	59 min.	Kite string in line - 2 fuses blown
Feb. 26	Richland	Pasco-Richland 66 KV	1/2 min.	Middle ∅ O-C relay - Cause unknown
Feb. 28	Hanford	Ringold 6.9 KV line	4 hrs. 5 min.	Three fuses blown

Most of the difficulty with Columbia Camp REA lines occurred during high winds. This line is in poor condition, badly unbalanced, and overloaded on one phase. If more reliable service is to be provided, an HW source of supply will be necessary.

[redacted]

POWER STATISTICS - ELECTRICAL DEPARTMENT

FOR MONTH ENDING FEBRUARY 29, 1948

ITEM	ENERGY - MWHRS Jan.	ENERGY - MWHRS Feb.	MAX. DEMAND - KW Jan.	MAX. DEMAND - KW Feb.	LOAD FACTOR - % Jan.	LOAD FACTOR - % Feb.
230 KV SYSTEM						
A-2 Out (100 B)	3,050	2,700	4,500	4,800	91.1	80.8
A-4 Out (100 D)	7,290	6,230	12,000	12,200	81.7	73.4
A-6 Out (100 F)	6,450	5,980	11,300	11,800	76.7	72.8
A-8 Out (200 Areas)	2,390	2,220	4,000	3,800	80.3	83.9
TOTAL OUT	19,180	17,130	31,800**	32,600**	-	-
MIDWAY IN	19,396	17,276	30,800*	29,600*	84.6	83.9
Transm. Loss	216	146	-	-	-	-
Per Cent Loss	1.1	0.8	-	-	-	-
66 KV SYSTEM						
B1-S1 Out (Richland)	3,697	3,450	7,000	7,700	71.0	64.4
B1-S3 Out "	3,078	2,848	6,400	6,600	64.6	62.0
B1-S2 Out "	3,034	2,770	5,780	5,895	70.6	67.5
B3-S4 Out (300 Area)	453	417	636	840	95.7	71.3
B3-S5 Out "	270	290	1,320	1,080	27.5	38.6
B1-S4 Out (North Richland)	590	797	1,152	1,555	68.8	73.6
Hanford Out	349	307	500	500	93.8	88.2
TOTAL OUT	11,471	10,879	22,788**	24,170**	-	-
Hanford In	4,773	4,852	8,800*	9,700*	72.9	71.9
Pasco In	6,738	6,360	13,200*	14,000*	68.6	65.3
TOTAL IN	11,511	11,212	22,000**	23,700**	70.3	67.9
Transm. Loss	40	333 (x)	-	-	-	-
Per Cent Loss	0.3	3.0	-	-	-	-
PROJECT TOTAL						
230 KV (Item 5)	19,180	17,130	31,800**	32,600**	-	-
66 KV (Item 15)	11,471	10,879	22,788**	24,170**	-	-
TOTAL OUT	30,651	28,009	54,588**	56,770**	-	-
230 KV (Item 6)	19,396	17,276	30,800*	29,600*	84.6	85.1
66 KV (Item 18)	11,511	11,212	22,000**	23,700**	70.3	67.8
TOTAL IN	30,907	28,488	49,800*	51,100*	83.4	80.1
Transm. Loss	256	479	-	-	-	-
Per Cent Loss	0.8	1.7	-	-	-	-

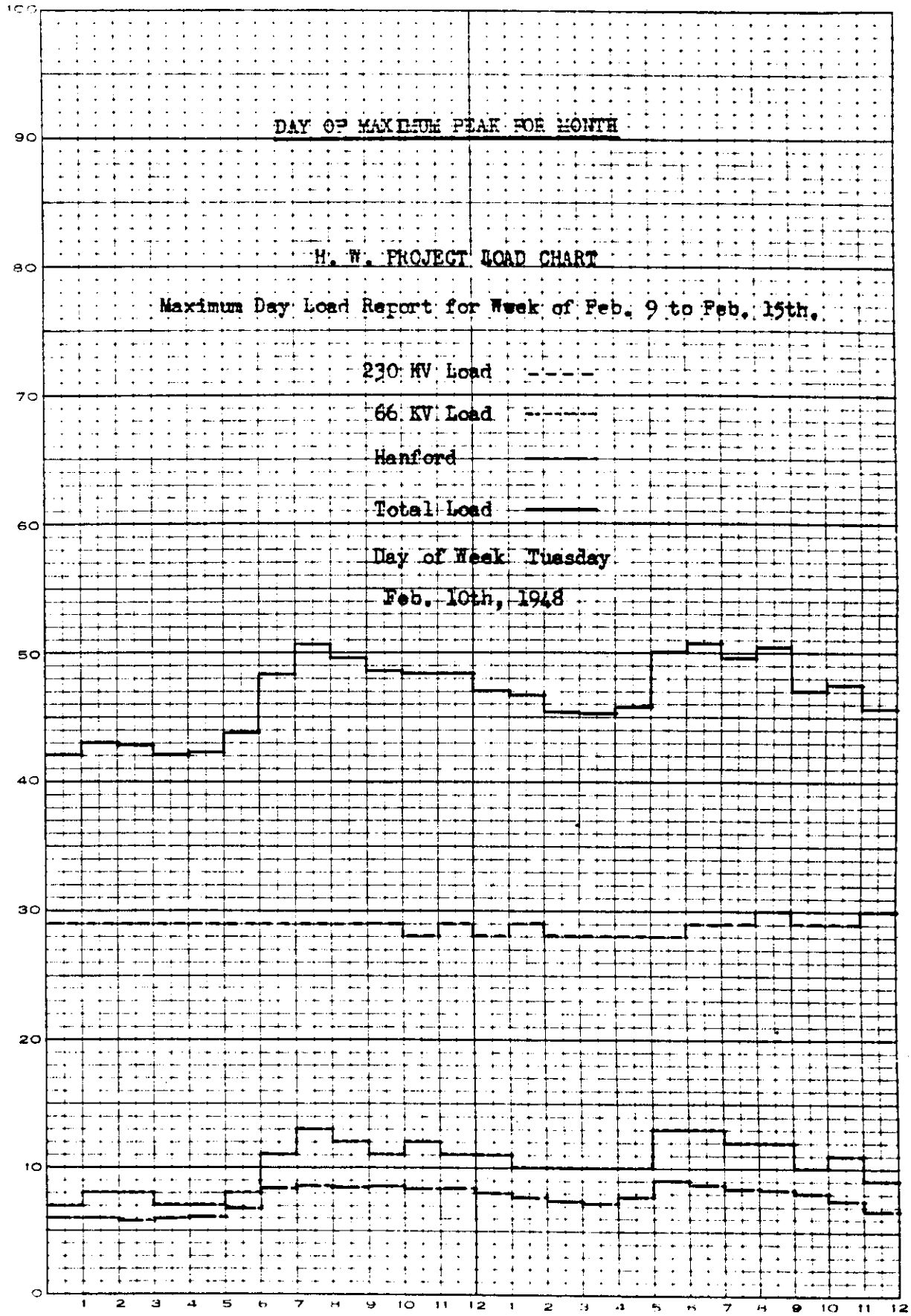
(x) Part of this loss is load at White Bluffs - metered.

*Coincidental Demand

**Non-Coincidental Demand

Average Power Factor - 230 KV System--99.7

Average Power Factor - 66 KV System--97.6



[redacted]

INSTRUMENT DEPARTMENT

FEBRUARY 1948

GENERAL

Project C-219, Directive No. HW-35, Additional Health Instruments, was approved during the month. In anticipation of project approval, quotations have been requested. Every effort will be made to subcontract this work.

Project C-220, Directive No. HW-30, Optical Shop - 3708 Building, was approved during the month. Work was begun by the Minor Construction group of the Maintenance Department.

Mr. F. H. Trapnell, of the Du Pont Engineering group, arrived to consult with our Instrument group regarding design and construction phases of the 100, Redox, and 234 Areas.

Work Order Summary:

	Work on Hand Feb. 1		Work Completed in Feb.		Work on Hand Feb. 29	
Area	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days
100-B	17	10.6	44	114.5	17	22.3
100-D	53	72.3	100	307.6	47	30.8
100-F	43	33.8	84	353.2	49	51.8
200-E	47	45.7	199	319.1	55	48.2
200-W	63	72.1	192	397.7	57	73.4
300	100	2315.5	114	1520.7	129	1808.6
700	75	146.4	105	279.4	57	91.5
Totals	398	2696.4	838	3292.2	411	2126.6

Organization and Personnel

Number of employees on payroll:	February
Beginning of Month	183
End of Month	188
Net Increase	5

Reasons: One exempt employee, an Engineer on Assignment, was removed from payroll, a voluntary quit. Six non-exempt employees were added to the payroll, making a net increase of five employees. These men were hired as replacements for those supplied to the Construction program.

Instrument Department

100 AREAS (Reference Report No. HW-9009)

Project C-172 - Dismantling of Demineralization and Deaeration Facilities

Work order for the removal of all 1/2" control valves on the 185-B, D, and F Deaerating System has been received. After valves have been removed they will be stored in the 100-B Area.

The 100-B Area Maintenance Department has completed the revised panel replacement for "R" panels in 185-B. Although this job ran considerably higher, Maintenance supervision is satisfied that the remaining twenty-nine panels could be done with twenty man hours per panel, assuming material is available. This includes fabrication only. In the meantime, the Purchasing Department has been asked to procure outside bids, and further progress will be covered in the next report.

Additional requirements of the Construction program have made it necessary to transfer two experienced mechanics in order to insure that the instrumentation phase is given the attention it deserves.

Status of "B" Experiment - Building 105-F (Pile Process)

Special Technical Department sample, including heater and special thermocouples, were received and installed in Flow Laboratory tube #3. Recorder-controller was connected and a trial run gave satisfactory operating results.

Further mock-up tests will be carried out as the Technical Department directs.

Unit installation is being held up pending publication of production test write-up. In the meantime, the Instrument Department is preparing a circuit description and an operating procedure.

Work orders are anticipated from the Construction Department to make the required alterations to Instrument panels and equipment in the operating portion of the 100-D Area. This work could be started at once and completed as manpower from the operating group is available.

200 AREAS (Reference Report No. HW-9030)

To relieve eyestrain of the operators of the 75 ton crane, the interior of the crane cab has been painted black and is operated without lights. Under these conditions the recorders on the health instruments in the cab are not usable since they give only visual indication. The recorders in 200 East Area were equipped with a lucite rod across the scale with a small light source at one end. This throws a soft light on the scale, making it visible without reflecting a distracting light about the cab. A similar installation is under way in 200 West Area.

Special indicating equipment was made up on short notice for removal of a large sample from waste tank 104-U. The sample vessel, mounted in a truck, was equipped with a manometer to indicate the depth of the liquid. This was found

to be unsatisfactory as in the filling of the vessel the manometer fluid was forced out. An electrode was inserted in the vessel to indicate the desired level on an external ohmmeter. A similar arrangement was used to indicate flow from the sampling pump to the vessel.

A second relay rack has been installed in the Laboratory Building 222-U for grouping of instruments in a space about one-half that formerly occupied. This has resulted in a substantial savings of labor, since one operator may now care for all equipment from one position.

A leaky relief valve on No. 3 boiler in 284-W Power House required putting No. 2 boiler in service until the valve was repaired. When No. 2 boiler was put in service the mercury was blown from the steam flow meter. Power has been requested to have an instrument mechanic on hand during subsequent boiler changes.

300 AREA (Reference Report No. HW-9004)

Project C-141 - Addition to 3717 Instrument Shop

This project has been accepted and is closed with the exception of some very minor items, i.e., electrical outlets to benches, material stocade, etc.

Project C-122 - Additional Health Instruments

The relay racks which delayed completion of this project have been received and re-painted. According to the present schedule, this project should be completed not later than March 15, 1948.

Project C-171 - Alterations to Six Periscope Assemblies on 75 Ton Crane

Quotations have been received, a vendor selected, and delivery promised within forty-five days for the shaft details.

Design Division

Several projects of interest have been completed during the past month. They include:

1. The under water slug molding device was altered and improved and is again being field tested.

2. A tube locator, ball and socket type, has been designed for the Design and Construction Department. Fabrication of this work is expected to begin within the next few days.

3. Four tie strap strain indicators were detailed and released to the shop.

[redacted]

Instrument Department

Optical Section

A new instrument to be known as a "Portable Periscope" was designed for the new 100 Areas. This instrument resembles the Labyrinth Periscope, which it replaces, but incorporates additional features.

Two windows for sighting the optical pyrometer in the vacuum furnace in 314 Building were completed.

A complete mock-up of the proposed Fly-Eye Periscope, H-4-507, was set up in the shop.

Development Division

Graphite Inclusion Detector

This instrument designed for detecting "tramp" iron in unmachined graphite has been completed and installed in the 101 Building. The maximum usable sensitivity is limited by variations of the specific resistance of the graphite blocks.

C. P. Meter Revisions

Modifications have been made in a C. P. meter to eliminate the need of the input circuit vacuum chamber. Preliminary tests indicate that the chamber may be successfully eliminated.

Microphonics in Standard Alpha Chambers

Much interference with counting work has been experienced in the field due to microphonic ionization chambers. Considerable reduction in microphonics of a standard alpha chamber has been obtained by dampening the body and sealing all air passages with wax.

700 AREA (Reference Report No. HW-9031)

Tube Division

Production Report - 2 Mica Window Tubes
52 Thin Walled Glass Tubes
2 Cutie Pie Chambers
16 Hermaflex Seals
1 BF_3 Chamber filled to 50 lbs./sq.in.

Project C-142 - Metal Casting Facilities

Work Order No. D-69372 requesting this department to "furnish equipment and material required in start-up of vacuum system in 314 Building Addition" has been completed. The leak detector furnished for this purpose is still in 314 Building where it will be used for vacuum maintenance.

[redacted]

Instrument Department

Standards Section

Pressure

In anticipation of the service which can be rendered as soon as our secondary standard dead weight tester is received from the National Bureau of Standards, a pressure work table is being prepared. Two Heise pressure gages have been mounted and the system is so arranged that either the secondary standard tester or a working tester from the field can be connected to the gages. Checking of dead weight testers is an important function which should be started immediately upon the arrival of the reference instrument.

Instrument Department Manuals

Thirty-five copies of Section IV -- Optical Equipment were completed and turned over to Central Files.

Four new write-ups for additions to Sections II and III have been submitted for approval.

Time

Use of the time signal facilities has increased during the month. The correct time was given on thirty-eight occasions.

Design and Construction - Instrument Activity

100 Areas (Reference Report No. HW-9032)

Instrument design work for the DR Area is now complete with the following exceptions:

a. Detailing and requisitioning the new horizontal periscope for the Discharge Area.

b. Preparation of specifications and requisitioning of Main Control Desk panels and enclosure. This has been delayed by lack of details of some of the electrical devices. Drawings are now ready and requisition will be sent to Purchasing by March 4, 1948.

c. Preparation of specifications and requisition for Miscellaneous Panel in Control Room and Monitor Room Panel. These will be ready by March 4, 1948.

d. Preparation of specification and requisition for Fan Room Manometer panels.

e. Sketches showing wiring requirements of all instrument elements are practically complete and will be given to the Electrical group by March 2, 1948.

f. The Power Department have advised that they are conducting tests which may affect the design of the Filter Plant. Quotation has been received for the necessary equipment to change the range of flow instruments in this building in accordance with previous agreement. Placing of the order is being withheld pending the outcome of these tests. The requisition for filter effluent controllers is also being held up.

Final flow diagram for 100-H Area is not yet available. Specifications were prepared and proposals received last September for Instrument and Control equipment for a Boiler House and for a Main Pumping Station of sixteen pump sets, duplicates of the present. It is expected that these specifications can be reissued on very short notice if this design conforms to the final flow diagram.

The Instrument Warehouse and Shop Facility at White Bluffs is now complete. It is proposed to assemble, pipe, and wire, as far as possible, some panel boards by the Construction Contractor's forces for the DR Area in this shop and ship to the field in as large sections as possible.

Work orders were written and submitted to V. D. Nixon for approval to make the required alterations to instrument panels and equipment in the operating portion of the 100-D Area. This approval has not as yet been received. It is planned to do this with Operation Department mechanics. Design for these changes is complete and this work could be started at once and completed as man power of the Operating group is available.

Redox (Reference Report No. HW-9033)

General

As of February 6, 1948, C. O. Clemetsen assumed additional duties as the Instrument Department representative to the Project Engineering group. He will also aid the "S" Department on design and construction phases of instrumentation.

Demonstration Unit

Work has been started on the installation of the new five inch Demonstration Column. Nine pressure taps, equally spaced from top to bottom, are provided for a differential pressure investigation of flooding. One of the two inch column static pressure recorders was supplied with an aneroid element to give a record of interface level on the five inch column. Connecting tubing from the instrument to the top of the column has been installed. Small rotameters are provided to indicate purge gas flow.

Scale-Up Unit

The Instrument design for the Tank Farm and the 321 Building Scale-Up unit has been completed. These prints are now waiting final approval.

Instrument Department

The 321 Building Instrument group has started the fabrication of several assemblies for the Scale-Up unit. Work orders have been issued covering necessary machine shop assistance required in the making of orifice sections, seal chambers, flange adapters for gages, supply manifolds, etc.

Tank Farm construction work, including instrument piping, has been released on contract to Morrison-Knudsen Company. Technical advice on this assignment will be furnished by field supervision of the several service departments of the General Electric Company.

Redox - Kellex Corporation

Several representatives of the Kellex Corporation visited the Hanford Works throughout this period. Meetings were arranged with various members of the Operating Departments to discuss current topics of concern. Progress of the Kellex Development Group was the subject of a morning meeting on February 16, 1948; points of interest included:

1. A development schedule to be issued in the near future.

2. Monthly progress report to be instigated with copy for Hanford Works.

3. Contacts with Kollmorgan and General Electric Company at Schenectady concerning the development of a binocular vision periscope for the crane.

4. Investigation of the General Electric Company design turbine pump as a metering unit.

5. Induction bridge actuation for column interface control.

A meeting in the afternoon of February 16, 1948 covered the operating principle and possible application of X-Ray photometry to the Redox program. Flow measurement possibilities by thermal methods was also discussed from a theoretical view point.

234-5 Building

A meeting of the several interested groups was held, at the first of the period, to establish the instrument shop requirements of the 234-5 Building. Number of shops, location, and space needed were reviewed by representatives of the Operating, Technical, and H. I. Departments. It was generally agreed that efficiency of personnel, equipment, and space were sacrificed by the proposed plan. Requested Instrument Department comments on Proposed Building Layout were submitted on February 25, 1948. These comments reviewed proceedings of the meeting and again called attention to the predicted inefficient use of the assigned space.

Design Specification No. 8 - 234-5 Building Project by D. D. Streid gives a schedule for preliminary plans and specifications. Design layout of equipment is to be submitted for approval May 1, 1948. In general, the

several phases of process design have not been sufficiently developed to consider the application of instrumentation. Preliminary discussions, plans, etc., are being made with the several Design Engineers, but definite conclusions as to instrument requirements are impossible to date. Lack of practical background on instrument application to the process forces a delay, pending process equipment development.

A trip to Los Alamos was planned for the first week of March. Difficulties were encountered in making the necessary arrangements, and plans were rescinded. It was hoped that sufficient application information could be gained by the trip to assist the Design group in meeting their new demands for a shortened schedule.

SERVICE DEPARTMENT

FEBRUARY 1948

PERSONNEL

ORGANIZATION AND PERSONNEL

Employment and Investigation

On February 9 and February 27, two stenographers terminated voluntarily from the Procurement Group. Effective February 9, one typist was transferred to the Accounting Department. On February 12, one typist terminated from the Sign-Up Group. A new typist was added to the Procurement Group, effective February 19. On February 5 and 13, respectively, two office helpers terminated from the Sign-Up Group. One messenger assigned to the Procurement Group was transferred to the Design Department on February 9.

Industrial Relations

Effective February 5, one stenographer terminated voluntarily. This stenographer was replaced by a transfer from the Women's Activities Group.

Public Relations

Effective February 1, the Women's Activities group was transferred to the Public Relations Division.

Education and Training

One stenographer was added to this group, effective February 2.

Number of Employees on Payroll:	February
Beginning of month	91
End of month	84
Net decrease	7

This decrease in personnel is due primarily to voluntary terminations from the division.

[redacted]

Service Department

ACTIVITIES

Employment and Investigation

During the past month the re-investigation program being conducted by the A.E.C. on employees on this project prior to February, 1947, has been accelerated. As a result, the work in the Files Section of the Personnel Division has also increased, as in every instance the personnel folder on each employee must be withdrawn from the files for review by the F.B.I.

The volume of employment interviews decreased during February, whereas the number of new cases received for investigation increased slightly. A total of 1,774 applicants were interviewed during February, as compared with 2,220 during the previous month. The volume of new cases received by the Investigation Group increased from 415 in January to 420 in February.

At the beginning of the month there were 497 open requisitions for non-exempt personnel, of which 419 were covered by interim commitments. At the end of the month there were 680 open requisitions, of which 401 were covered by interim commitments. In addition, at the beginning of February there was a total of 108 requisitions for exempt personnel, 63 of the persons so requisitioned having accepted offers, 36 having been made offers but acceptances not received, and the remainder being in the process of investigation. At the end of February there was a total of 106 requisitions for exempt personnel, 57 of the individuals requisitioned having accepted offers, 33 having been made offers but no acceptances received, and the balance in the process of being investigated.

During the past month 28 new requests for inter-departmental transfers were received by the Procurement Group. These added to the 28 active cases on file, make a total of 56 requests for transfer. As a result of these requests, 32 personal interviews were held with the employees, and 4 transfers were effected.

During February the Technical Recruiter of the Procurement Group interviewed technical graduates at the University of Washington, Oregon State College, University of Idaho, and Washington State College. A total of 93 graduates were interviewed at these schools and offers of employment made to 25; 12 of which were chemical engineers, 6 mechanical engineers, 6 analysts and 1 chemist. At the University of Washington two representatives of the Design Department assisted the recruiter in interviewing.

Industrial Relations

During the month of February a total of 2,310 contacts with company employees were made by the Industrial Relations Counselors. These contacts resulted in a total of 2,602 inquiries, summarized as follows:

[redacted]

Service Department

Policy	154
Military Service	8
Group Life Insurance	149
Group Disability Insurance	167
Pension Plan	43
Suggestion System	14
G. I. Bill of Rights	9
Social Security	37
Recreation	3
Richland Housing	66
Other Housing	20
Municipal (Facilities)	7
Municipal (Personal)	7
Personal	93
Miscellaneous	99
Income Tax	1,750
Total	2,602

A total of 127 exit interviews were given to terminating employees during the month of February.

During February, 281 new employees were given orientation. Of this number 60% elected to participate in the Group Life Insurance Plan and 87% elected to participate in the Group Disability Insurance Plan, reflecting a decrease of 1% of those electing to participate in the Group Life Insurance Plan and an increase of 5% of those electing to participate in the Group Disability Insurance Plan over the month of January.

The Industrial Relations Counselors attended two Area Counsel Meetings with a total of 32 members in attendance. In addition, 5 meetings were conducted by the counselors during February at the request of the various departments. A total of 102 persons attended these meetings, the purpose for which was to further explain the Group Life Insurance and Group Disability Insurance Plans.

Two employees retired during February. These employees were as follows:

Chester T. Pickeral	-	Maintenance Department
Marvin Warden	-	Power Department

Interviews by a member of the Industrial Relations Division were held with these employees prior to their departure, at which time they were fully informed regarding the benefits they would receive under the Pension Plan.

J. R. Connell of the Maintenance Department, on leave of absence because of illness, was visited by an Industrial Relations Counselor during February.

Service Department

The Industrial Relations Group again was assigned the responsibility of organizing the Red Cross drive conducted throughout this works. Considerable time was spent in obtaining the various department chairmen and distributing the necessary material to those individuals selected.

Arrangements were also made during the past month for the distribution of the rating forms for all weekly payroll employees to the various departments.

During February the Industrial Relations group also organized the U.S. Savings Bond drive for the entire plant. Payroll deduction authorization blanks were distributed to all employees not already participating in this savings plan.

From February 9 to 20, inclusive, a representative of the Department of Internal Revenue was available to plant employees to assist them in their income tax problems. This representative was located in the Personnel Division Building during this period.

1. Suggestion System

At the end of February the volume of work in the Office of the Secretary of the Suggestion System was as follows:

	Jan.	Feb.	Total Since 7-15-47
Suggestions received and acknowledged	141	143	1,754
Investigation reports completed	301	235	1,453
Awards granted by the Suggestion Committee	26	9	82*
Cash Awards	$295	$115	$895

* To correct two awards that were granted by the Suggestion Committee during the month of December and not included in the total.

Suggestion System award stories were carried in the February 6 and 27 issues of the Works NEWS. In addition, an educational meeting was held with a group of Maintenance Department employees in the 100-F Area to explain this system in more detail.

2. Insurance Coverage

A. Information concerning the coverage afforded by the Travelers Liability Policy with respect to mal-practice insurance coverage for doctors and dentists at this works was received from the Travelers Underwriting Secretary. This information reflected that this policy was sufficiently broad enough to cover all such suits involving doctors where their activities are confined to work for the company.

Service Department

B. A preliminary report on the fire which occurred in the North Richland barracks on February 21 was forwarded to the Travelers Insurance Company in order that investigation might be made to determine if any liability exists.

C. Mrs. L. B. Russell, Claim No. B-6194056...The Insurance Adjustor of the Travelers Insurance Company has recommended a settlement of between $2,800 and $3,500 in this case, which was brought about by the fall of the claimant due to a defective step in the house of a neighbor on this project. This recommendation is presently under consideration by company and A.E.C. authorities.

2. Life Insurance

Code information for use by insurance companies in issuing insurance to employees on this project was furnished to 33 insurance companies and investigation agencies during February.

3. Compensation

A. James Darling, Claim No. 9000439...Information was received from the Department of Labor and Industries that the pension granted this employee on January 20, 1948, would remain in effect as it was their feeling that the additional medical examination requested by this company would not reveal additional evidence sufficient to reverse the pension order.

B. James Robeson, Claim No. 8000212...Information was furnished the Department of Labor and Industries that this claimant had received compensation payments during his vacation period, indicating a possible over-payment. The Department replied that it is their policy to pay State Compensation even though the claimant is receiving vacation or sick-leave benefits from his employer.

C. John Geiger, Claim No. 8000207...A request has been made by the Company Attorney for the Department to review their original opinion on this case which indicated that it was a componsable fatality. No reply has been received to date.

D. Cephas Williams, Claim No. 9001733...This claimant was originally injured on December 26, 1947, and the injury diagnosed, upon his admittance to the hospital, as a back strain. The claimant was discharged from the hospital on January 12, 1948, and re-admitted on January 15. It was subsequently ascertained that bacterial endocarditis developed, and as a result the claimant died on February 4, 1948. Allowance of the claimant has been opposed due to the fact that the autopsy revealed that death was due to bacterial endocarditis, rather than the back strain.

E. A request has been made of the Department of Labor and Industries for our dentists to be permitted to proceed with dental work immediately after the injury and that prior authorization of the Department to administer such treatment be waived. This request was made inasmuch as it was felt that the Medical Department can render the injured workmen an improved service and also because the Department does not reimburse the company for such service.

[redacted]

Service Department

Public Relations

Effective February 1, the Women's Activities Section has been transferred to the Public Relations Division.

On February 1, Public Relations services for the Municipal Administration Division were discontinued, this being consistent with the intent to segregate, in so far as possible, the operation of the Village from the operation of the plant.

The Progress Edition of the WALLA WALLA UNION BULLETIN was published on February 22. Considerable material for the Tri-City section of this publication was contributed by the Public Relations Division.

Speaking engagements filled by individuals from this works during the past month were as follows:

2-12	A.I.E.E.	Seattle, Washington	C. P. Cabell
2-25	Lions Club	Spokane, Washington	B. R. Hennigar

A member of the Public Relations Division accompanied these individuals in order to handle the press releases.

Six general news releases were made to all daily newspapers in the Northwest during the past month. These news releases were as follows:

1. Announdement concerning the moving of 200 prefabricated houses from Puget Sound Navy Yard to North Richland.

2. Appointment of H. M. Parker to position of Superintendent of Health Instrument Department.

3. Announcement of letting of contract for construction of 1,000 new homes in Richland.

4. Announcement of transfer by du Pont Company, of 25 engineers to the office of Construction Project Engineer for temporary service in connection with current construction programs.

5. Announcement of the appointment of J. S. McMahon to position of Superintendent of Project Engineering Department.

6. Announcement of letting of contracts to operators of three businesses in North Richland.

Service Department

Arrangements were made during the past month for R. S. Neblett, Administrator of the General Electric Nucleonics Project, to be interviewed by a representative of the SPOKANE CHRONICLE.

Two booklets were prepared by the Public Relations Division for use by the Realty Division in discussions of current plans and construction activities in connection with the housing program in Richland. These booklets included photographs, floor plans, specifications, and material on all houses in Richland including those now under construction.

Four general news releases were made to the VILLAGER and TRI-CITY HERALD during the month of February.

Final arrangements for the presentation of the G.E. "House of Magic" during the month of March were made in the past month. The demand for tickets to this presentation was so great that it was necessary to schedule additional performances each night. Distribution of tickets for these additional performances have already been made. Arrangements were also made, at the request of the Advertising and Publicity Department in Schenectady, for presentation of the "House of Magic" at the Prosser High School on Saturday, March 20, in connection with the Science Fair being held there during that week.

Four issues of the Works NEWS were published during February, "Candid Camera" and the rotogravure supplement being inserted in the February 27 issue.

Women's Activities

Final arrangements have been made for another beginners' shorthand class to start the first week in March. Advanced shorthand classes are also being planned for the same time, if enough individuals enroll. A tuition for the nine-weeks course is $3.50, and the classes are to be held in the Employment Building one night each week, under the supervision of Roberta K. Baker, Instructor.

During the month of February, 111 women were given the special orientation for women. Seventeen typing and 6 shorthand tests were also given during the month.

A total of 169 telephone calls were received by the Women's Activities Section from individuals desiring rides or riders for week-end and vacation trips. There is a continued demand for transportation to Seattle, Portland and Spokane. Approximately 80% of the requests were filled.

Six women employees contacted the Women's Activities office for information and counseling during the month of February.

Education and Training

A trip was made to the University of Oregon and Oregon State College at which time it was ascertained that the University of Oregon will nominate their liaison officer,

to cooperate with the educational program here, very shortly. It was learned during this visit that the Oregon State College interprets their residence requirements to include those students who will be doing their graduate work on this project.

During the past month, Dr. L. C. Cady, Liaison Officer for the University of Idaho, together with Dean S. E. Hazlett and Doctors S. T. Stephenson and J. L. Culbertson of the University of Washington, visited Richland to interview and enroll those graduate students who will be doing their graduate work here in the Nuclear School of Engineering. President R. B. Allen of the University of Washington visited Richland during the past month and conferred with the Education and Training Division concerning cooperation between their institution and the School of Nuclear Engineering.

Present prospects indicate that the enrollment for the spring term will be very light. It is believed that this light enrollment can be attributed to the seasonal change, anticipation of spring-time activities and conflicts with late spring and early summer vacations.

During the month of February, 56 new Supervisory Conferences, including approximately 650 members of supervision at this works, were started. These groups were scheduled so that shift supervision could attend while on the day shift. The first two meetings of these groups were considered as introductory meetings, with a member of the Staff Group giving introductory remarks on behalf of the Manager.

STATISTICS

Employment and Investigation

Number of employees on rolls	1-31-48	2-29-48
Exempt	1,457	1,500
Non-Exempt	6,063	6,178
Total	7,520	7,678

Service Department

ADDITIONS

	Exempt	Non-Exempt	Total
New Hires	34	235	269
Re-employs	-	3	3
Reactivations	-	8	8
Transfers from Other Plants	9	0	9
Net Additions	43	246	289
Payroll Exchanges	16*	-	16
Gross Additions	59	246	305

TERMINATIONS

	Exempt	Non-Exempt	Total
Actual Terminations	13	96	109
Removals due to extended leaves	3	19	22
Payroll Exchanges	-	16**	16
Gross Terminations	16	131	147

Approximately 93% of all actual terminations were on a voluntary basis and most of these were for the following reasons: (a) Another job, (b) housing and (c) to remain at home.

GENERAL

	1-48	2-48
Applicants interviewed	2,220	1,774
Photographs processed	4,112	5,135
Fingerprint impressions taken (in duplicate)	517	456
Procurement letters written	2,008	1,661

ABSENTEEISM STATISTICS*** (Weekly Salary Roll)

Male	2.09%	3.24%
Female	3.17%	4.17%
Total Plant Average	2.33%	3.45%

9

* Transferred from Weekly Salary Roll.
** Transferred to Monthly Salary Roll
*** Statistics furnished by Weekly Payroll Division

Service Department

INVESTIGATION STATISTICS

	1-48	2-48
Cases pending at beginning of month	2,340	1,977
Cases received during the month	415	420
Cases closed	778	770
Cases pending at month-end	1,977	1,627
Number found satisfactory for employment	305	288
Number closed before investigation completed	9	8
Number found unsatisfactory for employment	9	6
Special investigations conducted	97	238

Compensation and Insurance

Claims

	Reported in February 1948	Reported in January 1948	Total Since Sept.1,1946
Workmen's Compensation	73	58	307
Liability	21	7	114
Handled for du Pont	0	0	

Compensation Payments Approved (Department of Labor and Industries)

	January 1948		December 1947		Total Since 9-1-47
	No. of Claims	Amount	No. of Claims	Amount	Amount
Medical Aid	4	$ 73.24	3	$ 260.24	$ 7,793.39
Accident Fund	20	3,019.00	15	2,064.75	56,393.73
Pension	24	1,177.07	24	1,183.07	23,221.87

Liability Payments Approved (Travelers Insurance Company)

None Received

[redacted]

Service Department

PROTECTION

SAFETY & FIRE PROTECTION

Safety

Plant Safety Record - 23 days

Injury Statistics

	January	February	Year to Date
Major Injuries	1	1	2
Non-Tabulatable Major Injuries	0	0	0
Sub-Major Injuries	2	4	6
Minor Injuries	458	390	848

Major Injury No. 45

February 6, 1948 - , a housemother in the Service Department, sustained a sprain of the left wrist and a hip and pelvic injury. Injured was assigned to make a routine check each night between 12:01 A.M. and 1:30 A.M. of all women's dormitories to determine if house rules and regulations were being complied with. This check requires the assistance of a patrolman for any eventuality that may arise. While making the check, injured slipped to blacktop roadway so quickly that patrolman was unable to catch her. The roadway was covered with a thin sheet of ice. Injured was hospitalized on 2-20-48.

Sub-Major Injury No. 105

February 2, 1948 - , an employee of the Service Department, Municipal Division, sustained a fracture of eleventh rib, right side. Injured was loading empty crates into a truck, and his feet slipped out from under him. As he fell, his back struck the edge of a heavy crate that was frozen in the ice.

Sub-Major Injury No. 106

February 10, 1948 - , an employee of the P Department in the 300 Area, sustained a chip fracture of first finger, right hand. Injured was engaged in removing a box of rework material from the roller conveyor at the machining lathes. A fellow worker pushed the line of boxes in the direction of the injured. The injured saw the boxes coming and removed his left hand in time, but was unable to remove his right hand.

Sub-Major Injury No. 107

February 18, 1948 - , an employee of the Electrical Department in the 1100 Area, sustained a fracture of the right third toe, distal phalanx. Injured and a fellow employee were unloading standard distribution cross arms from a trailer at the pole yard. The fellow worker, unaware that the injured was standing close behind him, pulled a cross arm out of the

end of the trailer endwise and allowed the end in his hand to drop to the ground in order to secure the arm in a balanced position before carrying it to the stock pile. The end of the cross arm landed on the injured's toe.

Sub-Major Injury No. 108

February 20, 1948 - , an employee of the Maintenance Department in the 700 Area, sustained a fracture of the left middle finger. Injured was assisting Power Department operator in opening steam pit preparatory to opening steam valves in the pit. Just as the plate came within three inches of resting on the curbing, the operator turned loose his end without warning, and before injured could turn his end loose, the tip of his left middle finger was caught between the curbing and the steel plate.

Safety Meetings - There were 712 Safety Meetings held during the month of February, with a total attendance of 9,482.

Safety Spectacles - Orders were placed for 53 pair prescription safety spectacles; 57 pair were received, checked and fitted; and 60 adjustments and repairs were made to all types of safety spectacles.

Exposure Hours - There were 1,222,725 exposure hours from January 31, 1948, to and including February 29, 1948.

Activities

100 Areas

The Safety Office in the 100 Areas is now issuing a new monthly safety report of the cause analysis type which it is believed will be more helpful to supervision in preventing recurrences of injuries.

The 100-D Area has launched a new Area Accident Prevention Program, whereby both weekly roll people and supervision can participate. Members from each department will serve for one month and act as safety monitors in their respective departments.

Plans for the 100-D Area Safety Award Program have been completed, and it will be held March 11, 1948, at 3:20 P.M.

200 Areas

The 200-East Area completed two years without a major injury on October 15, 1947. The ceremony was held February 18, 1948.

Two near serious incidents were investigated during the month in 200-West Area.

Service Department

300 Area

The problem of Maintenance employees breaking through the transit ceiling in Building 3706 became acute. Additional flooring has been placed in the attic; also, plywood boards have been made available for use as temporary flooring when permanent flooring seems inadvisable.

Information has been gathered through a survey as to the possibility of using litharge and glycerin for the construction and maintenance of gas service lines in Building 3706. It is recommended that litharge and glycerin should be used on gas service lines, especially oxygen lines. The use of this material is still prohibited in the construction and maintenance of all drain lines because of the possibility of nitration of the glycerin.

A study of the new equipment in the 303 Area has brought to light that, because of the type of electrical installations in the Melt Plant, it is possible to energize the coils of a supposedly "down" furnace while men are working in or around it. Work orders have been issued to prepare switches involved so that they can be locked out while the furnace is down. Job procedure will include lock out instructions.

At the request of the Area Electrical Department, a study has been made of the possibility of eliminating the third or ground wire on the following equipment: clocks, soldering irons, desk lamps and calculators.

700 & 1100 Areas

Instructions have been issued to all Safety Engineers to comply with recommendation of Central Safety Council pertaining to orientation of new employees.

Upon the recommendation of the State Public Health Department, a Richland School District Health Council has been organized with the following safety objectives:

A. To promote a planned program for care of accidents and sudden illness in the schools.

B. To assist in carrying over the health and safety education of the child into the home in creating better living conditions.

C. To integrate the school safety program with that of the community.

General Electric Safety and Health representatives are members of the Council.

[redacted]

SAFETY DIVISION - INJURY AND ACTIVITY STATISTICS

	300 Area	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	700-1100 Areas	Hanford Area	3000 Area	Pasco Area
Minor Injuries	80	9	16	31	43	71	118	1	18	3
Sub-Major Injuries	1	0	0	0	0	0	3	0	0	0
Major Injuries	0	0	0	0	0	0	1	0	0	0
Days since last Tabulatable Major Injury	137	1941	395	1041	108	780	25	335	213	213
Days since last Sub-Major Injury	19	41	565	131	81	445	9	335	86	139
Days without a Minor Injury	8	22	17	12	8	5	6	28	15	26
Safety Meetings Conducted	83	45	57	57	78	98	272	6	-	16
Number in Attendance	899	244	598	479	764	1099	5208	47	-	124
Safety Spectacles Delivered	9	4	5	13	2	6	17	1	0	0
Safety Spectacles Serviced	8	-	-	-	15	37	-	-	-	-

MONTHLY INJURY ANALYSIS

Period - February 1 through February 29, 1948

Minor Injuries

	Misc. Burns	Abrasions	Contusions	Lacerations	Punctures	Splinters	Strains & Sprains	Foreign Body	Blisters	Unclassified	TOTAL FEBRUARY	TOTAL LAST MONTH
Production P	10	7	3	1	0	1	0	1	0	0	23	22
Production S	2	4	2	0	1	0	0	0	0	0	9	14
Technical	8	8	1	13	1	3	1	0	1	1	37	44
Power	4	1	1	4	1	1	4	2	2	0	20	15
Maintenance	12	27	15	26	8	14	12	10	3	3	130	160
Electrical	1	5	2	8	2	3	0	3	0	2	26	18
Instrument	2	5	0	5	1	0	1	1	0	0	15	20
Service	2	7	3	6	3	5	7	6	0	0	39	53
Transportation	2	7	6	9	0	2	5	4	1	0	36	48
Medical	1	3	3	13	2	2	3	0	0	1	28	32
Accounting	0	1	1	7	0	2	3	0	0	1	15	23
Design & Construction	1	2	1	1	0	0	0	0	0	0	5	9
Health Instrument	0	1	1	3	0	2	0	0	0	0	7	0
TOTAL	45	78	39	96	19	35	36	27	7	8	390	
LAST MONTH	53	110	48	112	33	28	24	18	12	20		458

Service Department

Fire Protection

Fires	Number of Fires		Estimated Damage	
	January	February	January	February
Plant Area	3	10	No Damage	No Damage

All fires in the Plant Area were of a minor nature and no damage was experienced.

Routine Duties

Fire Extinguishers

Inspected	1,896
Installed and Relocated	153
Refilled	48
Repaired	0

Gas Masks

Inspected	83
Serviced	3

Fire Drills and Lectures

Outside	12
Inside (House Drills)	96
Auxiliary Brigade	27
Safety Meetings	19

Water Barrels

Installed	29
Refilled	0

All fire alarm boxes in the industrial areas were tested.

All fire hose houses, hydrants, and lines in plant areas were inspected and hydrants flushed.

New fire hydrants were installed and put into service in the 105-DR Construction Area.

[redacted]

Service Department

CONSTRUCTION SAFETY

Atkinson-Jones Construction Company

Injury Statistics

Number of exposure hours for month of February, 1948 - 1,784,854.

	January	February	Frequency	Severity
Major Injuries	12	9	5.04	.339
Sub-Major Injuries	41	50		
Minor Injuries	973	1101	6.17	

Accumulative major injury frequency rate	6.12
Accumulative major injury severity rate	.261
Number of days since last tabulatable major injury . . .	1
Number of days since last sub-major injury	2
Number of days without a minor injury	2

Major Injury No. 44

Injured was working on erection of forms in Area A. He was kneeling on top of form, facing outside edge, attempting to remove a nail. He placed his claw hammer on a nail protruding from a brace about one inch below top of form. Claws on hammer were pointing upward, handle being pushed. As more pressure was applied, hammer head twisted and injured toppled forward, unable to regain his balance. Injured struck the ground about eight feet below, landing on his lower back, stood up and then fainted. As he fell to the ground the second time his face struck side of the form.

Major Injury No. 45

Injured and fellow workman were on top of a lumber stack, eight feet wide and eight feet high. They were helping to stack lumber with a crane, their job being to signal crane operator on placement of load and to unhook sling. Crane operator was swinging a sling load, which was four feet wide, into position to go on far side of stack away from crane. Operator swung load into place on far side of pile without waiting for men to signal, and he could not see the men because of sling load. The usual procedure was for men to move into operator's view before sling was placed. Sling load crowded both workmen off lumber stack. Fellow workman received only minor injuries. Injured fell eight feet and struck frozen ground.

Major Injury No. 46

Injured's job was firing barrels to cure cement. He was crossing trailer camp area and stepped into a ditch about four feet deep and four feet wide. Injury was contusion and laceration above left eye.

Service Department

Major Injury No. 47

Injured had a crew of men grading and backfilling on a water line. There was a 50 gallon drum sitting by the line with wood burning in it, and it was used by the men to warm their hands. Injured was standing about ten feet from the drum when the wind blew a small piece of burning wood into his right eye.

Major Injury No. 48

Injured was crossing on a 2" x 12" x 14' plank which was laid from the ground level to the top of basement concrete forms. The plank broke where there was a large knot and injured fell about five feet to the ground, causing sprain of left ankle and possible low back strain.

Major Injury No. 49

Injured was on top of sling load of lumber which was resting on the ground. His job was to hook up rigging for crane. As he stepped from the sling load, which was about four feet high, to the ground, he stepped on a rock. This caused him to lose his balance and fall to the ground, resulting in a contusion of the right knee.

Major Injury No. 50

Injured was attempting to repair kerosene burner he had taken outside. He had no light to work by and had poured kerosene in the sand and ignited it to provide a light. A strong wind blew the flames against the injured's trousers, which had previously had kerosene spilled on them, and ignited the trousers. Injured attempted to put out flame with his hat and then smothered them with his coat, causing first and second degree burns on hands and second and third degree burns on left leg.

Major Injury No. 51

Injured was working on a rafter notcher, using it as a shaping tool. He had shut off motor preparing to make new set-up. Six bladed wheel had not stopped turning. He leaned and reached to rear of machine with right hand to loosen nut; left hand resting on top of slick table. As he attempted to loosen nut, left hand slid and slipped into the bladed wheel. He wore leather gloves which caught onto the blades.

Major Injury No. 52

Injured and three other workmen were carrying a pre-fabricated soil pipe into a wash room. Pipe was 4" x 20' long and weighed approximately 425 pounds. About three feet inside of washroom door there was an excavation about three feet deep. Injured stepped about one and a half feet from edge of excavator and it caved away, causing injured to fall. He did not drop pipe when he fell and twisted his right leg.

[redacted]

Service Department

Sub-Major Injury No. 88

Injured was removing a bearing from a D-7 caterpillar. He reached under the motor to opposite side to remove nut that was holding bearing. Wrench slipped off nut and caught finger between wrench and block.

Sub-Major Injury No. 89

Injured and fellow workman picked up 1" x 8" x 12' board from a saw horse. Fellow workman lost hold on his end of board, which fell and struck cement floor. This caused injured to loose his hold on board, which fell edgeways across his right foot.

Sub-Major Injury No. 90 - Incomplete

Sub-Major Injury No. 91

Injured was driving a Diamond T dry mix batch truck through batch plant area. Front wheel of truck struck a rock, causing steering wheel to spin, catching hand between spokes of wheel.

Sub-Major Injury No. 92

Injured and three other workmen were stacking pallets. Workmen were lifting pallets, which weighed about 100 pounds each, from the ground and stacking them approximately six feet high. Ground was covered with snow. As injured was helping lift one of the pallets his foot slipped on the snow, causing him to fall on his left knee.

Sub-Major Injury No. 93

Injured was trimming off corner on a 1" x 14' piece of sheathing with a two-pound hand ax. His position was about halfway up roof and he was working on sheathing already in place. He was working in a squatting position and chopping with right hand, approximately one foot from knee. Injured stated he struck a knot or twisted grain in the wood, which deflected the ax, causing it to strike his knee.

Sub-Major Injury No. 94

Injured was using an eight pound hammer to force a boot for a ripper tooth. Boot had been heated and was being forced on ripper tooth. Injured swung at the boot, which was on a table about two and one-half feet high. Hammer slipped from his grasp and struck right toe.

Sub-Major Injury No. 95

Injured was working on top of shiplap stack which was about twelve feet high, his job being to unhook sling and place load. Top of lumber pile was wet and slick and as he was moving his foot slipped. Injured grasped a 2" x 4" which protruded about four feet above stack and was used as a spacer between stacks. The 2" x 4" broke and twisted sideways, causing injured to fall about twelve feet to the ground, landing on hip and elbow.

Service Department

Sub-Major Injury No. 96

Injured was replacing tools against the warehouse wall, having used the tools in cleaning the floor. A large wrecking bar which was leaning against the wall fell and struck his heel.

Sub-Major Injuries Nos. 97 and 98 - Incomplete

Sub-Major Injury No. 99

Injured was unloading asbestos shingles. Truck bed was approximately four feet high. He was removing a bundle of shingles from the truck bed and shingles slipped from his grasp. As he reached to grasp the bundle he struck his left hand against side of truck bed.

Sub-Major Injury No. 100

Injured and fellow workman were restacking lumber, which was 6" x 10" and 12' to 16' in length. Stack was about 2-1/2 feet high and timbers were covered with ice. As injured placed one end of timber on stack, his thumb was caught between it and another timber in the stack.

Sub-Major Injury No. 101

Injured was working on ground, carrying a 1" x 12" x 16' board to be used in the sub-floor. One end of board was blown against the foundation of the house by the high wind and board kicked back, striking injured.

Sub-Major Injury No. 102

Injured was helping stack wallboard being unloaded from a truck. He was working on the ground and wallboard was passed to him by fellow workmen on the truck. Wallboard was approximately 3/8" x 4' x 8'. Stack was about 8' from truck and about 2'6" high. Injured had hold of end on piece of wallboard and workers in truck shoved board toward him. Injured's fingers were caught between stack and wallboard he was holding.

Sub-Major Injury No. 103

Injured was giving signals to an "A" frame operator, hoisting acetylene tanks. Tanks were being hoisted in groups of threes. As operator started to lift tanks, one of them slipped out of the choker, rolled on the ground and then struck injured's foot.

Sub-Major Injury No. 104

Injured was working in a crew of twelve men, unloading bags of crack filler from a box car. Bags weighed about 30 pounds each. Men were standing about six feet apart and bags were relayed from one to another. The men were too far apart to pass bags and they were pitching them from one to another. As injured attempted to catch one of the bags, it struck his thumb.

Service Department

Sub-Major Injury No. 105

Injured and fellow workman were digging a hole for a brace on a steam line pole. A pick was being used to break frozen ground. As pick struck a rock, one of the rock fragments flew up and struck the injured.

Sub-Major Injury No. 106

Injured and two other men were unloading lumber from a gondola type car with a crane. They were using a crowbar to raise stacks to get sling under. This had been laid on top of other stack. Sling was placed on stack, and as it was being raised slingload struck crowbar, knocking it off and striking injured's foot.

Sub-Major Injury No. 107

Injured ascended ladder to metal platform to inspect hoppers on pumporete machine before setting it in motion. As injured stepped on metal platform his feet slipped and caused him to pass under handrail and fall to the floor below.

Sub-Major Injury No. 108

Injured was cutting a piece of sheet rock on a table. As he snapped the sheet rock, one piece fell toward the floor. Injured grasped it and caused a sprain to his thumb.

Sub-Major Injury No. 109

Injured was moving part of metal scaffold to make room for postholes. He was holding scaffold on end, one hand on each side. As he gave it a push forward, the lower end struck a 2" x 10" x 16' that was lying on the ground, causing scaffold to kick back and strike injured on the toe.

Sub-Major Injury No. 110

Injured and fellow workmen were digging a ditch about three feet deep for a water line. Injured was using a pick, which struck a rock about eight inches in diameter. The pick glanced off, causing the handle to twist in his grasp.

Sub-Major Injury No. 111

Injured was repiling $1\frac{1}{2}$" x 20' pipe on new bunk beds. Original pile had been unloaded and was not piled in a proper manner. Injured grasped one pipe to dislodge it from the pile. The pipe turned in the pile, and the injured's finger was caught between it and another pipe.

Sub-Major Injury No. 112

Injured was working with two inch soil pipe, which was on work bench. Pipe and fittings weighed about 100 pounds. Injured pulled the pipe toward him to stand it on the floor. The pipe slipped from his grasp and the end of it struck injured's right toe.

Service Department

Sub-Major Injury No. 113

Injured and helper were restacking plywood lumber. The wind blew a piece of plywood 1/4" x 2' x 8' from another pile about 15 feet from where injured and helper were working. Plywood struck injured on the right temple.

Sub-Major Injury No. 114

Injured and fellow worker were working in machine shop, attaching a generator to a converted motor. Generator was hanging on a chain hoist. Injured was attempting to line the generator with two studs on the motor. The fellow workman had a wrench on coupling at rear of generator. As injured reached part way into generator to start nut on stud bolt, the workman at rear gave wrench a turn to align generator. The inner fin on generator turned and caught injured's finger between it and the stud bolt.

Sub-Major Injury No. 115

Injured was preparing to move 12 inch water pipe (pipe to be moved by crane). The pipe was in the ground and was being raised to put a cable around it. Injured was hooking a hook on end of pipe when crane operator raised the hook. Injured's hand was pulled against the block, catching it between the cable and block. He was grasping cable between the hook and block.

Sub-Major Injury No. 116

Injured was helping with crane to unload shiplap from railroad cars. As he was reaching to grasp choker, he struck his hand against the end of a 1" x 6" x 16' shiplap.

Sub-Major Injury No. 117

Injured was wheeling cement into warehouse on a hand truck. As he started up the ramp from the outside dock into the warehouse, he tripped over a piece of curled-up metal that was part of the floor. He fell forward and struck his mouth against the hand truck handle.

Sub-Major Injury No. 118

Injured entered tool house to get a sledge hammer. Hammers were stored in a bin in a poor manner. He attempted to pull one of the sledge hammers from the pile with his right hand. One of the hammers in the pile fell against injured's right hand that was grasping the handle.

Sub-Major Injury No. 119

Injured was driving a lumber carrier through lumber yard. The carrier's front wheels struck a large rut jarring the carrier. His head struck the top of the cab.

[redacted]

Service Department

Sub-Major Injury No. 120

Injured was using a jack hammer to drill in a hole about 2½ feet deep. Handle of jack hammer was level with the ground surface. Injured had finished drilling and gave jack hammer a quick jerk to remove it from the hole. As he jerked the jack hammer upward he noticed a sharp pain in his right side. Injured carried jack hammer a short distance and lifted it onto a truck bed. At this time he noticed the pain again.

Sub-Major Injury No. 121

Injured was starting to restack 3" x 8" x 16' planks. Stack was about two feet high. He grasped top plank which protruded from end of pile about twelve inches. The plank was frozen to others in the stack, and as injured raised the added weight, he noticed a pain in his back.

Sub-Major Injury No. 122

Injured was attempting to drive a dresser ring onto the end of an eight inch water main. He was holding the ring with his left hand. The hammer struck the end of the water main, glanced off and struck his left thumb.

Sub-Major Injury No. 123

Injured and fellow workman were inside truck bed attempting to fasten chains on top of tail gate. Gate apparently was not hooked properly at bottom. The gate dropped and a piece of protruding metal on top of gate struck injured's toe, which was against inside of gate, catching it between the gate and the truck bed.

Sub-Major Injury No. 124

Injured was descending from the attic on a 12 foot step ladder. As he stepped from the last step to the floor, he stepped on edge of a 2" x 4" and turned his ankle.

Sub-Major Injury No. 125

Injured was standing on a 1" x 6" x 4' board that was lying on soft dirt. He was attempting to strip a 2" x 4" x 4' from a box form on the bottom of a pillar. The 2" x 4" was about eight or ten inches above ground level. As injured swung with a claw hammer to strike the 2" x 4", the board he was standing on turned in the soft dirt, throwing him off balance. Injured missed the 2" x 4" and struck his left leg.

Sub-Major Injury No. 126 - Incomplete

Sub-Major Injury No. 127

Injured was nailing a 2" x 4" header in between two studs. Injured was standing on a concrete floor and header was being nailed in about five feet above floor level. As he swung to strike the nail, the claws of the hammer struck one of the studs and glanced off, striking injured's thumb.

[redacted]

Service Department

Sub-Major Injury No. 128 - Incomplete

Sub-Major Injury No. 129

Injured had ascended to roof to lay roofing paper. As he was about one foot from the roof's edge, he slipped and fell backward to the ground. Edge of the roof was about ten feet from the ground.

Sub-Major Injury No. 130

Injured and partner were repiling 4" x 6" x 12 to 16' timbers. The maximum height of piles was four feet. Pain was not mentioned to foreman until late afternoon.

Sub-Major Injury No. 131

Injured was standing on the floor cutting a door header. Fellow workman was standing on a saw horse driving a nail into a stud overhead. His hammer struck a ceiling joist back of him; he lost his grasp on the hammer, and it struck the injured on the nose.

Sub-Major Injury No. 132

Injured was digging post holes with a spud bar. Holes were being dug about 24" deep and ground contained several rocks. Injured states he does not know of any instance in which his wrist was sprained. Pain gradually increased and injured reported to First Aid.

Sub-Major Injury No. 133

Injured was working on an eleven foot scaffold receiving lumber passed to him from workman on truck below. Lumber was 1" x 8" x 16' - 18' and was passed up to injured two at a time. Injured grasped the boards by one end as fellow workmen shoved them, catching injured's finger between the boards and a protruding rafter.

Sub-Major Injury No. 134 - Incomplete

Sub-Major Injury No. 135

Injured was rearranging acetylene cylinders which were stacked horizontally in the back of a truck. Cylinders were stacked about two feet high. Injured was standing at the end of the stack when he grasped the cylinder on top of the stack to set it on the floor of the truck bed. As he pulled the cylinder out, he lost his grasp on it and it fell, striking his left foot.

Orientations

There were 97 orientation lectures, with a total attendance of 2,232.

Safety Meetings

There were 448 Safety Meetings held, with a total attendance of 7,009. There were 2 safety meetings held for supervision, with an attendance of 5[redacted]

Service Department

Activities

The accumulative accident frequency rate continues to decrease. The cooperation of field supervision with the safety program has been good.

G.E. Safety Division Activities

Daily safety inspections and resultant recommendations have been made in all construction areas.

Ninety seven safety orientation lectures were given during the month.

Tank installations and the cabs of heavy equipment were tested for flammable and toxic fumes.

Comprehensive investigations have been made of eight major and fifty sub-major injuries.

The safety news, "The Green Cross", was printed and distributed weekly.

J. L. Hudson Company

Injury Statistics

Number of exposure hours for month of February - 21,523.

	January	February	Frequency	Severity
Major Injuries	2	0	0.0	.929
Sub-Major Injuries	1	2		
Minor Injuries	30	13	6.04	

Accumulative Major Injury Frequency Rate	20.04
Accumulative Major Injury Severity Rate	.292
Number of days since last tabulatable major injury . . .	34
Number of days since last sub-major injury	9
Number of days without a minor injury	18

Sub-Major Injuries Nos. 4 and 5 - Incomplete

Morrison-Knudsen Company, Inc.

Injury Statistics

Number of exposure hours for month of February - 73,486

	January	February	Frequency	Severity
Major Injuries	0	1	13.61	.014
Sub-Major Injuries	0	2		
Minor Injuries	76	84	11.43	

Service Department

Accumulative Major Injury frequency rate	7.04
Accumulative Major Injury severity rate	.007
Number of days since last tabulatable Major Injury	1
Number of days since last sub-major injury	8
Number of days without a minor injury	7

Major Injury No. 1

While injured was applying belt dressing to a moving pulley of an aggregate conveyor, his hand and arm were suddenly drawn into belt and pulley.

Sub-Major Injuries Nos. 1 and 2 - Incomplete

Safety Meetings

There were 50 Safety Meetings held, with an attendance of 904. There were 2 Safety Meetings held for supervision, with an attendance of 51.

Activities

Satisfactory progress has been made in the safety program on the construction site. However, one major injury and two sub-major injuries occurred.

Safety meetings are being held and necessary information given to all personnel on the job.

Poster publicity, "The Green Cross", and frequent contact with personnel on the site have aided considerably in the progress of the safety program.

Supervision of this project has given good cooperation in safety matters.

C. C. Moore & Company

Injury Statistics

Number of exposure hours for month of February - 4,460.

	January	February	Frequency	Severity
Major Injuries	0	0	0.0	0.0
Sub-Major Injuries	0	0		
Minor Injuries	0	8	17.94	

Number of days without a minor injury - 23.

Safety Meetings

There were 4 Safety Meetings held, with an attendance of 132.

[redacted]

Service Department

C. C. Moore & Company - Activities

Recommendations based on daily findings of inspectors have been accepted with willingness and corrections made satisfactorily.

Safety meetings are held as scheduled and reported promptly.

The job has been kept quite clean and safe by supervisory personnel, and the entire safety outlook is a healthy one.

J. A. Terteling & Sons

Injury Statistics

Number of exposure hours for month of February - 15,461.

	January	February	Frequency	Severity
Major Injuries	0	0	0.0	0.0
Sub-Major Injuries	0	0		
Minor Injuries	0	6	3.88	

Number of days without a minor injury - 25

Safety Meetings

There were 4 Safety Meetings held, with an attendance of 68.

Activities

The safety program of this project has progressed satisfactorily. There has been cooperation from supervision in compliance with recommendations and regulations.

Inspections are being made daily and corrective measures taken where necessary.

In general, the overall progress of the safety program has been good.

Service Department

GENERAL DIVISION

Laundering volumes were as follows:

Plant Laundry (Building 2723)	January	February
Coveralls - Pieces	20,069	19,293
Towels - Pieces	5,576	5,221
Miscellaneous "	41,826	38,966
Total Pieces	67,471	63,480
Total Dry Weight - Lbs.	97,073	88,909
Richland Laundry (Building 723)		
Flatwork - Pieces	121,107	121,962
Rough Dry- "	36,035	29,172
Finished - "	4,595	4,327
Total Pieces	161,737	155,461
Total Dry Weight - Lbs.	105,129	100,049

Both 2723-W and 723 laundries show a decrease due to the short month.

A large three-compartment dryer was procured from the excess equipment at Pasco and installed in the 2723-W Laundry. Although cramped for space, this dryer should solve the drying problem for the present time.

The 723 Laundry is operating at full capacity. Help has been requisitioned and plans made to add a third shift some time in March.

Janitor Service

Effective February 1, 1948, all janitor service for North Richland was transferred to the Realty Division.

CLASSIFIED FILE

During the month of February, work proceeded as usual, with an approximate increase of eleven per cent in work load as indicated by the following statistic:

	January	February
Classified Documents Received & Issued	1,166	1,418
Unclassified and Restricted documents received	7,130	8,253
Classified Documents Issued	3,167	3,238
Inter-Area Transfer	6,084	6,130
Yellow Copy Transfer - Pittsfield	1,424	1,461
Documents Routed	4,911	5,746
Requests for File Documents	2,048	2,340
Documents Transmitted to AEC for Retransmittal Offsite	70	369
	26,000	28,955

Service Department

PATROL AND SECURITY

General

Effective February 1, 1946, the Hanford Works Patrol was separated into two units. One part, known as the Municipal Patrol, under the jurisdiction of H. W. Strock, Chief Supervisor, contains personnel assigned to the following sections:

Administration Section
Richland Village Patrol
North Richland Area
Columbia Camp
Traffic Section
Crime Prevention Section

The balance of Patrol will report to T. B. Farley, Chief Supervisor of the Security Division. It will continue to be known as the Plant Protection Patrol and will include the following sections:

Industrial Areas
Administration Section
Pasco Depot
Hanford Ferry and Barricades
700 Area
Emergency Officers
Richland Airport
Desert, Mountain and Outer Area Patrols

For the present time the Administration Section, comprised of the Automotive Equipment, Supply and Records Sections, will operate for both divisions. The Prosser Barricade will be manned and supervised by personnel assigned to the Columbia Camp Area.

The Emergency Sergeants, in addition to their present duties, will supervise the 700 Area and Richland Airport. They will cooperate with members of the Security Division in various duties.

Personnel assigned to the Pasco Depot Patrol will be under the jurisdiction of the 300 Area Patrol.

The River Patrol will work out of the 100-F Area, the Mountain Patrol from the 200-West Area, and one Outer Area Patrol out of the 200-East Area. This car will also be armed with a 30 caliber carbine and riot gun for emergency duty.

One fence patrol car from each of the plant areas is now being periodically assigned to roving duty outside their respective areas. Under present procedures, four patrol cars converge at White Bluffs, which affords additional patrol power in this area.

[redacted]

Service Department

Nineteen plant patrol vehicles, including the river and mountain patrol equipment, are being equipped with 30 caliber carbines and riot guns. 30 caliber carbines are also being furnished the areas.

Preliminary mobilization plans have been completed utilizing mobilization ranging from one car with standard weapons to all available patrol personnel, both on and off shift, with all available fire power, depending on the degree of seriousness of the emergency. A copy of this plan has been furnished the Atomic Energy Commission Security Office for recommendation and approval.

On February 20, the stationary patrol posts at Midway sub-station were replaced by two mobile cars which cover the sub-station, classification yards and the western section of the project.

An executive order was received establishing airspace reservations over this plant and other facilities of the Atomic Energy Commission for national defense and other governmental purposes as airspace reservation within which no person shall navigate an aircraft except in the interest of the United States Atomic Energy Commission.

The radio transmitter (WUGN-11), formerly at the Richland Barricade, has been relocated in the 300 Area patrol headquarters. Receiving sets have been installed near the barricade sentry boxes and direct telephone communications between the barricade sentry boxes and the 300 Area radio room have been established.

Six jeeps without radio equipment were reassigned from the Richland patrol pool to the various plant areas to augment the presently available four-wheel mobile equipment.

The 222-T Building was fenced out of the "exclusion" area and became a "limited" area, as a part of the 200-W Area during this period. This was necessary in order to provide working space for certain Redox personnel handling non-classified functions.

An additional construction area was fenced out of the 300 Area and made into a "controlled" area in the vicinity of the 321 Building. Access to this area will be through the construction badge house previously set up for the 384 construction area.

A procedure was instituted whereby drivers of mechanical equipment, whose duties necessitate frequent trips in and out of the construction areas, may be permitted to enter such areas without wearing Health Badges, with the stipulation that they do not leave their conveyances while in the area. The patrolman at the vehicle gate will check their photo identification pass, taking the name and number in order that he may allow them to leave the area without turning in a Health Badge.

A blueprint and classified file room was established in the Engineering Office Building in the 100-DR Area under the control of V. D. Nixon, Construction Project Engineer.

A Kardex File identification system was placed in effect at the 105-D "exclusion Area, 100-D Area, on February 8, 1948.

Service Department

Revised general instruction for receptionists who control access to the various buildings in the vicinity of the 700 Area was issued to provide a standard set of rules for admittance.

A procedure was issued February 20, 1948, covering admittance to operating areas during off-shift hours. The Patrol Emergency Officer in the 770 Building, Richland telephone 274, will be authorized to grant clearance to Works personnel, consultants and visitors to all plant areas during the Security Division's off office hours.

The Material and Package Pass Procedure was enlarged to include the removal of process material from the 305 Building.

An emergency procedure was set up whereby fire apparatus from the 3000 Area and Richland may enter the 300 Area to fight fires by receiving blank Health Badges from the vehicle gate patrolman without taking the time to prepare individual clearances. At the end of the emergency period, the fire fighters involved will turn in the blank badges and the Patrol Division will take the name and payroll number for attachment to the badge in order that proper Health Instrument and Security records may be completed "after the fact".

A clarification of employment of aliens was received and effective February 2, 1948; aliens will be permitted to work in Richland and 3000 Areas on unclassified activities.

Approval was received from the local Atomic Energy Commission Security Office to use a safe in the office occupied by D. D. Streid as a storage for top secret documents in connection with the 234-5 project.

PATROL

The 200 Areas handled 454 Process escorts between the Areas.

Requests handled totalled 894, mainly consisting of opening doors and gates for employees of other departments.

A total of 824 Construction employees were escorted into areas for first aid treatment.

There were 121 unusual incident reports received, consisting mainly of contraband picked up at barricades.

Three classified escorts were handled during the month.

Eleven employees were given emergency first aid treatment in Areas by Patrol Supervision during periods when medical personnel were absent from the Areas.

Practice evacuations were held in the 100-D Area on February 12; in the 100-F Area on February 18; and in the 100-B Area on February 25.

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Service Department

Training

M-8 Light Armored Car training was continued to groups from the 100 and 200 Areas.

Basic training was curtailed during this period due to lack of new employees.

Advanced training at the Patrol Small Arms Range was continued, and qualifications in Army "L" course firing were as follows:

	December Percent	January Percent	February Percent
Unqualified	9	13	10
Marksman	32	25	29
Sharpshooter	20	25	21
Expert	39	37	40
Totals	100	100	100

The practical Machine Gun Course, in connection with the use of the armed car, was fired and no score kept.

Area and individual competition were discontinued and no awards were presented.

Health talks were given on "The Heart".

Essays were written on "What Atomic Security Means to Me".

The Safety Meeting included the films "The Voice of Safety" and "Minor Injuries"

The Ford Sedan (1A-1406) maintained at the Range for emergency service was equipped with radio on February 26.

SECURITY

Operations Section

There were 286 Security Meetings held, with an attendance of 5,234 employees.

Authorization Cards issued: January - 160 February - 60.

Re-investigation cases forwarded to the Atomic Energy Commission this month - [redacted]
Re-investigation cases forwarded to the Atomic Energy Commission to date - 3[redacted]

Class "Q" clearances received on old employees this month	174
Class "Q" clearances received on old employees to date	1,212
Class "Q" clearances received on new employees this month	609
Class "Q" clearances received on new employees to date	2,957
Class "Q" clearances received on both old and new employees since February 17, 1947	4,169
Formal Class "S" clearances awaiting change to Class "Q"	3
Interim Class "S" clearances awaiting change to Class "Q"	58
Formal Class "P" clearances awaiting change to Class "Q"	145[redacted]

Service Department

G. E. Security Bulletin No. 19, entitled "Compartmentation" and No. 20, entitled "Emergency Area Clearance" were issued February 2 and 20, respectively.

Statistical Summary of Outstanding Area Badges

	January				February				
	A	B	C	Total		A	B	C	Total
100-B	437	1210	655	2302	100-B	440	1235	769	2442
100-D	725	1107	702	2534	100-D	757	1144	810	2711
100-F	756	996	695	2447	100-F	765	1028	794	2587
200-E	893	1204	600	2697*	200-E	933	1250	691	2874*
200-W	1027	1327	594	2948	200-W	1063	1414	673	3150
200-N	65	708	185	958	200-N	67	724	194	985
300	1267	1216	539	3022	300	1344	1357	532	3233
100-DR	1640	33	-	1677	100-DR	2458	90	-	2548
300-C	29	99	-	128	300-C	54	162	-	216
241-TX	555	37	-	592	241-TX	679	124	-	803
					101	26	-	-	-

*Includes 30 "A" badges at Riverland Yards.

*Includes 31 "A" badges at Riverland Yards.

Visitors or Temporary Badges

Area	January	February
100-E	47	22
100-D	49	40
100-F	45	52
200-E	125	48
200-W	94	71
200-N	5	16
300	73	82
100-DR	33	46
300-C	9	5
241-TX	98	95
101	-	2
Totals	478	479

Special Clearance Section

Following is a statistical summary of emergency clearance status of vendor and consultant companies:

	Companies	Personnel
Total forwarded to A.E.C. this month	16	108
Total forwarded to A.E.C. to date	115	1,251
Total cleared for restricted data this month	43(new & old)	548
Total cleared for restricted data last month	53(new & old)	241

Service Department

Number and type of clearance granted by A.E.C. this month to vendors:

Emergency "Q"	2
Administrative "Q"	-
Formal "Q"	535
Formal "P"	196

Total number of individual investigations conducted by the Security Section for the purpose of obtaining Emergency Clearance for vendors and consultants:

January - 10 February - 13

Emergency Clearance requested for General Electric personnel this month	1
Emergency Clearance requested for General Electric personnel to date	43
Emergency Clearance received on General Electric Personnel this month	1
Emergency Clearances received on General Electric personnel to date	15

Construction Section

There were 182 Security Meetings held, with an attendance of 8,751 sub-contracto employees.

	January	February	Total to Date
Hires	3,426	2,647	16,279
Terminations	1,061	1,421	5,891

The number on sub-contractor and vendor payrolls as of February 29, 1948 - 10,29

Summary of Clearances Requested and Received

Formal "P" clearances requested this month	2
Formal "P" clearances received this month	177
Formal "P" clearances requested to date	15
Formal "P" clearances received to date	852
Number of "P" clearances requested this month	1,679
Formal "Q" clearances requested to date	3,707
Formal "Q" clearances received to date	919
Administrative clearances requested to date	34
Administrative clearances received to date	28
Emergency clearances requested to date	21
Emergency clearances received to date	2

Lost Badges

January - 59 February - 98 Total to date - 209

Construction Security Bulletin No. 3, entitled "Rumors", and No. 4, entitled "Restricted Documents" were issued to all sub-contractors February 4 and 23, respectively.

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REPORT OF VISITORS FOR PERIOD ENDING FEBRUARY 29, 1948

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
MEDICAL DEPARTMENT						
Visitors to this Works						
J. Z. Bowers Atomic Energy Commission Washington, D. C.	Check health problems on project	P. A. Fuqua R. R. Sachs	2-23-48	2-23-48	X	
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Consultation on patients	W. D. Norwood	2-26-48	2-26-48		X
Herman Smith 4801 Ellis Avenue Chicago, Illinois	Consultation on hospital plans	W. D. Norwood P. A. Fuqua	2-27-48	2-28-48		X
DESIGN DEPARTMENT						
Visits to other Installations						
F. H. Ames, Jr. to: General Apparatus Seattle, Washington	Interview prospective engineers	L. B. Robinson	2-9-48	2-12-48		X
G. Udine to: Gunderson Engineering Corp.-Portland, Ore.	Check shop drawings on Project C-187	L. Johnson	2-9-48	2-11-48		X
A. T. Donnels to: G. A. Pehrson & Assoc. Spokane, Washington	Contract negotiations with this firm	G. A. Pehrson	2-10-48	2-11-48		X
F. H. Shadel to: Pacific Car & Foundry Seattle, Washington	Approve shop drawings on Project C-187	Mr. Williams	2-11-48	2-17-48	X	
Isacson Iron Works Seattle, Washington		Mr. Zeigler				X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
A. G. Sampson to: Washington Iron Works Seattle, Washington	Consult on inspection tools	Mr. Nugent	2-13-48	2-13-48	X	
E. J. Burda to: Mare Island Naval Shipyard- Vallejo, Calif.	Arrange for manufacture of tie strap inspection gauges	Captain Dowd	2-16-48	2-19-48		X
C. C. Brockmeier to: Henderson Bros. Eng. Corp. - Portland, Ore.	Work with vendor on steel drawings	L. W. Johnson	2-18-48	2-23-48		X
P. M. Murphy to: Giffels & Vallet Detroit, Michigan	Conference	C. J. Steigleder	2-23-48	2-27-48	X	
R. F. Klein to: Puget Sound Naval Yard Bremerton, Washington	Technical consultation	Captain McKee	2-23-48	2-26-48		X
D. A. Conley to: General Electric Co. Schenectady, N. Y.	Collect data for engineering drafting standards	C. H. Hill	2-2-48	2-16-48		X
R. T. Jaske to: Giffels & Vallet Detroit, Michigan	Coordinate changes in ventilation	C. J. Steigleder	2-1-48	2-10-48	X	
A. J. Karnie to: Giffels & Vallet Detroit, Michigan	Consultation on procurement of process equipment	C. J. Steigleder	2-8-48	2-17-48	X	
I.M.A. Garcia to: Giffels & Vallet Detroit, Michigan	In connection with electrical work on 105-DR	N. R. Bjornson	2-6-48	2-17-48		X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Classified	Unclassified
C. A. Evans to: General Electric Apparatus-Seattle, Wash.	Recruitment at University of Washington	L. B. Robinson	2-9-48	2-12-48		X
W. P. Ingalls to: Argonne Laboratory Chicago, Illinois	Laboratory design conferences	H. Hull	2-20-48	2-28-48	X	
Giffels & Vallet Detroit, Michigan		C. J. Steigleder			X	
C. H. Holt, Jr. to: Kellex Corporation New York, N. Y.	Liaison work	H. H. Willis	2-23-48	Two years	X	
J. Benham to: Farragut Naval Training Station-Farragut, Idaho	Expedite removal of transformers	E. B. Herron	1-5-48	2-7-48		X
C. M. Burns to: General Electric Co. Schenectady, N. Y.	Technical consultation	-	1-26-48	2-6-48	X	

CONSTRUCTION DEPARTMENT

Visits to other Installations

C. A. Moore to: Prefab Engineering Co. Portland, Oregon	Investigate plant and production facilities for housing contract	D. Johnson	2-6-48	2-7-48		X
Middleton-Baldwin-Anderson, Inc. Portland, Oregon		L. Baldwin				X
Sound Engineering Const. Co. Portland, Oregon		Mr. Lukins				X
Virginia Lee Homes Portland, Oregon		C. F. Dally				X

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
O. Mageehon	Inspect equipment at Ordnance plants					
to: Weldon Springs Ordnance St. Louis Missouri		Mr. Staley	2-6-48	2-22-48		X
Camp Reynolds Greenville, Pa.						X
Oak Ordnance Works Pryor, Oklahoma		S. I. Major				X
Keystone Ordnance Plant Meadeville, Pa.		Mr. Sinimerley				X
Gopher Ordnance Plant Minneapolis, Minnesota		Mr. Carlson				X
H. A. Anderson	Inspect equipment at Ordnance plants					
to: Weldon Springs Ordnance St. Louis, Missouri		Mr. Staley	2-8-48	2-19-48		X
Oak Ordnance Works Pryor, Oklahoma		S. I. Major				X
Keystone Ordnance Plant Meadeville, Pa.		Mr. Sinimerley				X
R. T. Gardner	Inspect railroad ties and rails					
to: Hymans Michaels Co. San Francisco, Calif.		B. Pardee	2-8-48	2-19-48		X
Hyman Michaels Co. Los Angeles, Calif.		J. L. Hogan				X
Iron Steel Product Co. Houston, Texas		H. O. Parsons				X
C. W. Harrison	Repair shop equipment for 100 Areas.					
to: Marine Electrical Co. Portland, Oregon		Mr. Clark	2-14-48	2-17-48		X
F. R. Creedon	Conclude negotiations for availability of du Pont men for Hanford					
to: Atomic Energy Commission Washington, D. C.		AEC officials	2-7-48	2-20-48	X	
E. I. du Pont deNemours Wilmington, Delaware		O. H. Greenwalt			X	
General Electric Co. Schenectady, New York		C. E. Wilson			X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
ELECTRICAL DEPARTMENT						
Visitors to this Works						
G. M. Clifton General Electric Company Pasco, Washington	Discuss plans for new transmission line in Richland	H. A. Carlberg	2-11-48	2-11-48		X
S. Zysk General Electric Company Schenectady, New York	Discuss plans for new transmission line in Richland	H. A. Carlberg	2-11-48	2-11-48		X
C. A. Martin Graybar Company Seattle, Washington	Telephone matters	H. A. Carlberg H. A. Remaly B. J. Willingham	2-19-48	2-20-48		X
J. W. Watkins Benbow Mfg. Co. Seattle, Washington	Commercial	H. A. Carlberg	2-26-48	2-26-48		X
HEALTH INSTRUMENT DEPARTMENT						
Visitors to this Works						
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Consultation on health problems	H. M. Parker	2-26-48	2-26-48	X	
Visits to Other Installations						
H. M. Parker to: University of Chicago Chicago, Illinois	Lectures	R. E. Zirkle	1-25-48	2-14-48	X	
P. L. Eisenacher to: Swedish Hospital Seattle, Washington	Calibration of health instruments	S. T. Cantril	1-2-48	1-3-48	X	

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
INSTRUMENT DEPARTMENT						
Visitors to this Works						
W. W. Schultz Consulting Laboratory Schenectady, New York	Consultation on ionization chambers	H. D. Middel	2-4-48	2-6-48	X	
POWER DEPARTMENT						
Visitors to this Works						
H. M. Lowenstein Combusion Engineering Company New York City, N. Y.	Boiler consultation	K. H. Miller	2-24-48	2-24-48		X
Mr. Ohrbaugh York Corporation Seattle, Washington	Equipment inspection	F. P. Britson	2-24-48	2-25-48		X
Visits to other Installations						
H. F. Measley to: Brookhaven Laboratory New York City, New York	Surveying dismantled steam plant	A. Levine	2-5-48	2-23-48		X
H. K. Ferguson Company New York City, New York		Mr. Ryan				X
SERVICE DEPARTMENT						
Visits to other Installations						
G. Raney to: National Carbon Company Morganton, North Carolina	Plant security measures for vendor work off-site	L. F. Perkins	1-26-48	3-1-48	X	
M. T. Binns to: Clinton Laboratory Oak Ridge, Tennessee	Furniture inspection for Hanford Works		2-26-48	3-2-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
H. N. MacLeod to: Clinton Laboratory Oak Ridge, Tennessee	Furniture inspection and shipment to HW	-	2-26-48	4-1-48	X	
TECHNICAL DEPARTMENT						
Visitors to this Works						
M. D. Peterson Monsanto Chemical Company Oak Ridge, Tennessee	Technical consultation and inspection	R. H. Beaton J. M. Frame	2-3-48	2-6-48	X	
R. W. Stoughton Monsanto Chemical Company Oak Ridge, Tennessee	Technical consultation and inspection	R. H. Beaton J. M. Frame	2-3-48	2-6-48	X	
F. T. Miles Monsanto Chemical Company Oak Ridge, Tennessee	Technical consultation and inspection	R. H. Beaton J. M. Frame	2-3-48	2-6-48	X	
H. M. Feder Monsanto Chemical Company Oak Ridge, Tennessee	Technical consultation and inspection	R. H. Beaton J. M. Frame	2-3-48	2-6-48	X	
G. L. Heitman General Electric Company Schenectady, New York	Consultation on the "beta" experiment	C.W.J. Wende	2-6-48	2-13-48	X	
R. W. Moshier Monsanto Chemical Company Oak Ridge, Tennessee	Inspection and consultation	T. W. Hauff	2-6-48	2-6-48	X	
W. C. Young Atomic Energy Commission Oak Ridge, Tennessee	Statistical techniques relative to material accounting	B. F. Butler	2-11-48	2-11-48	X	
H. W. Norton Atomic Energy Commission Oak Ridge, Tennessee	Statistical techniques relative to material accounting	B. F. Butler	2-11-48	2-11-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
C.D.W. Thornton Atomic Energy Commission Oak Ridge, Tennessee	Statistical techniques relative to material accounting	B. F. Butler	2-11-48	2-11-48	X	
D. George Atomic Energy Commission Oak Ridge, Tennessee	Statistical techniques relative to material accounting	B. F. Butler	2-11-48	2-11-48	X	
J. B. Sampson General Electric Company Schenectady, New York	Calculations in Physics Group	C.W.J. Wende	2-11-48	3-24-48	X	
H. P. Sleeper General Electric Company Schenectady, New York	Consultation on new shielding systems for piles	C.W.J. Wende	2-26-48	3-1-48	X	
C. E. Clifford Monsanto Chemical Company Oak Ridge, Tennessee	Consultation on new shielding systems for piles	C.W.J. Wende	2-26-48	3-1-48	X	
T. Rockwell Monsanto Chemical Company Oak Ridge, Tennessee	Consultation on new shielding systems for piles	C.W.J. Wende	2-26-48	3-1-48	X	
C. S. Winn Air Reduction Sales Corp. Stanford, Connecticut	Technical consultation	J. B. Work	2-23-48	2-27-48	X	
H. B. Smith Air Reduction Sales Corp. Stanford, Connecticut	Technical Consultation	J. B. Work	2-23-48	2-27-48	X	
D. E. Chambers Research Laboratory Schenectady, New York	Consultations with management and technical discussions	W. I. Patnode	2-25-48	2-26-48	X	
C. G. Suits Research Laboratory Schenectady, New York	Consultations with management and technical discussions	W. I. Patnode	2-25-48	2-26-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
K. H. Kingdon Knolls Atomic Power Lab. Schenectady, New York	Consultations with management and technical discussions	W. I. Patnode	2-25-48	2-27-48	X	
Visits to Other Installations						
G. E. Lacy to: Argonne Laboratory Chicago, Illinois	Metallurgical meeting	J. F. Schuman	2-12-48	2-13-48	X	
C. G. Stevenson to: Atomic Energy Commission Washington, D. C.	Consultations and conferences on mechanics of Information Division	B. M. Fry	2-10-48	2-20-48	X	
Atomic Energy Commission Oak Ridge, Tennessee		F. W. Simpson			X	
Argonne Laboratory Chicago, Illinois		H. D. Young			X	
C. P. Cabell to: Am. Ins. Chem. Engrs. Spokane, Washington	Speaker for program	-	2-10-48	2-13-48		X
R. J. Hale to: Argonne Laboratory Chicago, Illinois	Laboratory Design Conference	H. L. Hull	2-23-48	2-24-48	X	
R. J. Schier to: Joslyn Mfg. Co. Fort Wayne, Indiana	Establish metal fabricating operations	L. S. Fry	2-28-48	Still gone	X	
T. S. Jones to: Joslyn Mfg. Company Fort Wayne, Indiana	Establish metal fabricating operations	L. S. Fry	2-28-48	Still gone	X	
V. R. Cooper to: Argonne Laboratory Chicago, Illinois	Technical consultation on protective coating	V. M. Manning H. Hull	2-23-48	2-24-48	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data: Classified	Restricted Data: Unclassified
W. O. Switzer to: Argonne Laboratory Chicago, Illinois	Technical consultation on protective coating	W. M. Manning H. Hall	2-23-48	2-24-48	X	
C. M. Slansky to: Argonne Laboratory Chicago, Illinois	Technical consultation on Laboratory Design	S. Lawrosld	2-23-48	2-27-48	X	
R. E. Smith to: Alaskan Copper Company Seattle, Washington	Inspection of fabricated equipment	E. T. Cahill R. Kamb	2-23-48	2-24-48	X	
R. E. Curtis to: Argonne Laboratory Chicago, Illinois	Laboratory Design committee	H. Hall	2-23-48	2-24-48	X	
S DPEARTMENT						
Visitors to this Works						
P. E. Church University of Washington Seattle, Washington	Meteorology Work	D. E. Jenne	2-20-48	2-22-48	X	

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Service Department

PROTECTION DIVISION
ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Central Files	27	26	-	1 (a)
General Division	305	159	-	146 (b)
Patrol and Security	796	628	-	168 (c)
Safety & Fire Protection	246	137	-	109 (d)
Total	1374	950	-	424

(a) 1 Voluntary Termination

(b) 11 Hires
2 Voluntary Terminations
155 Transferred to Realty Division February 1, 1948.

(c) 4 Hires
3 Voluntary Terminations
1 Transfer to another department
5 Removed from Payroll due to leave of absence.
163 Transferred to the Municipal Administration Division February 1, 1948.

(d) 2 Hires
4 Voluntary Terminations
107 Transferred to the Municipal Administration Division February 1, 1948.

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Service Department

MUNICIPAL ADMINISTRATION DIVISION

FIRE PROTECTION

Fires

	Number of Fires		Estimated Damage	
	January	February	January	February
Village	6	10	$230.00	$ 398.58
North Richland & Columbia Camp	12	14	268.00	18,734.30
Total	18	24	$498.00	$19,132.88

Village:

2-2-48 Girl struck match and accidentally ignited stored material in basement of 419 Delafield, occupied by W. E. Green. Estimated Damage $22.00.

2-4-48 Small child ignited paper by placing it in electric heater in home of G. Gates, 1308 Sanford, then threw paper under bed. Estimated Damage $24.08.

2-8-48 Burning cigarette dropped in trash box in Dormitory M-14. Estimated Damage $7.50.

2-11-48 Short in wiring of end drump truck, DC-68A-7906, across from "A" Area on George Washington Way. Estimated Damage $300.00.

2-12-48 Oil salamanders ignited tarp covering 100 yards north of 88 Van Giesen in the new housing area. Estimated Damage $45.00.

North Richland:

2-5-48 Cleaning solvent was spilled on bed and was ignited by P. M. Graves, Barracks 161, Room 1, while smoking a cigarette. Estimated Damage $6.70.

2-10-48 Burning cigarette ignited bedding in Barracks 210-C, Room 20, occupied by Bill Thompson. Estimated Damage $6.70.

2-11-48 Burning cigarette dropped on bed by T. Gaffke, Barracks 220-D, Room 20. Estimated Damage $4.50.

2-16-48 Burning cigarette ignited bedding in Barracks 1, Bed 24, Columbia Camp. Estimated Damage $16.40.

2-21-48 Short circuit on overheated electric motor in equipment room of Barracks 242-C - probable cause. Estimated Damage $18,700.00.

All other fires in the Municipal Division were of a minor nature and no damage was experienced.

Service Department

The total loss from fires in 1948 is $19,630.88. The loss during the same period in 1947 was $100.00.

Inspection was made of 234 buildings in the Village during the month. Inspectors were detailed to inspection work at North Richland.

Routine Duties

Fire Extinguishers

Inspected	1,724
Installed and Relocated	203
Refilled	247
Repaired	0

Fire Drills & Lectures

Outside	29
Inside (House Drills)	89
Auxiliary Brigade	0
Safety Meetings	32

Water Barrels

Installed	28
Refilled	66

All fire alarm boxes were tested.

PATROL

General

Effective February 1, 1948, a separate division of Patrol was formed to be known as the Village Patrol, and it was assigned to the Municipal Administration Division of the Service Department. The new division is composed of Patrol personnel assigned to Richland Village, North Richland, Columbia Camp, Crime Prevention and Traffic Sections. H. W. Strock was assigned as Chief Supervisor of the new division, reporting directly to E. L. Richmond. A. A. Layman, Division Supervisor, and Captains W. A. Ziegler, C. H. Overdahl, A.E. Barron and J. S. Johnson were assigned to the Municipal Division, remaining on their previous assignments. Captain C. F. Klepper was assigned to this section in charge of Administration.

Effective February 9, 1948, Trailer Check Posts were opened on George Washington Way, near the Yakima Bridge, and on Van Giesen Street across from the Riverside Stables. These posts were set up for the purpose of checking authorization of entry for trailers enroute to the North Richland Trailer Camp.

Effective February 12, 1948, personnel assigned to the Mountain Patrol were transferred from the Richland Area Patrol to the 200-West Area Patrol and will operate from that area.

Effective February 12, 1948, personnel assigned to the River Patrol were transferred from the Richland Area Patrol to the 100-F Area Patrol and will operate from that area.

Effective February 12, 1948, Patrol personnel assigned to the Fuels Depot will be under the jurisdiction of the 300 Area Patrol. In the past, the Richland Area Patrol Commander has been responsible for their functions.

Service Department

Effective February 16, 1948, the Outer Area Traffic Division, and personnel assigned to it, was transferred from the Richland Area Patrol to the 200-East Area Patrol and will function from there.

Effective February 16, 1948, the Emergency Office Section of the Municipal Division of Patrol was transferred to a new section, to be known as the 700 Area Patrol, and it will be under the jurisdiction of the 300 Area Patrol under the supervision of Captain H. W. Winslow.

Effective February 16, 1948, the responsibility of the 700 Area Patrol was transferred from the Richland Village Patrol to the Industrial Section of Patrol, to be under the jurisdiction of the 300 Area Patrol Commander. Forty-two (42) patrolmen and two (2) patrolwomen were also transferred from the Richland Area Patrol to the 700 Area Patrol to comply with manpower requirements for this section.

Effective February 16, 1948, the Traffic Section was divided into two sections - North Richland and Richland Village. Lieutenant J. E. Coleman is in charge of the North Richland Traffic Section and Lieutenant J. A. Ramsey, Jr. is in charge of the Richland Village Section, with Captain A. E. Barron retaining the overall command of both sections.

Effective February 16, 1948, the Crime Prevention Section was divided into two sections - North Richland and Richland Village. Lieutenant F. J. Schultz is in charge of the North Richland Section and Lieutenant L. M. Linkous is in charge of the Richland Village Section, with Captain J. S. Johnson retaining the overall command of both sections.

Effective February 23, 1948, the Municipal Division of Patrol assumed responsibility for training personnel assigned to this section, with the exception of firearm training, which is accomplished, as in the past, at the Patrol Range. Classroom instruction for our personnel is now being conducted in Dormitory W-10, under direction of Patrol supervision. A thorough system of police instruction is now being planned with the assistance of an instructor from Washington State College at Pullman.

Effective February 26, 1948, responsibility for the Master Key System was placed in charge of Assistant Chief, A. L. Funk. Duties connected with this function were formerly performed by Captain C. F. Klepper.

The new jail, which has been in process of construction in conjunction with the 770 Building for the past several weeks, was completed on February 27, 1948, and it is to be released to Patrol after inspection. It is anticipated that the new jail will be placed into use in the very near future.

Six new mattresses were obtained from Housing on February 12, 1948, to be used in the new jail.

Effective February 9, 1948, a Trailer Check Post was established on the Benton City Road, approximately 1/2 mile west of Stevens Drive (one man, twenty-four hours per day).

Effective February 9, 1948, a Motor Patrol Post was es[illegible] trailer camp in North Richland (two men, twenty-four hours per day).

Training

The new Training program is outlined under General; however, a more detailed outline of the program is given below. The following procedure and schedule was placed in effect on February 23, 1948:

The Patrolmen report to the Range on their regular range day, as in the past, for routine firearm instruction. They are released from the range at 11:30 A.M. each day and returned to Richland, where they assemble in Dormitory W-10 promptly at 1:00 P.M., Mondays through Fridays, for classroom instruction. For the period beginning February 23, running through February 29, classroom instruction consisted of the following:

"Stretcher Instruction (use of and handling of patients) by E. J. Quigley, Industrial Nurse Supervisor - 1:00 P.M. to 1:55 P.M."

"Traffic Instruction and Methods of Procedure - 2:00 P.M. to 3:25 P.M."

"Health, Safety and Security Discussions and Instructions - 3:30 P.M. to 4:00 P.M."

Prior to February 23, 1948, Patrol training for our section was carried out as required in the past at the Patrol Arms Range.

Advanced training at the Patrol Small Arms Range was continued and qualifications in Army "L" course firing were as follows:

	December	January	February
Unqualified	9%	13%	10%
Marksman	32	25	29
Sharpshooter	20	25	21
Expert	39	37	40

Team Area and High Individual scores are discontinued due to being unable to purchase awards.

Richland Area (Village)

	December	January	February
Classified escorts	6	14	14
Check on absentees	8	5	2
*Persons assisted	303	948	612
Doors and windows found open in commercial facilities	31	14	25
Lost children found	5	4	3
Ambulance runs	56	74	66
Lost dogs reported	3	0	1
Dog and cat complaints	30	26	29
Persons injured by dogs	3	4	0
Totals	445	1089	747

*Includes: Escorts from Cashier Office and Bus Terminal to Bank; persons admitted to residence; transportation for nurses and technicians to Hospital

on special night calls; delivery of messages to residents who have no telephones; and opening trailer parking lot for individuals.

Richland Area (North)	December	January	February
Escorts	179	127	165
Bank details	0	26	26
Ambulance runs	8	17	15
*Persons assisted	688	854	658
Complaints investigated	124	78	122
Totals	999	1102	986

*Includes: Special bank details; admitting persons to their rooms; contacting parties on long distance calls; issuing rooms and bedding; locating persons wanted for various reasons, and handling complaints of a general nature.

Richland Area (Columbia Camp)	December	January	February
*Persons assisted	197	108	167
Escorts	0	1	0
Ambulance runs	4	2	2
Complaints handled	13	4	8
Open doors and windows	4	6	3
Totals	218	121	180

*Includes: Bedding issued; services rendered to others, and handling of emergency details in general.

Traffic Section

Adult drivers training and instruction which began on January 30, 1948, was continued through the month of February. Classes are conducted each Friday night for periods of two hours.

Patrol

A total of 131 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.

Crime Prevention - Special Activities

United States Civil Service Commission Confidential Inquiries	29
Inquiries answered pertaining to terminated Hanford employees	1
Armed Forces Confidential Inquiries on Potential Recruits	1
Inquiries answered pertaining to potential Atkinson-Jones hires	2
Contacts made for Outside Agencies	6
Person contacted in reference to letter received from relative	1
Herb Johnstone's, Investigation Section, on job applications	2
Letter written and two billfolds returned, parcel post to A & J	1
Special money escorts from Pasco to Richland - Richland to North Richland	12

PATROL DIVISION - RIGHLAND OFFENSES

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses Jan.	Actual Offenses Feb.	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	3	1	3	2	2	1	4
Attempted Suicide	0	0	0	0	0	0	0
Burglary-Breaking and/or Entering	4	0	0	4 (a)	2	0	4
Robbery	0	0	0	0	0	0	0
Larceny-Theft (except auto & bike):							
(a) - $50.00 and over value	6	2	5	4 (b)	2	0	4
(b) - Under $50.00 value	12	3	19	9 (c)	0	1	2
Auto Theft	0	0	2	0	0	0	0
Bicycle Theft	10	1	12	9	0	0	(u)
Weapons: Carrying	1	0	0	1	1	0	1*
Destruction of Government Property	4	0	3	4 (d)	0	2	3
Destruction of Personal Property	5	0	2	5	0	0	(u)
Destruction of School Property	0	0	0	0	0	0	0
Disorderly Conduct	4	0	3	4	1	3	5* (1-c)
Drunkenness	3	0	9	3	3	0	3
Embezzelment and Fraud	1	1	0	0	0	0	0
Forgery	0	0	4	0	0	0	0
Gambling	1	0	0	1	0	1	8
Missing Persons	3	2	0	1	0	1	1
Offense against family & children	0	0	1	0	0	0	0
Pickup for Outside Agency	1	0	0	1	1	0	1*
Prowlers	4	0	2	4	1	0	1*
Rape	0	0	0	0	0	0	0
Sex Offenses	0	0	2	0	0	0	0
Vagrancy	0	0	2	0	0	0	0
Violation State Game Laws	1	0	1	1	1	0	1
Violation State Liquor Laws	0	0	0	0	0	0	0
Miscellaneous	8	0	1	8	0	1	1
Juveniles (other than reported above)							
Disorderly conduct	1	0	4	1 (e)	0	1	4
Total	72	10	75	62	14	11	43

Value of property recovered - $559.00 (includes four bicycles).

(a) - Two of the offenses were perpetrated by four juveniles, ages 17, 18, 20 and 16 years.
(b) - One of the offenses was perpetrated by three juveniles, ages 15, 16 and 18 years (16 and 18 years same as Item 'a').
(c) - One of the offenses was perpetrated by two juveniles, ages 17 and 19 years.
(d) - Two of the offenses were perpetrated by three juveniles, ages 10 and 12 years.
(e) - The one offense was perpetrated by four juveniles, ages 10, 12 and 14 years.

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PATROL DIVISION - NORTH RICHLAND OFFENSES

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses Jan.	Actual Offenses Feb.	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	3	0	0	3	3	0	3
Attempted Suicide	0	0	0	0	0	0	0
Burglary-breaking and/or entering	1	0	2	1	0	0	(u)
Larceny-Theft (except Auto & Bike):							
(a) - $50.00 and over value	3	1	10	2	0	1	1
(b) - Under $50.00 value	9	0	9	9	0	1	1
Auto Theft	1	0	2	1	0	0	(u)
Bicycle and Motor Bike Theft	0	0	0	0	0	0	0
Carrying Concealed Weapon	1	0	0	1	1	0	1
Destruction of Government Property	1	0	1	1	0	1	2
Destruction of Personal Property	0	0	0	0	0	0	0
Destruction of School Property	0	0	0	0	0	0	0
Disorderly Conduct	0	0	0	0	0	0	0
Drunkenness	25	0	14	25	25	0	25
Embezzlement and Fraud	0	0	0	0	0	0	0
Forgery	0	0	0	0	0	0	0
Gambling	0	0	0	0	0	0	0
Missing Persons	0	0	0	0	0	0	0
Offense against family & children	0	0	0	0	0	0	0
Prowlers	0	0	0	0	0	0	0
Rape	0	0	0	0	0	0	0
Robbery	0	0	1	0	0	0	0
Sex Offenses	0	0	0	0	0	0	0
Vagrancy	9	0	4	9	9	0	9
Violation of State Game Laws	0	0	0	0	0	0	0
Violation of State Liquor Laws	0	0	0	0	0	0	0
Miscellaneous	3	0	1	3	0	1	2 (a)
Juveniles (other than reported above)							
Disorderly Conduct	0	0	0	0	0	0	0
	56	1	44	55	38	4	44 (b)

(a) - One of the perpetrators involved was a juvenile, age 17.
(b) - 21 of the perpetrators involved were colored males.
(u) - Represents 'unknown'.

Value of property recovered during the month - $958.50.

HW-9191-Rec

PATROL DIVISION - COMPARISON CHART OF RICHLAND & NORTH RICHLAND OFFENSES

Number of offenses known to police per 10,000 inhabitants, in cities between 10,000 and 25,000 inhabitants:

Classification	Washington, Oregon & Calif.		Richland			North Richland		
	Six Months (Jan-June 1947)	One Month Average	Six Months (Jan-June 1947)	January 1948	February 1948	Six Months (Jan-June 1947	January 1948	February 1948
Murder	.688	.114	0	0	0	0	0	0
Robbery	19.57	3.26	0	0	0	0	.66	0
Aggravated Assault	11.23	1.87	.22	2.0	1.66	0	0	2
Burglary	114.53	19.09	1.66	0	2.66	0	1.33	.66
Larceny	296.10	49.35	12.33	24.0	13.66	0	12.66	7.333
Auto Theft	57.73	9.62	.22	1.33	0	0	1.33	.66

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Classification	State of Washington		Richland			North Richland		
	Six Months (Jan-June 1947)	One Month Average	Six Months (Jan-June 1947	January 1948	February 1948	Six Months (Jan-June 1947	January 1948	February 1948
Murder	.184	.30	0	0	0	0	0	0
Robbery	5.11	.85	0	0	0	0	.66	0
Aggravated Assault	1.62	.27	.22	2.0	1.66	0	0	2.0
Burglary	36.20	6.03	1.66	0	2.66	0	1.33	.66
Larceny	91.39	15.23	12.33	24.0	13.66	0	12.66	7.333
Auto Theft	19.79	3.30	.22	1.33	0	0	1.33	.66

The portion of offenses committed by persons under the age of 25 years is shown by the following figures:

Classification	National Average (Jan-June 1947)	Richland			North Richland		
		Six Months (Jan - June 1947)	January 1948	February 1948	Six Months (Jan.-June 1947)	January 1948	February 1948
Robbery	56.1%	0	0	0	0	0	0
Burglary	61.0	30%	0	50%	0	0	0
Larceny	46.0	19	28%	9	0	0	0
Auto Theft	74.1	33	100	0	0	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrest records is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint

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PATROL DIVISION - TRAFFIC CONTROL STATISTICS
February - 1948

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Motor Vehicle Accidents

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.
Plant	2	1	0	0	0	0	0	0
Richland	20	12	0	0	0	0	7	2
North Richland	14	6	0	0	0	0	1	5
Totals	36	19	0	0	0	0	8	7

Accident Causes

	Negligent Driving		Failure to Yield Right-of-Way		Reckless & Drunken Driving		Other Causes	
	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.
Plant	1	1	0	0	0	0	1	0
Richland	16	6	5	6	1	0	2	1
North Richland	17	3	0	2	1	0	1	2
Totals	34	10	5	8	2	0	4	3

Plant Warning Traffic Tickets Issued

	Speeding		"Stop" Sign		Parking		Imp. License		Defective Equip.		Other Violations		Totals	
	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.
Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richland	22	9	10	5	415	182	1	0	37	13	6	0	491	209
N. Rich.	14	5	3	1	644	658	3	5	51	28	1	1	716	698
Totals	36	14	13	6	1059	840	4	5	88	41	7	1	1207	907

Court Citation Traffic Tickets Issued

	Speeding		"Stop" Sign		Drunken Driving		Reckless Driving		Neg. Driving		Other Violations		Totals	
	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.	Jan.	Feb.
Plant	5	4	6	7	0	0	0	0	0	0	0	4	11	15
Richland	28	30	9	13	1	1	0	1	9	6	10	34	57	85
N. Rich.	20	13	3	12	0	0	0	0	1	8	7	15	31	48
Totals	53	47	18	32	1	1	0	1	10	14	17	53	99	148

Traffic Volume

Count taken on 2-25-48, north of Yakima R. Bridge on George Wn. Way - 24 hour period - 10,935 Cars.

PATROL TRAFFIC SECTION

RICHLAND JUSTICE COURT CASES

JANUARY, 1948

Violation	Number of Cases	Number of Convictions	Total Fines	Total Susp.	Sentenced to Jail	Sentence Susp.	License Revoked	Average Fine	Warrants Issued
Speeding	49	46	$552.50	$10.00	0	0	0	$11.27	2
Stop Signs	19	16	75.50	None	0	0	0	4.72	3
No Driv. Lic.	6	5	35.50	None	0	0	0	7.10	None
Negligent Driv.	8	8	165.00	7.50	0	0	0	20.62	None
Drunken Driv.	1	1	102.50	None	0	0	1	102.50	0
Failure to Stop & Identify	1	1	12.50	None	0	0	0	12.50	0
Parking	1	0	None	None	0	0	0	None	0
Improper Pass.	1	1	5.50	None	0	0	0	5.50	0
Failure to YROW	1	0	None	None	0	0	0	None	0
Public Intox.	10	10	157.00	None	0	0	0	15.70	0
Public Nuisance	1	1	25.00	None	0	0	0	25.00	0
TOTAL --------	98	89	$1131.00	$17.50	0	0	1		5

Total Fines -------------$1131.00
Less Fines Suspended --- 17.50

Total Received ------------------$1113.50

The above includes violations that occurred on the Hanford Works Project.

PATROL TRAFFIC SECTION

RICHLAND JUSTICE COURT CASES

FEBRUARY, 1943

Violation	Number of Cases	Number of Convictions	Total Fines	Total Susp.	Sentenced to Jail	Sentence Susp.	License Revoked	Average Fine	Warrants Issued
Speeding	42	41	$408.00	None	0	0	0	$9.95	2
Stop Signs	27	26	126.50	$1.00	0	0	0	4.86	1
Imp. Passing	8	8	33.00	5.50	0	0	0	4.00	2
Failure to YRO	1	1	17.50	None	0	0	0	17.50	0
No Arm Signal	1	1	7.50	7.50	0	0	0	7.50	0
Defective Equip.	2	2	15.00	None	0	0	0	7.50	0
No Driv. Lic.	5	5	29.50	7.50	0	0	0	5.90	1
Negligent Driv.	10	10	135.00	None	0	0	0	13.50	1
Drunken Driving	1	1	52.50	None	0	0	1	52.50	0
Parking	7	6	34.00	None	0	0	0	5.66	0
Public Intox.	12	12	125.00	55.00*	0	0	0	10.42	0
Public Nuisance	3	3	57.50	12.50**	0	0	0	19.16	0
Third Degree Assault	2	2	17.50	None	1	1**	0	17.50	0
Vagrancy	6	6	57.50	45.00*	3	3**	0	19.16	0
Carrying Concealed Weapon	1	1	17.50	None	0	0	0	17.50	0
TOTAL------	128	125	$1133.50	$134.00	4	4	1		7

Total Fines----------$1133.50
Less Fines Suspended---------- 134.00

Total Received----------$ 999.50

The above includes violations that occurred on the Hanford Works Project.

Note: *Suspended if he leaves County for 90 Days
**Suspended if he leaves County for 6 Months

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Service Department

MUNICIPAL ADMINISTRATION DIVISION
ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Patrol	163	161	-	2 (a)
Fire Protection	107	114	7 (b)	
Total	270	275	7	2

NET INCREASE - 5

(a) 1 Voluntary Termination
1 Removed from payroll due to leave of absence.

(b) 7 Hires due to expansion program.

[redacted]

Service Department

MUNICIPAL ADMINISTRATION

GENERAL

As a result of the decision to obtain a city manager to assume responsibility of directing the Municipal Administration of Richland, a series of organizational changes was started February 1, 1948, to separate village functions from plant operations. There was established a Village Public Works group consisting of a Maintenance Division, a Labor Division and an Engineering Division. Arrangements for incorporating village fire protection and patrol into the administration of city affairs are now in the process of being worked out. Pending the appointment of the city manager, all operations concerned with village affairs are under the general supervision of E. L. Richmond, Service Superintendent.

The Atomic Energy Commission approved a proposal for allowing churches and community organizations to use project structures now located in the White Bluffs area and which would be moved into Richland at the expense of such organizations. It was stipulated, however, that approval would be given only for the moving and use of buildings which are structurally sound.

Approval was given also by the Atomic Energy Commission relative to a suggested procedure to govern the construction of churches or church schools at church expense.

As the result of further negotiation and correspondence between the Municipal Administration Division and Villagers, Inc., a revised and amplified proposal was submitted to the Atomic Energy Commission for approval by which further safeguards to protect the community interests were added to the original proposal by which Villagers, Inc., would operate certain recreational and community facilities in Richland and North Richland with the proceeds to be used for various projects beneficial to the residents of the two communities.

In order to provide broader representation, representatives of the Richland Chamber of Commerce and of the School Board were appointed as members of the Village Safety Committee.

Existing village regulations dealing with matters of public health, safety and welfare have been revised to make them applicable to North Richland and submitted to the Atomic Energy Commission for approval following their review by W. C. Robbins, legal assistant to the Works Manager.

Estimates of expenditure and income for those accounts, which are the responsibility of the Municipal Administration Division were prepared and submitted as the budget for the year 1948.

The Northwest Greyhound Lines, Inc., augmented with additional schedules

their services from the Yakima Valley to Pasco via Richland and North Richland. The additional service will be of particular benefit to construction employees employed at North Richland and living in the upper valley area.

VILLAGE EXPANSION AND IMPROVEMENTS - RICHLAND

Work authorities were requested of the Construction Project Manager during the month as follows:

1. Request for master plan of commercial facility locations.
2. Request for study dealing with improved facilities for the irrigation of public areas.
3. Request for the design and construction of a new dog pound and veterinary facilities.
4. Request for a study relative to the location and design of school administration offices and warehouse facilities for the school district.
5. Request for a study of the necessary improvement of street light facilities in the existing village.
6. Request for study covering the location, design and estimated cost of construction of a youth activities building.
7. Request for study designating available church building sites in Richland.

A project was prepared and submitted to the Atomic Energy Commission for approval of the procurement and installation of five automatic traffic signals to be installed at key intersections in the village.

A request was made of the Project Engineering Department to prepare a project calling for the installation of approved lock type mail boxes in all Richland dormitories, in order to permit the handling of personal mail through the regular postal channels, thus relieving the General Electric Company of the responsibility and expense of distributing personal mail to Dormitory residents.

Preliminary design layouts for the new elementary school and the additions to Marcus Whitman and Lewis and Clark Grade Schools were approved by the Atomic Energy Commission, the Richland School Board and the Washington State Department of Education.

A work order was issued for the expansion and improvement of the present temporary dog pound facilities. Construction of such additional facilities will make possible the enforcement of the present regulations relative to dog and cat control, pending the design and construction of a permanent building.

A work order was issued for the construction of a test lane to be used as a regular part of the program of driving instructions now being conducted by patrol.

Service Department

Conferences were held with representatives of the public health section relative to the relocation of existing facilities for the disposal of garbage and trash with a view to changing the present type of final disposal to a sanitary fill procedure. Prior to final decision on this matter, the problem will be reviewed with representatives of the United States Public Health Service.

The Electrical Department was requested to install additional street lighting in the area of the additional men's dormitories in order to give additional protection to pedestrians and vehicle traffic.

As a result of discussions concerning the wastage of good land area by the operation of the gravel pit to the north of Hunt Point, agreement was reached as to limited expansion to the north of the present site.

VILLAGE EXPANSION AND IMPROVEMENT - NORTH RICHLAND

Work authorities were requested of the Construction Project Manager for the design and construction of two church buildings to be located at North Richland as well as for the construction of an additional tavern in that locality.

The John Ball Grade School in North Richland opened for enrollment and first classes on February 18, 1948.

DUST CONTROL AND LANDSCAPING

Major activity during the month of February consisted of digging up, balling and moving 21 large trees to locations in front of the Administration, Personnel and Patrol Buildings. In addition to this activity, 18 trees located on the street tree line of personnel residents were moved in order to avoid interference with the street tree planting.

Detailed plans have been prepared for the village public area grass seeding program for the approaching season and it is contemplated that contracts will be granted shortly to sub-contractors to carry out the bulk of the work involved.

ORGANIZATION AND PERSONNEL

Number of Employees on Payroll	February
Beginning of month	14
End of month	13
Net increase or decrease	- 1

One stenographer was transferred from the Community Activities Division to the Design Engineering Department.

Service Department

VILLAGE SAFETY COMMITTEE - RICHLAND

Action taken by the Village Safety Committee during the month is set-forth as follows:

Traffic Control

A. Recommended that the bus stop on the east side of Goethals opposite the Cafeteria be moved to the center of the block to the north to eliminate the hazard to pedestrians.

B. Reviewed the details of installation of the "NO U TURN" signs in the downtown sections of Goethals and George Washington Way.

Fire Prevention

A. Approved the proposal of the Safety and Fire Prevention Division to withdraw fire inspectors temporarily from the village and transfer that activity to the North Richland area.

B. Recommended that automatic fire alarm devices be installed in all multiple sleeping units in Richland and North Richland and that, until such devices are installed, personnel be assigned for periodic inspection of buildings during the night hours.

Health

A. Recommended the installation of public rest rooms in the business area of Richland.

B. Recommended procurement of necessary personnel and facilities for the enforcement of the existing village regulation pertaining to the control of dogs.

Accident Prevention

A. Recommended the correction of the hazardous condition due to the steep bank to the river in front of the new houses in Area "E".

B. Recommended cancellation of the work order to paint irrigation outlets installed adjacent to driveways throughout the village.

Village Safety Committee - North Richland

A. Recommended stricter control of parking in North Richland by installation of additional signs and the extension of the parking lot west of Stevens Drive.

B. Recommended notification to Patrol and the Fire Department when construction needs cause the temporary blocking of streets and the shutting off of fire hydrants.

Service Department

C. Recommended setting up proper safeguards to control the hazards resulting from open excavations.

D. The procedure of fire inspection for all dwelling units was reviewed by the Committee.

COMMUNITY ACTIVITIES

On February 24, 1948, the Recreation Advisory Committee held its regular monthly meeting. The Committee recommended that the following organizations be approved, namely: Church of God, Improved Benevolent and Protective Order of Elks of the World (Colored) Richland Welfare Board (Institutional Member of Community Chest), and Richland Softball Association. The Committee also recommended that "professional sports events be sponsored by approved community organizations, subject to security regulations and availability of facilities, but that no organization shall have exclusive rights to any type or types of event". Those organizations recommended for approval on January 27, 1948, including Seventh Day Adventists, Union Bible Study Class, National Association of Power Engineers, Alchoholics Anonymous, and Woodcrafters, were approved by the Atomic Energy Commission Assistant Manager on February 13.

The offices of Villagers, Inc., were moved on February 7 from their former location on Lee Boulevard to the building on George Washington Way, which formerly housed the Village Library. The Library then took over the building vacated by the Villagers.

The March of Dimes Polio Drive, sponsored locally by the Junior Chamber of Commerce, grossed $5,077.88 with expenses of $203.41 and a net intake of $4,874.57 as compared with last year's net figure of $4,269.

The Richland phase of the 1948 American Red Cross Fund Campaign was officially launched Friday, February 28, with a stated goal of $14,380.

SCHOOLS

School enrollment in Richland and North Richland as of February 27, 1948, was as follows:

Sacaja wea Grade School	1,034	
Marcus Whitman Grade School	738	
Lewis & Clark Grade School	856	
Jefferson Grade School	346	
John Ball Grade School (North Richland)	136	
Total all grade schools		3,110
Columbia High School		795
Total all schools		3,905

[redacted]

This indicates a total enrollment increase since May 31, 1947, of 642 pupils, with 163 additional pupils at the high school and 479 at the grade schools. During the month there was an increase in enrollment of 10 pupils in the high school and an increase in enrollment of 68 in the grade schools.

On February 27, 1948, there were 77 children enrolled in the Richland Nursery School with an average attendance of 55. There was an increase in enrollment during the month of 5. On this day there were 16 children enrolled in the Extended Day Care program of the Nursery with an average attendance for the month of 14. There was an increase in enrollment of 1 child during the month.

An all-day, In-Service-Training Conference for grade school teachers was held at the Lewis & Clark Grade School Tuesday, February 24, which was declared a grade school holiday.

Sponsored by Thespian Troupe 640 of Columbia High, the University of Washington Touring Company presented two plays, "She Stoops to Conquer" and "Macbeth", in the high school auditorium February 13, 1948.

CHURCHES

The administrative offices of the United Protestant Church were moved from 510 Barth to the church building in order that the space formerly occupied by the offices could be utilized as living quarters for Rev. Phillip Walborn, associate pastor in charge of religious education.

The Richland Lutheran men's Club sponsored the appearance on February 24, 1948, of the Nordic Cathedral Choir which gave a choral concert in the Columbia High School auditorium.

COMMUNITY FACILITIES PERSONNEL

The number of full time employees employed by the schools, churches and community organizations as of February 27, 1948, is setforth as follows:

Schools	235
Churches	24
Community Organizations	88
Total	347

Service Department

MAJOR ACTIVITIES DURING THE MONTH

February 6	Iowa Ghosts Exhibition Game	Columbia High School
8	Richland Orphans Wrestling Bouts	Columbia High School
13	University of Washington Players	Columbia High School
12	Richland Concert Association	Columbia High School
6 - 7	Richland Players Production	Columbia High School
21	Harlem Tops Exhibition Game	Columbia High School
18 - 24	All-City Camp Fire Movies	Columbia High School
24	Nordic Cathedral Choir	Columbia High School
27	Jr. Chamber of Commerce Magic Show	Columbia High School
28	Richland Concert Association	Columbia High School

Service Department

REALTY DIVISION

GENERAL

The Realty Division has as its general responsibility the landlord relationships involving assignment and leasing of houses, apartments and dormitory rooms; the procurement and performance of commercial facilities; and the operation of the construction camp at North Richland, as well as the operation of Columbia Camp.

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	February
Beginning of month	238*
End of month	271
Net increase	33

* This number was decreased by 15 employees of the Village Engineering Section and increased by 155 janitors from the Sanitation Section by virtue of a re-organization of the Service Department effective February 1, 1948.

During the month of February the following personnel was added to the Realty Division:

20	Janitors
10	Junior Clerks
1	Laborer
1	Stenographer
1	Office Helper

The following report is divided into three parts: Richland Housing, Commercial Facilities and North Richland Housing activities.

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	Pre-Cuts	Prefab	Apts.	Tract	Total
Operations	2261	-	70	1173	8	34	3545
Facilities	115	-	2	116	-	5	238
Government	103	-	3	41	1	20	168

Service Department

	Conventional	Block	Pre-Cuts	Pre-fabs	Apts.	Tract	Total
Kellex Corp.	-	-	-	9	-	-	9
Morrison-Knudsen	4	-	-	4	-	-	8
Atkinson & Jones	1	-	-	1	-	-	2
Graysport Construction	-	-	-	-	-	1	1
Kern & Kibbe	-	-	-	-	-	1	1
Vernita Orchard Co.	-	-	-	-	-	1	1
Total Occupied Houses	2484	9	75	*1344	9	**62	3974
Houses Used Spec. Purp.	-	-	-	-	-	1	1
Houses Assig.(lease written)	3	1	1	-	1	-	6
Houses Assig.(Awaiting Ten.	13	-	5	10	-	-	28
Govt. Houses - Unassigned	-	-	-	-	-	***45	45
	2500	1	81	1354	10	108	4054

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2493	10	19	2484	Minus 9
Pre-Cut	20	55	-	75	Plus 55
Prefabricated	1340	31	27	1344	Plus 4
Apartments	10	-	1	9	Minus 1
Tract	63	1	2	62	Minus 1
Total	3926	97	49	3974	Plus 48

DORMITORIES		Occupants	Vacancies	Total Beds
Men - Occupied	14	*523	**35	558
Men - Unoccupied	-	-	-	-
Women - Occupied	12	*502	**13	515
Women Unoccupied	-	-	-	-

Women's Dormitories Occupied by:

Medical Department	1
Government Office	1
G. E. Office	1
Education	1
Apartment	1
	***31

* Total includes single beds added in two single rooms in the mens dormitory for two G. E. employees and 11 beds added in the girls dormitories for the Atkinson & Jones Company.

** 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. Also included in this total are 9 vacancies in M-12, which was turned over to the F.B.I. to house their personnel only and 10 vacancies in M-9, which was turned over to Kellex Corporation to house their personnel only.

*** Potential Occupancy 28 Dormitories: 14 Men's; 14

Service Department

Acceptance of applications for moves to the new Atkinson-Jones houses was closed February 6, 1948. The following is a list of the different type houses and the number of applications received for each.

Type	Applications Received
M	238
Q	103
R	169
S	54
Apts.	2

On the 26th of February 1613 Johnston, an "R" type houses, was turned over to us as the first Atkinson & Jones house to be completed.

Fifty-two (52) Pre-Cuts were turned over to us by the Hudson Company. 39 "V" type and 13 "U" type.

Tract House JJ-641 was leased to the Vornita Orchards Company, who is under contract for A.E.C. to operate orchards in that Area. Lease date was February 3, 1948. Rental is $22.40 per month unfurnished.

A trip was made by M. T. Binns and C. W. Weeks to Portland and vicinity during the month to inspect excess furniture available to the Project at that location. Another trip was made by M. T. Binns and H. N. Mac Leod to Oak Ridge, Tennessee for the same purpose.

Organization

Effective March 1, 1948, B. T. Rossiter is appointed Assistant Division Supervisor of the Housing Office - Realty Division reporting to C. W. Weeks.

COMMERCIAL FACILITIES

Contracts & Negotiations

A Supplemental Agreement, dated February 27, 1948, was entered into by and between General Electric Company and Richland Thrifty Drug, covering conditions and terms pertaining to the building addition at Richland Thrifty Drug Store.

Invitations to bid were sent out on the following prospective facilities:

8 chair barber shop - North Richland
12 chair barber shop - North Richland
Men's Work Clothing Store - North Richland

Service Department

Operators for the following facilities in Richland and North Richland have been selected:

Infants' and Children's Apparel Shop - Jerry F. Crollard, The Elite Shop, Seattle, Washington.
Theater, North Richland - Fay Honey, Portland, Oregon.
Ice Delivery Service - Arthur Trimble, Toppenish, Washington.
Propane Gas Dispensing Service - Western Gas & Power Company, Yakima, Washington.

Inventory & Property

The annual 1948 inventories of Government equipment were completed at the following locations:

Richland Supply
Richland Electric
Richland Shoe Salon
Mickey's Shoe Renewing
Columbia Service
Johnson's Photographic Studio

Requests for Establishment of Businesses in Village

During the month a number of individuals expressed a desire to establish and operate businesses in Richland and North Richland. The type of establishments desired are shown in the following list:

Alteration & Sewing Shop
Automobile Agency
Barber Shop
Beauty Shop
Ben Franklin Store
Bowling Alley
Cafe or Snack Bar
Candy Shop
Carmel Corn Shop
Cold Storage Locker
Concrete Block Factory
Dental Practice
Doughnut Shop
Dress Shop
Drug Store
Laundry & Dry Cleaning Pick-up
Luggage Store
Men's Clothing Store
Miniature Golf Course
Montgomery Ward Catalog Office
Music Store
Optometry Office
PX
Flower Shop & Greenhouse
Fountain Lunch
Food Store
Fresh Fruit Stand
Fuel Oil Delivery
Furniture Store
Garbage Disposal
Gift Shop
Golf Driving Range
Ice Cream & Frozen Food Store
Ice Delivery
Infants' and Children's Store
Jewelry Store
Laundry & Dry Cleaning Establishment
Refrigerated Products Store
Restaurant
Sears Roebuck Order Service Office
Self-Service Laundry
Service Station
Shoe Repair Shop & Pressing Service
Shopping Center
Sporting Goods Store
Tailor Shop

Parts & Automotive Rebuilding
Pastry & Coffee Shop
Pop Corn Stand
Radiator Repair Shop
Recreation Hall
Refrigerated Apple Vending Machines
Tavern
Theater
Watchmaking
Western Auto Store

Written permission was granted to eleven (11) Village tenants to conduct the following part-time businesses in their homes:

Make appointments for the "Silver-Rose Studio" of Portland, Oregon
Take orders for custom-built venetian blinds
Sell 'Rexair home appliances
Conduct diaper laundry service
Take orders for custom-built furniture
Sell Rawleigh products
Sell greeting cards
Conduct tennis and badminton racket restringing business
Sell Knapp Aerotred Shoes
Sell "Yours Truly" Nylon hosiery
Represent Automobile Club of Washington

Written permission was granted fourteen (14) individuals living outside of Richland to contact Village tenants, on an appointment basis, regarding the following business matters:

Sell "Cathie Cosmetics"
Represent Combined Insurance Company of America (2)
Sell 'Good House Keeper" vacuum cleaners
Take orders for tailor-made clothing made by Harman & Co., Denver, Colo.
Pick up laundry & dry cleaning (2)
Display and demonstrate "Steelco" stainless steel cooking utensils
Represent Beneficial Life Insurance Co., of Salt Lake City, Utah
Represent Reserve Loan Life Insurance Company of Texas
Represent Penn Mutual Life Insurance Company
Sell The World Book Encyclopedia (2)
Take orders for tailor-made clothing made by Homeland Tailors, Baltimore, Md.

Commercial Facilities

The following figures indicate trends in commercial activities as related to various basic items:

	January	February
Cafeteria Meal Customers (Progressive)	102,545	102,770
Per cent of room-day occupancy-Transient Qts.	98.01%	91.96%
Gallons of ice cream sold	8,700	9,937
Gallons of milk and cream sold (Carnation)	72,710	76,460
Darigold milk deliveries	8,625	7,294
Theater customer count	48,998	46,372
Cases of soft drinks sold	6,844	6,893
Gallons of gasoline sold	188,768	186,275

Service Department

The total number of Commercial Facility employees, full and part time, as of February 29, 1948, was 899.

Progressive Cafeteria was issued a permit to install a new Breakfast-Soda Bar, as an operating expense of the business.

Authorization was granted Ganzel's Barber Shop to install two additional barber chairs at the operator's expense.

Greyhound Post Houses were issued a permit to provide and install, at their expense, a new electric cooking range and ventilation hood.

The Groceteria was permitted to install new refrigerated vegetable cases, interior lighting, and other remodeling at their expense.

A new asphalt tile flooring has been laid at the Greyhound Post Houses.

Richland Motor Company has placed a new wrecker-tow-car in service which was provided at their own expense.

Garmo's new retail bakery, provided at the expense of the operator, has been placed in operation.

Revision and interior re-modeling of the Style Center has been completed. Baxter's Shoe Store opened at that location.

Commercial Facilities - North Richland

Following figures indicate volume of business in Cafeteria #1:

	JANUARY	FEBRUARY
Meal Customers	132,649	105,792
Average Meal Check - Breakfast	$.45	$.46
Average Meal Check - Lunch	.57	.62
Average Meal Check - Supper	.60	.62
Average daily sales of box lunches	494(Sun.excluded)	484(Sun.exc)

Following figures indicate volume of business in Cafeteria #2:

Meal Customers	67,045	100,739
Average Meal Check - Breakfast	$.51	$.52
Average Meal Check - Lunch	.60	.62
Average Meal Check - Supper	.65	.68
Average daily sales of box lunches	324(Sun.excluded)	443(Sun.exc)

Following figures indicate volume of business in Columbia Camp:

Meal Customers	7,780	7,569
Average Meal Check - Breakfast	-	$.46
Average Meal Check - Lunch	-	.54
Average Meal Check - Supper	-	.59
Average daily sales of box lunches	-	65(Sun.Excl.)

Service Department

Approval was given Canteen Food Service, Inc., to offer a short order menu between the hours of 7:30 PM and 4:00 AM throughout each week. They were also given approval to sell special sandwiches with double amount of filling in addition to the regular box lunches.

Cigarettes offered for sale by Canteen Food Service, Inc., were reduced in price from .20¢ to.18¢ per package or two for.35¢.

The automobile license agency department of the Columbia Service Company served approximately 241 patrons during the month.

Mickey's Shoe Renewing pick-up station served thirty-three customers during the month.

The Richland Laundry & Dry Cleaning served approximately 821 customers at the North Richland pick-up and delivery station during the month.

The North Richland check-cashing service, operated by the Seattle First National Bank, served approximately 2,500 people each pay day (Friday evenings) . A total of approximately 10,000 employees were served during the month.

On February 15, 1948, Western Gas & Power Company, distributors of Propane Gas, began offering service (from truck) to the residents of the North Richland Trailer Camp.

North Richland Ice Delivery, began operating (from truck) on February 15, 1948. Up to the 29th of February about 5,000 pounds of ice were delivered to approximately 237 customers.

Canteen Food Service, Inc., had a total of 341 employees on their payroll as of February 29, 1948.

NORTH RICHLAND HOUSING ACTIVITIES

Barracks Occupancy

On February 29, 1948, approximately 6,000 beds were occupied, of which about 150 were in Columbia Camp. This is an increase of about 1,000 occupied beds during February. No additional one-story barracks were received for occupancy, but 20 additional two-story barracks were turned over.

About 5:00 AM, Saturday, February 21, 1948, a fire broke out in the Equipment Room (reported probable cause, over-heated motor) of barracks 242-C, burning out two-thirds of the wing with the loss of one life and two injured. The occupants were transferred to barracks 185.

The loss of this wing made a total as of February 29, 1948, - one-story barracks, 97 wings occupied and 23 under construction, (of which 16 are wings of Women's Barracks) -- two-story barracks, 29 occupied, 14 under construction, 3 temporarily loaned for Post Office and Recreation Halls. Columbia Camp is still used as an overflow barracks.

Service Department

Sanitation:

During the month the Sanitation Section, doing janitorial work in North Richland barracks and offices, was transferred to the Realty Division.

Trailer Camp

On February 9, 1948, the first trailers were moved into the south end of the trailer camp, with the first three wash houses in use. With the cooperation of Patrol a procedure was established to check all trailers entering the reservation, requiring them to obtain proper authorizations from the employer of the head of the family occupying the trailer. Ratios were established for General Electric and sub-contractors, to be adhered to until all present trailer space applicants are moved in. Twenty-seven trailers moved in the first day. By the end of the month over 350 trailers were located, housing over 1,000 people.

Houses

198 prefabricated houses were ordered moved from Bremerton, Washington, to North Richland. As of February 29, 1948, about fifty were being assembled on concrete foundations east of the trailer camp.

Realty Division Permanent Office

Work on this office progressed during February so that by the end of the month only painting, heating, electrical wires and fixtures and telephones remained unfinished.

Service Department

VILLAGE PUBLIC WORKS

GENERAL

The Village Public Works Organization became effective February 1, 1948, at which time the Village Engineering group, previously part of the Realty Division, was transferred to this organization. Also personnel of the Transportation Department concerned with Village coal delivery, garbage and trash disposal were transferred to the new group. On February 16, groups from the Transportation Division, concerned with the care of orchards, furniture handling, landscape development, and grounds care were transferred.

The Village Engineering group will continue to operate out of Building 69-X and the Labor groups transferred will continue to operate out of hutments located in the labor yard. Office space for supervision for this group will be maintained in the west half of the 1404 building, which previously was the Transportation Labor office. Arrangements were made to utilize metal hutments numbers 722-N, 722-M, 722-L, 722-K, 722-J, 722-G, 722-F, 722-D, 722-E, 722-Q, in the 700 area for shops for the 1100 area electrical and maintenance groups which are to be transferred in March. The 704 building, previously occupied by the Maintenance Department as an office, is to be used by the Village Maintenance group as an office.

The responsibility of the new organization will be to maintain all commercial facilities, community facilities, houses, tract houses and public grounds which are a part of the village of Richland. Maintenance of equipment being operated by the Power Department will not be the responsibility of the new organization. The responsibility for maintenance of the Columbia Camp and labor services required in North Richland will however be included.

ORGANIZATION & PERSONNEL

The new organization is divided into three groups, which are as follows:

Village Engineering Division
Village Maintenance Division
Village Labor Division

Each division is headed up by a Village Engineer who reports to the Village Public Works Engineer and who is responsible for the functioning of his separate group.

The total personnel as of February 1, 1948, is as follows:

Exempt Personnel	7
Weekly Personnel	68
Total	75

The total personnel as of February 29, 1948, is as follows:

Exempt Personnel	13
Weekly Personnel	114
Total	127

Service Department

During the month one exempt employee and one non-exempt employee were transferred to North Richland Realty office.

VILLAGE ENGINEERING DIVISION

PERSONNEL

There were a total of 15 employees in this division as of February 29, 1948.

GENERAL

The normal duties of inspection, scheduling and follow-up consultation and general planning were performed during the month. Priority schedules were set up with Maintenance. Transportation and Electrical Departments outlining the work to be performed in the order most advantageous to the Realty Division. Contacts with members of Construction Group were continued relative to Richland and followed overall construction at North Richland until February 20th at which time it was transferred to North Richland Realty Division.

RICHLAND TENANT SERVICE

Richland Tenant Service and Village Maintenance Work Order and Progress Report is as follows:

	Incomplete 1-30-48	Issued During January	Incomplete 2-29-48	Issued Prev. Month
Patrol Day Maint. & Elect.	1741	2647	1015	3864
Patrol Furniture Repair		46	43	
Patrol off shift Elect.		509	0	
Patrol off shift Plumbing		302	24	
Regular Work Orders	859	361	643	485
Back Charge Orders	35	141	39	96
*Fire Insp. Patrol Orders	705			
Columbia Camp T.S.				
Patrol Orders	32	1	*(Open orders held)	
Regular Work Orders	21	7	(by Elect. Dept.)	

The Tabulation of House Renovations by Types for the Month is as Follows:

Tract	A	B	D	E	F	G	H	L	Prefabs	Apts.	Hutments	Total
0	0	4	0	0	0	0	1	2	16	1	7	31

During the Month, Paint was distributed to tenants as follows:

Kemtone	162.50 Gal.
Enamel	82.25 Gal.
Varnish	49 Qts.
Mural tone	6 Qts.

No Home Fire Inspections were reported due to the special assignments of [redacted] Fire Inspectors to the 3000 Area during the month of February.

Service Department

Items of Interest

1. Revisions to "E" Kitchens are nearing completion. Fourteen four burner ranges were installed in Village homes during the month of February.

2. Tenant requests for basement excavations continue with a genuine interest to do the job well and further assist in the housing shortage. Many inspections to date have shown all types of small partitions and bedrooms.

3. Sink linoleum requests for repair still amount to approximately eight daily. Repairs and completions are rapidly increasing, and to date 336 orders are outstanding as compared with 405 incomplete during the previous month.

4. Requests for bathroom painting outstanding amount to 42 for the month.

5. Outstanding requests for window replacements amount to 109 to date. A severe shortage of glass is responsible for lack of repair and replacements.

COLUMBIA CAMP

1. Considerable trouble has been encountered during the month due to low voltage on the power lines, necessitating replacement of several starter switches and motors.

2. Thermostatic controls have been installed in all barracks as well as in the Administration and Hospital buildings on all heater fans. This has assisted the heating problems in these buildings.

3. Miscellaneous work orders and patrol orders were instigated to cover camp maintenance. A number were for minor repairs to houses and equipment at the Village, to prepare the hutments for occupancy. Many tenants are taking advantage of the paint and kemtone that is available and are refinishing the interiors of their homes.

4. The electric pump on the sewer system at the Village continues to cause considerable trouble. Recommendation: to lay additional tile field from the septic tank and eliminate this pump entirely.

Alteration Permits issued to tenants during the month of February amounted to 77 as compared to 94 issued during January. Alteration Permits issued during February consist of the following:

Easement Excavation	40
Installation of Washing Machine, Bendix	11
Installation of Air Conditioner	11
Refinish Floors	6
Installation of 20 amp circuit	4
Reverse position of range & refrigerator	2
Construction of Patio	1
Installation of electrical outlet	1
Erection of "Apex" green-house	1
GRAND TOTAL	77

[redacted]

Service Department

During the month, Project forces painted the interior of 137 conventional type houses, 21 Prefabs, and 6 Tract houses.

Furniture sent to outside contracts: 60 Double Prefab Mattresses

Furniture received from outside contracts: 80 Double Prefab Mattresses

Furniture repair is increasing steadily in output and during the course of the month deliveries to homes in exchange for damaged furniture is as follows:

81	XLA & LA Davenos
98	KD Rockers
3	TA Refrigerators (Restricted Units)
24	Double Prefab Beds
13	Single Prefab Beds
27	Double Prefab Mattresses
12	CA Mattresses
15	CC Mattresses
68	Miscellaneous Chairs - dining room, occasional, etc.
17	Folding Chairs

ACTIVITIES

We have completed Final Inspection and accepted 81 "U" and "V" type houses to date, or a total of 43 houses this month. The Contractor has started to install screen doors and the two-stage pumps which were two of the exceptions in our Final Acceptance.

Preliminary inspection of the first Atkinson & Jones house was held on February 13th by members of Operations Department: -- Electrical, Maintenance, Fire & Safety and Housing Divisions. We accepted the first A & J house February 25th. There were quite a number of exceptions to this house but since they did not interfere too much with the tenant they were accepted and will be completed by the Contractor as the materials arrive on the Project.

The six Pasco Dormitories were accepted February 25th. We took exception to the interior and exterior painting as well as many minor corrections.

We had Final Inspection of 40,000 gallon Temporary Fuel Oil Storage Tanks and have started using same.

Had Final Inspection of our first Facility also on February 25--the North half of 92-X known as Hurt's Apparel - and accepted on that day.

The project covering the Fire Alarm System of the old Men's and Women's dormitories was inspected by members of the Operating Departments. They were accepted.

Arranged temporary hook-up for sewer and water for Tract [redacted] North Richland Trailer Camp system. The renovation is in progress--repairing interior is approximately 70% complete.

Service Department

Tract House K-787--renovation is complete with the exception of septic tank and tile field which is awaiting materials.

Tract House K-788--complete with the exception of electrical distribution hook-up which is in process at the present time.

Tract House K-898--renovation is in progress - approximately 75% complete.

Tract House 2000-X--remodeling should be complete with the exception of outside painting by the end of this week, - or about 90% complete.

Tract House K-789--We are preparing an estimate to determine the feasibility of renovation.

Tract House 0-1204--prepared monthly cost estimate for electricity and fuel for heating for Community Facilities Group, upon which to base their rental charge.

Construction of Campbell's frozen food lockers is about 25% complete. Block laying, and concrete floors and lintels are virtually finished. Field Inspections are being made and changes noted.

Drawings and specifications for Thrifty Drug Store Front Modernization have been approved and permission granted to commence construction. Work will start week of March 1.

The Richland Laundry Hot Water Tank was re-located to a new saddle. Removal of the old saddle, pouring of the remaining concrete floor and installation of new sump will be completed in the next ten days.

A new Asphalt tile floor was installed in the Bus Depot by Project Craftsmen.

Technical Assistance has been furnished the Community Activities Section and the Facilities Division.

Garmo's Bakery is now operating satisfactorily and will be transferred to the AEC in the near future, upon completion of a final acceptance inspection. Procedure for conducting transfer and making acceptance inspection has been developed for this purpose. Electrical service was installed on a Project basis and includes 2 each, 75 KVA and 1 each, 100 KVA transformers with underground conduit feeders. An additional set of doors was installed in the South wall.

The Groceteria replaced HW fixtures with new equipment and installed a tube lighting system.

The Village Food Store contemplates a slight relocation of existing meat department display cases to accommodate another case, purchased at its own expense.

A priority list is being prepared of those facilities requiring exterior painting next season.

Service Department

Installation of additional shirt and pants finishing units at Richland Laundry will be delayed pending word from Oak Ridge on the availability of essential surplus equipment. Some units have already been secured from the Pasco Warehouse.

Made study and prepared estimate for Trailer Parking lot as per recommendation and proposal by Municipal Administration.

Prepared high spot estimate for the installation of mail boxes in all dormitories with the exception of W-4, 10, and 13, upon which a request for Project was prepared.

A total of 11 Back Charge Estimates and 3 High Spot Estimates were made this month.

NORTH RICHLAND

We have been following over-all construction program as to completion dates and coordinating the work with the Engineers as to priority of the various phases of the camp and have set up a progress map which is complete to date. One copy of which is at the Village Engineer's office at North Richland and one at the Village Engineer's office in Richland - as well as following and expediting all routine maintenance. This work was continued until the 20th of this month at which time it was all turned over to the Realty Division at North Richland.

VILLAGE LABOR DIVISION

PERSONNEL

There were a total of 103 employees in this division as of February 29, 1948.

GENERAL

137,826 gallons of fuel oil were delivered during the month to occupied pre-cut homes and pre-cut homes under construction. There were 1,943.8 tons of coal delivered to village dwellings during the month.

Garbage and trash disposal was handled in Richland and North Richland according to schedule. Other groups which were transferred over from the Transportation Department followed their normal schedule during this period.

REMARKS

Personnel to be transferred to the Village Public Works group effective March 1, 1948, is as follows:

	Exempt	Non-Exempt	Total
From Maintenance Department	12	176	188
From Transportation Department	3	12	15
From Electrical Department	1	0	1
			204

HW-9191-DEC

TRANSPORTATION DEPARTMENT

MONTHLY REPORT

FEBRUARY 1948

GENERAL

Absenteeism in the Department for the month of February was 3.37%. This was an increase of 1.83% over the month of January.

Following is the February Work Order Summary for the Mechanical and Labor Divisio

Groups	Work on hand January 25		Work Completed February 22		Work on hand February 22	
	No.of Orders	Estimated Man Days	No.of Orders	Estimated Man Days	No.of Orders	Estimated Man Days
All Area Labor and Repair	128	12,051.1	196	2,626.5	145	11,940.2
700-1100 and Railroad Labor	221	9,086.9	290	4,085.4	207	8,588.3
Riverland Railroad Repair	5	10.2	11	190.2	6	7.4
700-1100 Repair	256	430.6	358	3,376.7	243	468.0
Total Labor and Repair	610	21,578.8	855	10,278.8	601	21,003.9

ORGANIZATION AND PERSONNEL

The following functions within the Village heretofore performed by Transportation Department were transferred to the Village Public Works and Municipal Divisions of the Service Department during the month: Garbage and Trash Disposal, Coal and Fuel Oil Delivery, Landscaping Program, Grounds Upkeep and Maintenance, Care of Orchards, and Furniture Handling.

E. G. Lasack, Senior Clerk, and G. E. Hess, Light Truck Driver, were upgraded to Labor Foremen effective February 1, 1948, A. J. McKinnon and J. S. Phillips, Labor Foremen, were transferred to the Service Department effective February 1.

During the month a requisition for weekly salaried personnel was issued to increase the force by two Switchmen. Total force as of February 29, 1948, was 777.

Number of employees on payroll		February
Beginning of month		887
End of month		777
Net decrease		110
Terminations	8	
Transferred to other departments	105	
total		113
New Hires	2	
Transfer from other departments	1	3
Net decrease		110

Force of Morrison-Knudsen, Track Maintenance Subcontractor, was decreased by five and the total force as of February 29, 1948, was 92.

OPERATIONAL ACTIVITIES

1. Railroad Operations

Railroad operations continued on an above normal basis with all train movements being effected as scheduled. There were 5,002 cars handled during the month.

A short-manned 8th Crew was established during the month to handle track ballast movements from Susie to the new batch plant at White Bluffs. It is contemplated that this crew can be utilized to perform future special work whereas in the past it has been necessary for the regular train crews to handle this type of work on a scheduled day off, resulting in overtime. In addition, this crew will operate the 4:00 p.m. to 12:00 midnight Riverland Switcher on Saturdays.

2. Repairs

Both Cummings Diesel engines on locomotive 39-372? were completely overhauled during the month. This was the first major repair work on these engines since this unit was placed in service on this Project.

Twenty-one passenger coaches were received at Riverland during the month. The wheel flanges, brake rigging, generators, batteries, and interior condition were inspected. This equipment will be used in the transportation of Construction workers.

3. Track Maintenance

Railroad track maintenance continued in a routine manner in the Areas by Department forces and outside the Areas by subcontractor's forces with the following items of interest.

a. Project C-214, Rehabilitation of Plant Railroads, has been approved and material requisitions have been prepared. Morrison-Knudsen forces will be assigned to work included in this project as material arrives.

b. Negotiations leading to the acquisition of ten track miles of rail and fastenings from the Northern Pacific and Union Pacific Railroads are practically complete and the relay of light rail between May Junction and North Richland should get under way in March.

c. Construction of a new special car spur in 200-East Area, including replacing ties, raising and surfacing of adjacent warehousing spur, was completed.

d. The railroad maintenance subcontractor performed the following work:

By an arrangement with the Safety and Fire Department, several thousand old ties, unfit for any purpose, were burned and the right of way was cleaned of three years accumulation. Snowfalls necessitated the expenditure of considerable time in cleaning switches. Five cars of tie plates were received and unloaded. One road crossing was extended and the ties on hand were distributed.

Freezing conditions slowed up tie removals but as deliveries were seriously delayed little time w as lost because of cold weather.

AUTOMOTIVE OPERATIONS AND REPAIRS

1. Automotive Operations

a. This Department received 356,028 gallons of gasoline, 176,018 gallons of Diesel fuel,and 12,600 gallons of kerosene during February for Project use.

b. The extent of automotive equipment usage is indicated by the monthly total mileage of 1,119,355 for all types of equipment.

c. Area and Village Local bus systems operated during the month as scheduled. Effective with the #2 Shift, February 16, 1948, Atkinson-Jones busses began using the Richland Bus Terminal for loading and unloading General Electric employees working at the 105-DR Area. From the Terminal these employees are transported to and from home by Operations Shuttle busses.

d. The extent of Area bus traffic is indicated by the monthly total passenger count of 97,308 and the extent of Village Local bus traffic is indicated by the monthly total passenger count of 66,880.

e. Off-the-Plant special automobile trips (company business and official visitors) totaled 233.

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

2. Repairs

a. Because of the increased volume of fuel required, a change in the structure of the Bulk Plant at the 1131 Garage has been completed whereby it is possible to unload a Diesel fuel transport and a gasoline transport at the same time thus eliminating the possiblilty of demurrage.

A new loading platform and pumps were installed at the 1131 Gasoline Station and connected to the 12,000 gallon Diesel storage tank. These two installations were necessary because of the heavy withdrawals of fuel by the subcontractors from our Bulk Plants.

b. Nineteen units of automotive equipment were repainted during the month.

LABOR ACTIVITIES

1. Areas

Work in the Areas continued on a routine basis except as noted.

a. 200-East

Project C-112 - Additional Underground Waste Tank Facilities. Work Order D-69244 - Excavation and Backfilling of Waste Lines - has been completed and the fine grading is 75% complete. Work Order D-69836 - Erect Fences on C-112 - was completed. Work Order D-69241 - Move Condensers from 221-B to BX Area - was completed. Well 241-BX-136 was started and completed. The completed depth is 150 feet. Well 241-BX-135 was started and has a present depth of 100 feet. Footage on all wells drilled to date totals 1,000.

Project C-120 - Divert Second Cycle Waste Supernates to Ground. Work Order D-69819 - Excavation has been completed and the backfilling is 90% complete. Well 241-B-10 was completed and has a depth of 150 feet. Wells 241-B-11 and 12 were started and completed, both having a completed depth of 150 feet. Footage on all wells drilled to date totals 4,074.

Project C-133 - Special Test Wells. Well 361-B-2 was completed and has a depth of 322 feet. Wells 361-B-4 and 5 were started and have present depths of 300 and 218 feet respectively. Footage on all wells drilled to date totals 6,732.

Project C-166 - HNO3 Tank Farms for 200-East and 200-West Areas. Work Order D-69168 - Excavation for bases and footings at 211-B is 50% complete.

Project C-228. Work Order E-1229 - Grading for Pole Yard - is 55% complete.

b. 200-West

Project C-163 - Additional Process Waste Storage. Work Order D-68002 - Approximately 153 yards of concrete were placed in Diversion Boxes 154 and 155. Work Order D-68009 - Excavation of Catch Tanks - Excavation of Catch Tank 154 is 85% complete and Catch Tank 155 remains about 65% complete as approximately 4,000 cubic yards of earth have been removed. Work Order D-68010 - Excavation of Waste Line Trench from 221-T Building to Diversion Box 155 - was completed to fine grade as 125,000 cubic yards of earth have been removed. Excavation of Waste Line Trench extending from Diversion Box 155 was begun and approximately 85,000 cubic yards of earth were removed. Work Order D-68013 - Approximately 378 cubic yards of gravel were moved to the Concrete Mixing Plant site. Five hundred seventy one cubic yards of concrete were placed in the Waste Line Trench which extends from 221-T Building to Diversion Box 155, and 52 cubic yards were placed in 25 encasement cover forms.

Project C-166 - HNO3 Tank Farms for 200-East and 200-West Areas - Two 18,000 gallon storage tanks were set at 211-T Building. One tank base was poured using 15 cubic yards of concrete.

c. 300 Area

Project C-142 - Addition to 314 Building. Work Order D-69481 - Excavation and backfilling for Storage Platform - was completed.

Project C-187. Work Order D-68801 - Excavation and Concrete Work for 321 Building - Excavation has been completed and 20 cubic yards of concrete were placed. This work is approximately 92% complete.

Project C-189 - Structure to House 2 MEV X-Ray Machine. Thirty cubic yards of concrete were placed. Our portion of this project is approximately 45% complete.

Project C-208 - Change House Enlargement 3707-A. Work Order D-68236 - Mixing and placing of concrete was completed.

Work Orders D-51253, D-51277, and D-51280 - Excavation and backfilling for resetting of Steam Line Poles - was completed.

d. 700-1100

Project C-138 - Automatic Dial Exchange, 702 Building. Excavation was completed and 16 cubic yards of concrete were placed. Our portion of this work is approximately 18% complete.

Project C-148 - Combined Maintenance Shops, 700 Area. Mixing and placing of concrete is approximately 98% complete as 180 cubic yards were placed during the month.

Project C-167 - Commercial Laundry, Addition to Equipment Room. Work Order D-69621 - Six cubic yards of concrete were placed and this job is now approximately 35% complete.

Project C-200 - Watter Supply, BX Telephone Exchange. Excavation for sewer line was completed and all backfilling has been completed. Our phase of this project is complete.

Project C-202 - Gate House and Parking Lot 700 Area at Stevens Drive and Swift Boulevard. Sewer line excavation and backfilling on gate house was completed. Excavation for storm drain is 75% complete. Excavation for water lines is approximately 55% complete.

Work Order E-2614, Code 1302. Well 1100-1 was started and finished during the month and has a completed depth of 100 feet.

e. 3000 Area

Work Order E-2721, Code 3023-E and Work Order E-2595, Code 1302. Wells 3000-1 and 2 were started and finished during the month and have completed depths of 68 and 100 feet respectively.

2. Village Services

Winter weather did not permit much progress on the various projects involved before the transfer of this function to the Service Department was effected, hence their status remains approximately as reported in January.

EQUIPMENT CONTROL

1. Thirty-two units of equipment were transferred to the Construction Department on P.I.T.'s making a grand total of 198 units transferred to date.

2. Requisitions for 124 units were cancelled. Some were for items not available and the others are to be reordered at a later date.

3. There are 867 units of equipment presently on order as 131 units were requisitioned during the month. Thirty-seven units were received on orders placed prior to February 1, 1948, and four units were received on requisitions placed during the month.

5)

TRAFFIC DIVISION

1. The Interstate Commerce Commission, Division 2, by an order in Investigation and Suspension Docket No. 5292 - "Free Time for Unloading at Hanford, Washington" - has discontinued the proceeding. It vacated and set aside an order of March 27, 1944, in which Division 2 entered upon a hearing concerning the lawfulness of rates, charges, regulations, and practices in connection with schedules providing free time for unloading at Hanford. The order said the record showed the schedules under investigation to be just and reasonable.

2. Truck increases ranging from 5% to 25% were granted by the Washington Department of Transportation on Washington intrastate traffic, effective February 23, 1948. Similar increases were authorized by the Interstate Commerce Commission on movements between Oregon and Washington, effective March 3, 1948, and between California and Washington effective March 11,1948.

3. As a result of our request to the carriers, the Great Northern and Milwaukee Railroads have agreed to publish a rate of 22½¢ per cwt. subject to X-162 increase, on Liquid Asphalt in tank cars from Portland (Willbridge) Oregon to Hanford, Washington. The rate will be effective April 3, 1948, and will effect savings of 13.6¢ per cwt. or approximately $109.00 per car.

4. At our request, dated February 23, 1948, North Coast and California Lines have altered descriptions in items carrying rates on railway track material old and new from California points to Hanford, also from Portland and Seattle to Hanford to include items not formerly provided for.

5. Because an order for 2,900 tons of castings, both rough and machined, was placed at Portland, proposal was submitted on February 10, 1948, to the Milwaukee Railroad for a reduced rate on machined castings and rate of 32¢ per cwt. subject to X-162 increase, minimum 50,000 lbs. became effective March 2, 1948, on shipments routed GN-Milwaukee. This will result in a savings of 31.3¢ per cwt. or approximately $250.00 per car. A purchase order has since been placed with a Seattle firm for approximately 500 tons more and the Milwaukee has secured approval to include Seattle and Tacoma on the same basis effective March 5, 1948.

6. Pursuant to our request of November 19, 1947, North Coast-California Lines have agreed to publish a rate of 56¢ per cwt subject to X-162 increase on Iron and Steel Pipe, minimum 80,000 lbs. from San Francisco to Hanford, effective on statutory notice. This will result in a savings of 20.6¢ per cwt. or approximately $165.00 per car.

7. As a result of an original request by the Du Pont Company, dated December 3, 1943, and our repeated efforts since that time, the Milwaukee Railroad and the Great Northern Railway have placed Portland-Hanford class and commodity rates on the same basis as Seattle-Hanford, effective February 11, 1948. This is a reduction of from 8.8¢ to 40.8¢ per cwt.

8. Due to our request of December 26, 1947, the Milwaukee Railroad reduced their Class Rates between Spokane and Hanford to Spokane-Kennewick basis, which will effect savings from 3.7¢ to 14.8¢ per cwt.

9. In line with our informal request of January 2, 1948, the Great Northern and Milwaukee Railroads agreed to a reduction in the rate on lumber between Portland and Hanford from 31¢ to 26¢ effective March 11, 1948. Intermediate points between Seattle and Portland on the Great Northern and Milwaukee were reduced to 26¢ also. In addition to the reduction from points named, this will have the effect of lowering rates from most Oregon points approximately 6¢ per cwt. In the same docket the Milwaukee lowered the rate from Spokane from 26¢ to 25¢ per cwt. All rates noted above include X-162 increase.

10. On our request dated November 19, 1947, North Coast-California Lines have approved a rate of 75¢ per cwt, minimum weight 40,000 lbs. subject to X-162 increase, to apply from San Francisco and Port Chicago Groups to Hanford on Plaster Grounds and other Iron and Steel Articles, effective on statutory notice.

11. After repeated attempts to have the carriers protect the California-Kennewick bases of rates between California and Hanford, agreement was finally reached by the Santa Fe, Western Pacific, Great Northern, and Milwaukee Railroads to protect carload rates named in PFTB Tariff No. 1-S applicable from (or to) Kennewick Washington, on all carload traffic from (or to) Hanford, Washington. This blanket adjustment in rates to Hanford will apply only in connection with routes via Bieber, California, and only in connection with traffic originating at, or destined to, points on the ATSF, SN, TS, or WP, and becomes effective March 15, 1948.

12. Our request of December 24, 1947, resulted in the reduction of Transcontinental Class Rates between Eastern Groups and Hanford to the Kennewick basis. These rates will become effective April 1, 1948, and will result in savings up to 48.2¢ per cwt.

13. North Coast Docket No. 3471-6 submitted January 22, 1948, proposed a rate of 15¢ per cwt. including X-162 increase, on Slag Residue from Tacoma and Seattle to Hanford and was approved February 11, 1948, to become effective February 22, 1948.

14. A rate of 75¢ per cwt. subject to X-162 increase on Liquid Oxygen Gas in tank cars, from the San Francisco Group to Hanford, submitted January 2, 1948, was approved by the North Coast-California Lines effective on statutory notice. This is a reduction of 51.9¢ per cwt. or a savings of approximately $311.00 per car.

15. Under Docket J-137, submitted December 15, 1947, North Coast-California Lines approved rates of 75¢ and 137¢ per cwt. including X-162 increase on Aluminum Articles described in PFTB Tariff No. 1-S, Items 4353 and 4352½ respectively, from Los Angeles to Hanford. These rates will become effective on statutory notice and will effect a savings of 49.4¢ and 97.6¢ per cwt. respectively.

16. In accordance with our request of December 15, 1947, the carriers have reduced rates on coal effective March 24, 1948, from Wyoming points as follows:

			Slack	Other
			Cents per Net Ton	Cents per Net Ton
From:	Kirby	Group 1	433	458
	Sheridan	Group 2 (Kleenburn)	421	446
	Wyodak	Group 3	446	471

Rates subject to X-162 increase.

This will be a savings of $1.29 per net ton, or approximately $64.50 per car on all coal moving from these Groups on and after March 24, 1948.

17. Rates on cement from Irvin, Metaline Falls, and Spokane, Washington to Hanford, Washington, were reduced to 18¢, 28¢, and 18¢ per cwt. respectively including X-162 increase, effective February 25, 1948. This is a savings of from 1.2¢ to 4.8¢ per cwt. On the outstanding construction contracts which have been negotiated as a result of this reduction, a savings in the cost of cement amounting to approximately $30,600.00 has been realized.

18. As a result of rate reductions secured from the carriers there was a total saving in freight charges for the month of February amounting to $5,158.80. This makes a total saving to date of $273,118.98.

[redacted]

HEALTH INSTRUMENT DEPARTMENT

FEBRUARY 1948

Organization

The composition and distribution of the force as of 2/29/48 was as follows:

	100-B	100-D	100-F	200-W	200-E	300	700	P.G.	Total
Supervisors	0	1	3	7	4	13	5	0	33
Engineers	1	3	6	12	13	6	0	2	43
Others	0	13	18	47	23	47	7	15	170
Clerical	0	0	0	0	0	2	2	0	4
Total	1	17	27	66	40	68	14	17*	250

*Includes 12 in Training School.

Number of Employees on Payroll	February
Beginning of month	239
End of month	250
Net Increase	11

The total increase was derived by the addition of an Industrial Hygienist, four inspectors (for engineer training), four helpers for the critically short film badge program, and ten laborers for the badge and pencil routine. This was offset by five terminations and three long-term removals from the payroll.

C. M. Patterson and C. C. Gamertsfelder became Assistant Superintendents of the H. I. Operational Division, and Control and Development Division, respectively.

General

The course of lectures for the Institute of Radiobiology and Biophysics was completed on February 11.

The first section of the H. I. Lecture Series was also completed, and the trainees assigned to field work.

Health Instrument Department

A series of studies of H. I. procedures was initiated for the purposes of

1. Effecting economies where possible
2. Detecting omissions in the program that should be corrected.

Two such studies, one on routine film badges, and one on special film work were issued.

The active particle contamination in the Separations Plant Areas continued to command much attention. Since the replacement of one fan in each area, the rate of particle deposition has diminished by a factor less than two, whereas the average activity of each particle has diminished by a factor of 5. Recently used photographic methods of detection indicate about ten times as many particles as were found by meter surveys. Whether these weaker particles are capable of producing significant damage is not yet known. Biological monitoring to date has been inconclusive. Some active particles have been found on the filters worn by men in the area. Since new construction work cannot be envisaged with the requirement to wear masks, the feasibility of the present construction plans cannot be tested, until the second fan change has been made. This introduces critical timing into the program.

The plans for the study of the distribution of active material below a crib, by investigations from lateral pipes to a vertical shaft, received a set-back when the shaft flooded with the disposal water. The necessary information can still be obtained by a modified attack; the incident is a reminder, however, that local ground conditions are important in the disposal systems.

There was one instance of major hand contamination requiring a Class 2 investigation (#8 in the Series).

Health Instrument Department

OPERATIONAL DIVISION

100 Areas

Work Permit Summary

	January	February	1948 To Date
100-B	124	102	226
100-D	771	839	1610
100-F	857	987	1844
Total	1752	1928	3680

Retention Basin Effluent

The activity of the water leaving the Retention Basin was as follows:

	100-D	100-F
Power level	275	275
Average beta dosage-rate (mrep/hr)	0.6	0.7
Average gamma dosage-rate (mr/hr)	1.5	1.6
Average total dosage-rate (mrep/hr)	2.1	2.3
Average integrated dose in 24 hrs. (mrep)	50	55
Maximum integrated dose in 24 hrs. (mrep)	58	70
Maximum integrated dose in 24 hrs. (mrep) 1948	58	70

A total of four new leaks was discovered in the effluent water line between the 100-F Pile Building and the Retention Basin. In addition, a cave-in over the effluent line about 10 feet from the main entrance road into the area occurred. Survey readings were low but the areas have been made temporary Danger Zones.

The Power Department began a test in the F Area to determine the optimum number of filters for the process water system. The iron content of the water was only slightly increased and this was not detectable in routine beta checks on the effluent water.

High winds blew water and algae out of the South end of the 100-F Retention Basin. Dosage-rates as high as 50 mrep/hr were reported on the algae.

100-B Area

Nothing but incidental maintenance work occurred during the month.

Health Instrument Department

100-D Area

Unusual difficulty was experienced during discharge of Tube 2464. After the front dummy train was replaced with aluminum slugs, the rear dummy charge and four metal slugs were then discharged, but two of the metal slugs remained on the tip off and prevented entry into the discharge area. Several more slugs were then floated out of the tube by increasing the inlet water pressure to 350 psi. This operation was continued until all slugs on the discharge side of the stuck slug were discharged at which time entrance into the discharge area was possible. The dosage-rate at the end of the tube with the stuck slug still in place was 5 roentgens per hour. The stuck slug was finally dislodged after maintenance cut out the ribs of the tube from the discharge end. Throughout the work total exposures were kept below 50 mrep. After discharging, the tube was borescoped and shielded on the front end. Neutron beams from the shielded end amounted to about 250 mrem per hour, and additional shielding was required.

On a subsequent shutdown, three other process tubes were very difficult to discharge, but were finally freed by the use of splines and the hydraulic charger. Exposure-rates were not excessive.

During the removal of the thimble from the "A" experimental hole and the borescoping of the hole by Technical Department personnel, exposure-rates to personnel were always less than 50 mr per hour. The thimble read 200 mr per hour at about 20 feet and the open hole into the pile, about 5 roentgens per hour.

The ionization chamber in the "D" experimental hole was replaced without incident. The chamber showed a dosage-rate of 12 roentgens per hour at 3 inches. A sample removed from the "B" experimental hole gave a dosage-rate estimated at 10 to 100 rep per hour. Personnel exposure, however, was not great.

During the discharge of poison columns a small piece of metal ($3/4" \times \frac{1}{4}"$) reading about 1 rep per hour, was found in the trough in the discharge area. This was presumably a result of cutting Tube 3183 as it was removed. The piece was recovered and disposed of. During regular discharge operations the nozzle of Tube 4357 showed a reading of 250 mr/hr. This reading disappeared later indicating that some active material had been lodged momentarily in the nozzle.

Several process tubes were emptied, loaded with grooved steel pieces at each end and operated dry. After startup Tube 2186 showed unusually high activity on the front face. The following survey readings (uncorrected for beam size) were obtained:

Gamma	- 80 mr/hr
Slow neutrons	- >50 mrem/hr (jammed BF_3)
Fast neutrons	- 38 mrem/hr

The charge elevator was locked out until conditions were corrected by additional shields.

High airborne contamination was noted again this month in the storage and transfer areas. The condition was partially corrected by increased water flow through the basin.

100-F Area

High neutron fluxes on the experimental level, in the vicinity of the "D" hole, were a serious hazard throughout the month. With water flowing through the thimble, fast neutron readings as high as 39 mrem/hr were reported on the left side of the loading mechanism, but no attempt was made to approach closer and obtain maximum readings. A temporary paraffin shield was installed on 2/14/48 to allow special irradiations by the Technical Department in the "E" hole, but general access to the area was restricted. During the following shutdown a small paraffin and cadmium shielding collar was installed around the base of the loading mechanism and the water flow through the thimble discontinued. After startup slow neutrons in excess of 60 mrem/hr (jammed BF_3) were obtained over a large area near the shielding collar. Fast neutron readings were as high as 225 mrem/hr at 6 inches from the pile face. After additional shielding was installed maximum slow and fast neutron fluxes were 56 and 40 mrem/hr respectively.

Technical Department men removed a sample of U^{238} from the "B" experimental hole and shipped it to the 200 Areas under control of Special Hazards Bulletin #5. Separation of the sample from the aluminum casing was difficult but exposures to personnel did not exceed 50 mr. Four special samples of organic tissue were also removed from the "B" experimental hole and were subsequently shipped off the plant. Exposure-rates were low both during the removal from the pile and during shipment. Special irradiations in the "E" experimental hole were likewise carried out under low exposure-rates.

Tube 0182 was sectioned and removed from the pile. The first cut included all of the grooved steel slugs in the discharge end of the tube and eliminated the contamination problem associated with the removal of these slugs by means of a push pole.

On three occasions it was necessary to remove dummy slugs from the discharge end of active process tubes, once to verify the status of the charge in the tube and twice to facilitate the discharge of stuck tubes. In all three cases this work was carried out with only slight exposure to personnel.

Active gas appeared on the zero level - near side and in the work area probably as a result of a ruptured bellows in Tube 3757. This leak was repaired on the next shutdown by the installation of a neoprene boot. Active gas to the extent of 300 mrep/hr was also observed in the inner instrument room following a break in the circulating system in the gas analysis cell.

Health Instrument Department

200 Areas, T and B Plants

General Statistics

	January			February			1948
	T	B	Total	T	B	Total	To Date
Special Work Permits	372	389	761	290	307	597	1358
Routine & special surveys	325	353	678	288	284	572	1250
Air Monitoring Samples	355	496	851	340	523	863	1714
Thyroid checks	207	171	378	190	159	349	727

Canyon Buildings

The blocks were removed from Section 8 in the T Plant for replacement of a leaky connector. Air samples taken during this work showed two high results with maxima of 2.6×10^{-5} μc f.p./liter and 5.8×10^{-11} μg Pu/cc. In addition, the constant air monitor at Section 19 showed concentrations of 1.1×10^{-6} μc f.p./liter and 3.5×10^{-11} μg Pu/cc. No personnel were in the canyon during this time. A high air sample result was obtained at Section 7 when the blocks were removed from cell 6. The effect was apparently localized as no other air monitoring equipment in the Canyon showed evidence of airborne contamination during this period.

A high air sample result was obtained on a 24 hour sample taken at Section 13 in the T Plant Operating Gallery. No cause for such effect was found and further air samples did not substantiate the high result.

Sampler assemblies in the T Plant were raised and water flushed on four occasions. The work was well controlled and no contamination spread resulted. High exposure-rates were encountered for short periods and no overexposure resulted.

In the B Plant the routine check of tools and gloves, following work on the 6-1A weigh tank drain valve in the Operating Gallery disclosed the presence of f.p. contamination. Further surveys of the tank and line showed rather general low level contamination. The source of this contamination was not determined unless possible blow back from the operating tank.

High air sample results were obtained in the B Plant in connection with opened cells, and removal of the protective paper from the canyon deck.

Control Laboratory

A total of 347 non-regulated items was found contaminated on surveys by Technical and H. I. personnel; about 4 μg Pu were involved, and 40 floor spots. One floor spot occurred when a sample was spilled from its disc

as it was being carried through the corridor from the laboratory to the counting room. Assault masks were used during clean-up of the spill.

Work on Project ANLR #44, conducted in the laboratory, was well conducted and exposures were nominal. The maximum exposure-rate of 5 rep per hour was limited to a few seconds required to transfer the capsule from cask to dissolver.

Twenty-two cases of skin contamination were reported, all of which were reduced. Three instances of shoe contamination occurred and involved plant shoes only.

Concentration Buildings

Three instances of hand contamination occurred in the T Plant in connection with loading out PR cans. Hand decontamination was successful by the usual procedures. In the B Plant, hand contamination was discovered after unloading an RC can. Decontamination was immediately effective.

In the B Plant a slight puncture wound occurred during work in E cell and a rubber glove was punctured during work on the old E-2 centrifuge in the B cell balcony. No skin contamination was detected in either instance. Considerable product contamination was encountered during various jobs in E cell but work was well controlled and no contamination spread occurred.

Stack Areas

Daily checks at the inspection plate of the newly installed #2 fan in the T Plant showed a maximum of 1350 mr/hr during the month. A total of 3,864 Martindale pads was checked with instruments and no contamination found. Random checks of the pads by radioautograph did show indication of activity on 10 samples but there was some possibility of contaminated equipment or faulty film being involved. A rigorous radioautograph program has been instituted. No visual evidence of specks was found on filters removed from the 50 foot stack sampling line.

Waste Disposal Area

A 25 gallon sample of supernate from the 103-T tank was pumped into a specially designed cask mounted in a truck. A maximum surface dosage-rate of 2.3 rep per hour was reported on the rubber tubing during transfer. A maximum reading of 80 mr/hr was reported on the loaded tank and all readings in the drivers seat were below 1 mr/hr.

Contamination was found on the dirt in the bottom of the 154-BX diversion box just south of the canyon at Section 11; presumably due to radioactive "specks" which have settled into it.

Health Instrument Department

Jetting of the 2nd cycle waste from the 112-B tank to the new crib was started on 2/24/48; but was stopped on 2/26/48 when it was discovered that liquid from the crib was running into the nearby sampling shaft.

The Isolation Building

Air Monitoring

There were 187 spot air samples taken, of which 181 were below 10^{-11} µg Pu/cc. The high result of 5.5×10^{-11} µg Pu/cc was obtained during S.W.P. work in Cell 4. Masks were worn. Forty-eight Little Sucker samples run continuously by shifts had as the high result, 1.4×10^{-11} µg Pu/cc associated with the Cell work mentioned above. Ten Big Sucker samples of the 903 exhaust system had as the high result 3.4×10^{-11} µg Pu/cc, obtained during filter change on Cells 6-A and 6-B. In addition 116 special air samples were taken in connection with filter media tests and canister tests.

Surface Contamination

A total of 240 non-regulated items was found contaminated on surveys by Technical, "S", and H. I. Department personnel. Thirteen items above 20,000 d/m and one above 80,000 d/m were reported. There were 21 instances of floor contamination reported, and 6 cases of skin contamination.

Gamma Radiation

P R. Container	9.5 mr/hr (maximum)
Process Hood	2.5 mr/hr (maximum)
S.C.	5 mr/hr (maximum)

The 300 Area

General Statistics

	January	February	1948 To Date
Special Work Permits	155	281	436
Routine and Special Surveys	185	162	347
Air Monitoring Samples	136	112	248

Metal Fabrication Plant

Thirty of 39 air samples taken were above tolerance, summary was as follows:

Health Instrument Department

Location	No. Taken	No. Above 1.5 x 10^{-4} µg U/cc	Maximum Concentration µg U/cc
Extruder Building	15	11	8 x 10^{-4} - Near Cutomatic operators position
Chip Recovery	9	6	8.8 x 10^{-4} - 1st Sorting Table
Oxide Burner	7	5	8.6 x 10^{-4} - Operator's position
Melt Plant	8	8	1.1 x 10^{-3} - Near Furnace

Work on machine inspection and canned metal inspection are now rotated in order to reduce hand exposures. Data indicated that a full days work on machine inspection resulted in a few overexposures.

There were no high hand scores recorded. Two high shoe scores were recorded on personnel who work full time in the Extruder Building.

Technical Building

All air sample results were below 2 x 10^{-11} µg Pu/cc. There were 22 instances of high hand scores, 2 of which were attributed to Plutonium. All were reduced except for 2 cases where no attempt at reduction was made. Three cases of shoe contamination occurred and were cleaned.

Danger Zones were established for certain cribs in the 3722-A Warehouse after 5 stainless steel trays stored there were found contaminated.

Redox Semi-Works Building

Since some plutonium work had been done in this building in the past, analyses were made for this element in process solution. It was felt that perhaps some plutonium had remained in the equipment and was picked up in the Redox process. No evidence of plutonium was found.

Laundry Decontamination and Hand Counting

A total of 108,777 items was monitored in the Plant Laundry, including 42, 192 alpha checks. Also included were 21,247 coveralls, 37,456 gloves, 28,118 overshoes, and 3,622 slacks and jackets.

Fifty-six spot air samples and 35 Big Sucker air samples were taken. The high result was obtained while washing 300 Area operations clothes and was most likely due to uranium. Calculated as U it showed 1.1 x 10^{-5} µg U/cc.

There were 25,478 alpha hand checks, and 44,599 beta hand checks recorded. About 0.13% of the alpha, and about 0.105% of the beta scores were above the warning levels. No attempt at decontamination was recorded in 6 cases of alpha contamination and 7 cases of beta contamination. Where decontamination was attempted, it was successful in all cases.

Health Instrument Department

PEPSONNEL METERS

Pencils	100-B 100-D	100-F	E&N 200	200-W	300	Total	1948 To Date
Total pencils read:	9,767	12,784	27,338	33,819	29,958	113,666	237,649
No. of single readings: (100 to 280 mr)	46	77	111	70	120	424	823
No. of paired readings: (100 to 280 mr)	1	1	0	0	1	3	5
No. of single readings: (Over 280 mr)	96	109	201	53	150	605	1,457
No. of paired readings: (Over 280 mr)	0	1	2	2	3	8	20
Paired readings lost:	3	3	0	2	0	8	13

No significant pencil result was confirmed by the badge result. Investigation of lost readings disclosed no possibility of an overexposure.

Badge Resume, Construction Areas

	105-DR	241-TX	384	Total	1948 To Date
Badges Processed:	9,068	2,873	185	12,126	18,683
No. of readings: (100 to 500 mrep)	1	2	0	3	3
No. of readings: (Over 500 mrep)	0	0	0	0	0
Lost Readings:	4	0	0	4	23

Two lost readings were attributed to lost in processing, one to a light leak, and one to a damaged pocket. One of the readings of from 100 to 500 mrep was traced to use of an x-ray machine in the field.

Badges	100-B	100-D	100-F	200-E	R.R.T. 200-W	200-W	300	Total
Badges Processed:	2,243	3,792	4,010	4,323	726	5,126	6,190	26,410
No. of readings: (100-500 mrep)	0	1	1	2	2	0	130	136
No. of readings: (Over 500 mrep)	0	0	0	0	0	0	0	
Lost readings:	0	2	2	2	0	0	1	7

Lost readings were accounted for as follows:

Badge lost in area - 3
Stuck film - 3
Badge dropped in liquid - 1

In addition 1,500 items of non-routine nature were processed this month for a 1948 to date total of 2,325.

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Health Instrument Department

CONTROL AND DEVELOPMENT DIVISION

Water Monitoring

Three hundred and sixty-nine samples of drinking water were taken during the month. The maximum alpha contamination of six dis/min/liter was found in Riverland and the Lower Knob well. One sample of sanitary water from 200West gave a value of beta activity of 5×10^{-5} μc/liter. This was not confirmed by a resample. There were no other samples that gave beta activity as high as 5×10^{-5} μc/liter.

Eleven test well samples were taken with no detectable alpha or beta contamination.

Sixty-nine samples of Columbia River water were taken with no alpha result as great as 2 dis/min/liter. The maximum beta reading was 1.3×10^{-3} μc/liter from a Hanford sample. Thirteen samples were taken from the Yakima River with no positive result for either alpha or beta activity.

Atmospheric Monitoring

The integrons and "C" Chambers indicated average dosage-rates as follows:

Location	Integrons (mrep/24 hours)		C Chambers (mrep/24 hours)	
	January	February	January	February
100-B	0.6	0.3	0.4	0.3
100-D	1.0	0.3	0.4	0.4
100-F	0.9	0.9	0.4	0.4
200-W	0.3	0.3	0.4	0.3
200-E	0.8	1.0	0.6	0.4
Riverland	0.7	1.2	---	---
Hanford	0.6	1.0	---	---
300 Area	< 0.1	1.3	0.4	0.3
700 Area	< 0.1	0.8	---	---
Kennewick	0.1	< 0.1	---	---
Pasco	< 0.1	0.1	---	---
Benton City	< 0.1	0.1	---	---

The increase in dosage-rates to the south of the 200 Area is confirmed by detachable chambers and air filter readings. The average readings in the TX Area, 105 DR, White Bluffs, and Hanford with detachable chambers were 0.56, 0.62, 0.63, and 0.67 mrep/24 hours respectively. The maximum eight hour reading on a CI unit was 7×10^{-7} μc I^{131}/liter in the 200 East Area. The highest average concentration for the month was 2.3×10^{-9} μc/liter in the 200 East Area. Forty-five rain samples and thirty-four snow samples were collected. The maximum rain sample was 0.011 μc/liter from the 200 West Area. The maximum off-area sample was 1.2×10^{-3} μc/liter from Riverland.

Health Instrument Department

Land and Vegetation Contamination

The vegetation contamination shows a slight increase on the reservation.

Location	Average for January	μc I^{131} per kg. February	
		Maximum	Average
North of 200 Areas	0.05	0.24	0.07
Near the 200 Areas	0.18	3.18	0.24
South of 200 Areas	0.06	0.39	0.08
Richland	<0.04	0.13	0.06
Pasco	0.04	0.08	<0.04
Kennewick	0.04	0.11	0.04
Benton City	0.04	0.12	0.07
Richland "Y"	0.04	0.06	0.04
Hanford	0.04	0.10	0.05

Twenty-nine samples were collected from M.P. Posts on Rattlesnake Mountain. The average of all samples was 0.07 μc/kg. Twelve samples were collected south of the 200 East Area. The average result was 0.30 μc/kg.

Well Drilling

No significant contamination was detected by field checks from the final well #241 B-12 drilled near the second cycle crib.

The drilling on the last two wells scheduled for the 241-BX Area was completed and the perforations should be completed in about two weeks.

Water samples taken from the three water table wells located at distances of about 500 feet from the 361 B dry well all give positive indications of both alpha and beta activity. The maximum results, found in the 361-B-1 well located to the east of the dry well, were 7.2×10^{-3} μc/liter for beta and 186 dis/min/liter for alpha. Two other wells are being drilled at distances of 1000 feet but these are not yet completed. In one of these new wells the casing separated at a weld about 70 feet from the bottom. The remainder of the well will be put down using smaller casing.

No significant contamination was found in a water sample from well #224-T-4 or in soil samples taken 20 feet beneath the 241-T crib.

Bio-Assay

Four hundred and sixty-six samples were analyzed for plutonium. One resample was necessary this month because of a high result. Fifteen resamples were necessary because of a low spiked sample accompanying the set. The two resamples not completed from December have been

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processed and gave less than 0.6 d/m. The one resample from last month has been processed and gave a result of 0.62 d/m which is comparable to the original value. It is believed that this result is due to contamination in the process and a third sample will be obtained. A spiked sample was sent through the process unknown to the workers and gave a result within the statistical limits of the process.

Forty-four urine samples, forty-nine water samples, and ninety-two Hexone samples were analyzed on the fluorophotometer. Three urine samples gave greater than 10 µg/liter. These men are being resampled. A series of analyses was made on urine spiked to 11 µg/liter. The fifteen results had a standard deviation of 7% while the standard error from the true value was 13%. This indicates that the instrument is capable of detecting at least 10 µg/liter in urine.

Biological Monitoring

Some of the tissues have been examined from the first testicular implant which was obtained after 37 days exposure. The testicle tissue within 1 mm. of the speck is definitely void of sperm with some evidence of tissue damage. The region to 5 mm. shows definite damage in quantity and quality of sperm. The control testis was normal. A second rabbit with a testicular implant of an active speck was sacrificed after a period of 65 days. No gross changes were observed and the tissues are not yet prepared for study.

A female Pekin duck was sacrificed and all tissues except thyroid and lung were higher than have been obtained previously. Significant values were; thyroid 0.6 µc/kg, bone 0.12 µc/kg, pancreas 0.06 µc/kg, liver 0.046 µc/kg, kidney 0.036, spleen 0.035 µc/kg, muscle 0 02 µc/kg, blood 0.013 uc/kg and lung 0.002 uc/kg. Egg yolk from this duck had 0.065 µc/kg while other egg yolks checked had about 0.05 µc/kg. No activity has been found in egg albumen.

Data on decay of activity of an algae sample has been obtained for a period of 410 days. Analysis of the data shows that 50% of the original activity was due to 14.8 hr. Na^{24}, 35% has a half life of about 15 days, 10% has a half life of about 100 days and 4% has a very long half life.

Fish Laboratory

Studies on the effect of exposing chinook salmon to concentrations of area effluent water ranging from one part effluent to five parts river water to one part effluent to two-hundred fifty parts river water have been continued. Fish subjected to 1:5 or 1:10 concentrations of the area effluent water have shown an increased mortality and retarded growth rate. Dichromate at the strength present in the process water (2.0 p.p.m.) arrests development of the young fish before they are ready to start feeding and causes a high rate of death. New stocks

of fish have been started in refrigerated retention basin water and in pre-pile process water where the original stocks had succumbed.

About fifteen percent of the adult rainbow trout being subjected to the half strength 107 basin water have now spawned and their eggs are developing slowly in the laboratory. Warmer weather will hasten the spawning of the other fish.

Since copper sulfating of the 107 Basin has been considered some tests are being run on the tolerance of young salmon to this chemical. Strengths of 2.0 p.p.m. ($CuSo_4.5H_2o$) and 1.0 p.p.m. are soon lethal and mortalities have started after exposures of four or five days at the 0 5 p.p.m. level. A strength of 0.2 p.p.m. is not quickly lethal but appears to inhibit growth of the fish.

The sampling of algae, higher aquatic plants and invertebrate animals living on the bottom of the Columbia River in this vicinity has been continued and accentuated since the river is now at the lowest point of the season. Collections of representative specimens have been transplanted to the laboratory where studies can be continued. Routine sampling of Columbia River fish for activity also continues, being facilitated by better conditions.

Methods Development

The measurement on the $C^{14}O_2$ content of the 100-D pile gas is somewhat ambiguous because of the interference from the S^{35} present in the gas stream. Average values of approximately 10^{-2} μc/liter of soft beta emitters are found in the gas from 100-D. One sample from 100-F gave 4×10^{-3} μc/liter. This difference is not believed to be significant. Attempts are now being made to separate the C^{14} from the S^{35} by chemical means. Several 10 ml. samples of Hexone spiked with plutonium and fission products were burned to determine the hazard of disposing of waste solvent by this means. Less than 0.5% of the fission product activity was found in the gas, condensate, or soot. Results on the plutonium carryover are not yet available. Consistent yields of 70 -75% are being obtained in the development of a procedure for routine ether extractions of water samples. Work has been started to evaluate the fission product extraction. Some time has been spent with the Physics group in evaluating the geometry of Eck and Krebs GM counters and in assisting in the neutron experiment at 100-D. Preliminary designs for a device for checking mica window GM tubes before use and for a sample changer for the beta counters have been made.

Instrument Development

A successful light weight portable poppy has been built using a charged condenser as the high voltage source. The unit weighs 2¼ pounds without a probe and has counted a 5000 d/m source continuously for 4 hours without recharging. Five more units are being constructed so that a thorough

field check can be given.

The water curtain beta monitor for the 107 Basin effluents has been given some additional shielding and now has a background of about 150 c/m which does not build up with continued operation. The active water gives an additional 450 c/m which is quite usable.

The "Neut" survey meter for fast neutrons proved to be unsatisfactory for use in the field because of the long waiting period necessary when ranges were switched on the instrument. Recent changes in the method of switching have been made which permit readings to be taken more rapidly.

Physics

The entire time of this group was spent in planning and carrying out an experiment in the neutron beam from the "B" hole in the 100-F pile. The experiment was done on February 27 with the aid of additional personnel from the Methods group, the Survey branch and the Technical Department. The data has not yet been analyzed.

Calibrations

One new 500 mg radium source was received. This will facilitate high level calibrations with gamma radiation uncomplicated by the presence of neutrons which are obtained with our present large mixed radium beryllium sources.

Health Instrument Department

The routine calibrations were:

RADIUM CALIBRATIONS	Number of Calibrations January	Number of Calibrations February
Fixed Instruments:		
Gamma	513	528
Portable Instruments:		
Alpha	50	55
Beta	51	87
Gamma	392	340
X-ray	1	3
Neutron	28	4
Total	522	489
Personnel Meters:		
Beta	1,120	1,162
Gamma	8,541	8,659
X-ray	8,442	2,774
Neutron	4	18
Total	18,107	12,613
GRAND TOTAL	19,142	13,630

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HW-7191 Dec

Medical Department

February, 1948

General

There was no evidence of occupational disease or injury as a result of exposure to radiation.

Dr. Herman Smith, hospital consultant, spent two days here working on the final plans for extension of the medical facilities.

Mr. L. G. Koch attended the annual meeting of the California Mosquito Control Association.

Dr. H. H. Pitluck attended the national dental meeting in Chicago and interviewed a number of potential medical employees in Chicago.

Absenteeism due to sickness of weekly employees increased to 1.59% and was on the upgrade at the end of the period due to a moderate number of influenza cases in addition to the usual winter illness.

Employment examinations remained high though 20% less than for January. Treatments in the ten first aid stations increased to 13,134.

Industrial examinations of all types were more than double those of February, 1947, while first aid treatments were more than three times those of the corresponding month in 1947.

Sixteen major and sixty-four sub-major plant injuries were treated. One of the major and four of the sub-major injuries were to G. E. employees.

The health topic of the month, "Heart Disease", was timed to coincide with the national publicity campaign on this subject.

Satisfactory progress was made on the North Richland Medical Center, and it is expected that some of the facilities will be available for use during the latter part of April.

The average daily hospital census was 106.7, a new high, with a peak day of 124. This compares with a daily census for February, 1947 of 63 patients.

Clinic visits remained about the same as for the previous month, but were up 40% as compared with the corresponding month in 1947. More than 200 medical and about 100 dental patients are being treated daily in the outpatient clinic.

There were 172 new cases of mumps reported, and the incidence of influenza was high.

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Medical Department

Plant Medical Division	Jan. 1948	Feb. 1948	Year to Date
Physical Examinations			
Pre-employment (G.E.)	355	295	650
Annual	0	1	1
Sub-contractors & Food Handlers	3911	3481	7392
Rechecks	790	629	1419
Interval Rechecks (Area)	838	767	1605
Terminations & Transfers (G.E.)	102	109	211
Government	13	13	26
Assist to Ins. Unit, Clinic, etc.	0	0	0
Total	6009	5295	11304
Laboratory Examinations			
Clinical Laboratory			
Pre-employment, terminations, transfers	19248	15483	34731
Annual	0	6	6
Rechecks (Area)	4240	3905	8145
First Aid	54	23	77
Plant Visitors	12	0	12
Clinic	2370	2149	4519
Hospital	3039	3233	6272
Public Health (Inc. Food Handlers)	546	493	1039
Total	29509	25292	54801
X-Ray			
Pre-employment, terminations, transfers	3583	2791	6374
Annual	0	0	0
First Aid	191	205	396
Clinic	333	205	538
Hospital	244	190	434
Public Health (Inc. Food Handlers)	244	172	416
Total	4595	3563	8158
Electrocardiographs			
Industrial	0	4	4
Clinic	13	2	15
Hospital	13	15	28
Total	26	21	47
Allergy			
Skin Tests	43	53	96

Medical Department

First Aid Treatments	Jan. 1948	Feb. 1948	Year to Date
Occupational Treatments	1670	1694	3364
Occupational Retreatments	4902	5422	10324
Non-occupational (Welfare) Treatments	5637	6018	11655
Total.	12209	13134	25343

Absentee Investigation Report

Total No. calls requested	40	64	104
Total No. calls made	40	64	104
No. absent due to illness in family	0	0	0
No. not at home when call was made	0	0	0

General

Employment examinations decreased from 6009 during January to 5295. First Aid treatments however increased from 12,209 to 13,134, given in a total of 10 First Aid Stations. There were 16 major injuries treated during the month and all occured to sub-contractor employees except for one. A total of 64 sub-major injuries were treated, all to sub-contractor employees except for 4. Some partial permanent disability will result from some of these injuries.

The health topic for the month of February dealt with "Heart Disease". Information on the nations number one killer was prepared and distributed throughout the plant for discussion.

The Absenteeism report was as follows:

Total absenteeism weekly employees all causes	2.22%
Total absenteeism weekly employees illness only	1.59%
Total days lost by male employees due to illness	1,545
Total days lost by female employees due to illness	834
Total days lost due to illness	2,379

The lowest absenteeism was in the Service Department with 1.45% and in the Transportation Department with 1.53%. The highest absenteeism was in the Medical Department with 3.16% and in the Accounting Department with 2.98%.

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[redacted]

Medical Department

Village Medical Division				Jan. 1948	Feb. 1948	Year to Date
Clinic Section	**Men**	**Women**	**Children**			
First Visits	596	278	224	1017	1098	2115
Retreatments	1614	1906	829	4539	4349	8888
Total				5556	5447	11003
Clinic Visits						
Medical				933	1018	1951
Pediatrics				612	700	1312
Surgical				737	639	1376
Gynecological				345	382	727
Obstetric (New)				85	60	145
Obstetric (Recheck)				583	569	1152
Venereal Disease				873	517	1390
Ear, Nose, Throat				364	304	668
Eye				212	274	486
Visits handled by nurses (Hypo, dressings)				227	291	518
Night clinic visits				585	693	1278
Total				5556	5447	11003
Total clinic visits per day				179	188	184
Seen in Well-baby Clinic				205	161	366
Home Visits						
Doctors				127	277	404
Nurses				58	73	131
Total				185	350	535
Kadlec Hospital Section						
Census						
Admissions				514	525	1039
Discharges:						
Surgical				102	114	216
Medical				104	135	239
Obstetric & Gynecologic				93	92	185
Eye, Ear, Nose & Throat				75	83	158
Pediatrics:						
Children				64	49	113
Newborn				52	65	117
Total Discharges				490	538	1028
Patient Days				2766	3098	5864
Average Stay				5.3	5.9	5.6
Average Daily Census				89.2	106.7	97.9
Discharged against advice				3	0	3
One-day cases				75	60	135

Medical Department

Operations	Jan.1948	Feb.1948	Year to date
Transfusions	25	41	66
Eye, Ear, Nose & Throat	26	26	52
Dental	2	1	3
Casts	12	12	24
Minors	68	53	121
Majors	33	38	71
Vital Statistics			
Deaths	3	7	10
Deliveries	52	56	108
Stillborn	1	0	1
Physiotherapy Treatments			
Clinic	85	150	235
Hospital	150	42	192
Industrial:			
Plant	370	355	725
Personal	50	40	90
Total	655	587	1242
Pharmacy			
No. of Prescriptions Filled	2725	2673	5398
Patient Meals			
Regulars	3900	4368	8268
Lights	91	64	155
Softs	1859	1682	3541
Surgical Liquids	98	48	146
Tonsils & Adenoids	113	109	222
Specials	399	1004	1403
Liquids	328	345	673
Total	6788	7620	14408
Cafeteria Meals			
Noon	2537	2307	4844
Night	264	328	592
Total	2801	2635	5436
Nursing Personnel			
First Aid Nurses	35	34	
Clinic Nurses	17	17	
Public Health Nurses	12	13	
Hospital General Nurses	96	94	
Aides & Orderlies	64	59	
Total	224	217	

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Medical Department

General

Total clinic visits remained virtually the same as the figure shown for the previous month. However, this figure shows a 40% increase over February, 1947.

Hospital admissions were slightly higher than last month, but revealed a 77% increase over a year ago. The average daily hospital census was considerably higher than at any previous time.

Public Health Section

Administration	Jan.1948	Feb.1948	Year to Date
Newspaper Articles	12	15	27
Committee Meetings	1	2	3
Attendance	8	12	20
Staff Meetings	1	2	3
Lectures & Talks	0	7	7
Sttendance	0	200	200
Conferences	10	12	22
Attendance	30	28	58
Immunizations			
Diphtheria	45	30	75
Influenza	24	4	28
Rocky Mt. Spotted Fever	0	0	0
Schick Test	0	0	0
Small Pox	45	14	59
Tetanus	8	5	13
Typhoid	1	3	4
Whooping Cough	44	0	44
Total	167	56	223

Social Service

Twenty-one new cases were admitted to the Social Service Section during February, and twenty-one cases were closed, leaving a total case load of fifty-four. Of the cases referred, two were from Public Health, three from schools, five from clinic doctors, one from supervision, and eight from other social agencies. Two cases made personal application.

Sanitation Inspections	127	120	247

Bacteriological Laboratory

G. C. Smear	24	30	54
G. C. Culture	17	24	41
Fungus Culture	8	24	42
Vincent's Examinations	3	1	4
Trichomonas' Examinations	8	17	25

Medical Department

Bacteriological Laboratory (continued)	Jan.1948	Feb.1948	Year to date
Sputum for Tuberculosis Organisms	20	20	40
Bacterial Cultures	46	65	111
Examinations for Parasites	17	24	41
Throat Smear & Cultures	148	103	251
Blood Cultures	5	2	7
Eye Smears	2	1	3
Examinations for Spermatozoa	0	0	0
Quantitative Determin. of Blood Alcohol.	0	0	0
Type for Penumococcus	0	0	0
Treated Water Samples	134	117	251
Untreated (Raw Water) Samples	0	0	0
Milk Samples (Inc. milk,cream,icecream).	175	161	336
Sewage Samples	7	7	14
Examinations for Eosinophiles	5	14	19
Dark Field Examinations	0	0	0
Virulence Tests	0	0	0
Stool Cultures	10	8	18
Total	629	618	1247

Communicable Diseases

Amoebic Dysentery	0	0	0
Chickenpox	28	18	46
Diphtheria	0	0	0
Erysipelas	0	0	0
German Measles	5	17	22
Gonorrhea	2	18	20
Impetigo	3	1	4
Influenza	0	41	41
Measles	2	5	7
Meningococcic Meningitis	0	0	0
Mumps	150	172	322
Paratyphois "B"	0	0	0
Pediculosis	0	0	0
Pinkeye	0	0	0
Poliomyelitis	0	0	0
Rheumatic Fever	0	0	0
Ringworm	0	0	0
Sacbies	1	17	18
Scarlet Fever	1	0	1
Syphilis	15	20	35
Thrush	0	0	0
Tuberculosis	0	0	0
Vincent's Infection	0	0	0
Whooping Cough	13	4	17
Total	220	313	533

Total No. Nursing Field Visits	1173	1456	2629

Medical Department

General

Influenza, mumps, gonorrhea, and scabies accounted for the 40% rise of communicable diseases reported. It is felt that there was more influenza in the village than reported--which is manifest by the increased number of home visits by nurses for ill people.

With the opening of the trailer camp in 3000 Area, a nurse was put on duty for this area late in the month. Services offered are similar to what has been established for Richland. Her temporary headquarters are the trailer camp office.

Number of admissions for social service consultation remains hight. Due to this fact, it becomes apparent that it is necessary to add another counselor to the staff. By so doing, better and more intensive counseling can be accomplished by present members.

The condition of the food handling establishments in Richland is approximately the same as last month in that the customer demand exceeds the facilities available. A few physical improvements have been made during the month which have resulted in improvement. A bakery addition to one of the grocer stores commenced operations the latter part of the month and at this time appears to be operating satisfactorily.

There remains many physical inadequacies and deficiencies in the two Mess Halls at North Richland, which have a direct bearing upon the sanitary operation of these establishments. With the exception of a few items the operator has been doing a satisfactory job so far as possible under existing conditions.

With the exception of inconsistencies in procedure and apparent inability to procure sufficient personnel, the barracks sanitation is progressing satisfactorily. A consistent program of barracks room spraying for the prevention of insect infestation has not materialized. Unless this program is instigated in the immediate future, it is likely that considerable difficulty will result. While some effort is being exerted in respect to the limitation and discouragement of cooking in barracks rooms, this practice remains to be of considerable magnitude. Since the barracks rooms were not intended for this purpose, there were no provisions made for such practices. That this action is detrimental is self-evident.

Water samples collected from the new housing sections thus far have indicated efficient sterilization of water lines serving these areas.

Medical Department

General (Continued)

A fourteen day bacteriological sampling period has been recently completed on the Yakima and Columbia Rivers respectively. No significant change was indicated by the bacteriological analyses in comparison with past results.

The standard of the milk supply is being maintained satisfactorily by the suppliers in that high quality producers are being added to meet the increasing demand. Laboratory tests and field inspections have increased as a result, and are indicative of the effort expended toward assuring a safe supply for the village.

Trailer facilities in North Richland were provided for the first time this month and afford a healthful environment for inhabitants insofar as sanitary facilities are concerned. A system of garbage disposal and maintenance of service buildings was commenced from the outset and is satisfactory. This department is working in close cooperation with the camp management to assure the practice of sanitary principles by both the inhabitants and service personnel.

Dental Division	Jan.1948	Feb.1948	Year to date
Patients Treated	2658	2273	4931

HW-9191-Doc

MEDICAL DEPARTMENT PERSONNEL SUMMARY

February 28, 1948

AREAS	Physicians	Dentists	Nurses	Aides & Orderlies	Technicians	Office Workers	Others
Pasco			1				
Hanford			1				
3000			3				1
100-B			)				
100-D			4)		2*	1	
100-F			)		2*	1	
200-E			3		2**	1	
200-W			3		2**	1	
300			2		2**	1	
Plant General	9		9				
700-1100	15	10	132	59	28	97	61
TOTAL	24	10	158	59	31	102	62

* One day per week
** Two day per week

Number of employees on payroll:

Beginning of month	446
End of month	446
Net increase or decrease	0

HW 9141-66

ACCOUNTING DEPARTMENT

February, 1948

GENERAL

Volume continued to increase but work is current. A great deal of time was required in connection with construction subcontracts, including previously executed subcontracts and subcontracts now being prepared.

STATISTICS

General	February	Total to Date
H. W. Instruction Letters issued	3	68
Office Letters issued	--	30
Organization Announcements issued	9	82
Supplements and Revisions issued	3	20

Employees and Payrolls	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	7531	1457	6074
Additions and transfers in	291	41	250
Removals and transfers out	(162)	(16)	(146)
Transfers from Weekly to Monthly Payroll	--	16	(16)
Employees on payroll at month end	7660	1493	6162
Gross amount of payroll	$2 293 877	$647 775	$1 646 102
Average salary rate per hour	$1.815	$2.433	$1.661
Average salary rate previous month	$1.821	$2.410	$1.678
Overtime Payments		January	February
Weekly Payroll			
Number		2 318	2 394
Amount		$37 279	$36 548
Monthly Payroll		$19 428	$19 708
Number of changes in Salary Rates and Job Classifications		648	801

Employee Plans Pension Plan		
Number participating at beginning of month	4 041	4 174
New participants and transfers in	153	99
Removals and transfers out	(20)	(20)
Number participating at month end	4 174	4 253
% of eligible employees participating	97.5%	97.6%
Employees Retired	February	Total to Date
Number	2	17
Aggregate Annual Pensions including Supplemental Payments	$48	$2 730
Amount contributed by employees retired	$120	$ 540

1.

Group Life Insurance	January	February
Number participating at beginning of month	4 797	5 137
New participants and transfers in	418	301
Cancellations	(42)	(52)
Removals and transfers out	(36)	(49)
Number participating at month end	5 137	5 327
% of eligible employees participating	76.4%	75.7%

Insurance Claims	February	Total to Dat
Number of deaths	-0-	11
Amount of Insurance	-0-	$61 405
Amount contributed by employees	-0-	$ 474

Group Disability Insurance - Personal	January	February
Number participating at beginning of month	5 782	6 187
New participants and transfers in	478	295
Cancellations	(18)	(7)
Removals and transfers out	(55)	(90)
Number participating at month end	6 187	6 385
% of eligible employees participating	92.1%	91.0%

Group Disability Insurance - Dependent		
Number participating at beginning of month	3 750	3 917
Additions and transfers in	210	130
Cancellations	(17)	(13)
Removals and transfers out	(26)	(38)
Number participating at month end	3 917	3 996

Group Disability Insurance - Claims		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	69	57
Daily Hospital Expense Benefits	90	79
Special Hospital Services	85	70
Surgical Operations Benefits	40	37
Dependent Benefits Paid		
Daily Hospital Expense Benefits	146	82
Special Hospital Services	140	80
Amount of claims paid by insurance company:		
Employee Benefits	$8 421	$7 219
Dependent Benefits	5 128	3 030
Total	$13 549	$10 249

Group Disability Insurance - Premiums		
Personal - Employee Portion	$10 142	$10 853
- Company Portion	6 178	6 590
- Total	$16 320	$17 443
Dependent - Employee Portion	3 474	3 596
- Company	379	398
- Total	$ 3 853	$ 3 994
Grand Total	$20 173	$21 437

HW-9191. CCC

Accounting Department

Employee Plans (Continued)

Annuity Certificates (For DuPont Service)	January	Total to Date
Number issued	1	46

U. S. Savings Bonds	January	February
Number participating at beginning of month	2 346	2 368
New authorizations	68	109
Voluntary cancellations	(34)	(50)
Removals and transfers out	(12)	(76)
Number participating at month end	2 368	2 351
% participating	31.4%	30.7%
Bonds issued - maturity value	$137 200	$140 400
- number	3 513	3 543
Refunds issued	32	38
Revisions in authorizations	51	64

Suggestion Awards	February	Total to Date
Number of awards	16	79
Total amount of awards	$165	$895

Security Slogan Awards		
Number of awards	3	3
Total amount of awards	$ 75	$ 75

Employee Sales Plan	February		
	Total	Major Appliances	Traffic Appliances
Applications received for appliances	94	21	73
Notices of availability of appliances sent to employees	132	8	124
Certificates issued	93	5	88
Certificates redeemed by Richland Electric Company	33	4	29
Certificates voided	7	1	6

Salary Checks Deposited	January	February
Weekly	826	871
Monthly	708	736
Total	1 534	1 607

Special Absence Allowance Requests		
Number Submitted to Pension Board	18	11

Absenteeism (Weekly Paid Employees)		
February 1 to February 29	1947	1948
	2.04%	2.82%

HW 9111-DEC

Accounting Department

Subcontractors' Payrolls Number of Subcontractors Employees on Payroll At End of Month:	January	February
Cost-Plus-A-Fixed Fee Subcontractors		
Guy F. Atkinson Company and J. A. Jones Construction Company	7 286	8 351
Sub-subcontractors		
Newberry-Neon Company	386	634
Urban, Smyth, Warron Company	839	1 054
*Newport, Kern & Kibbe	16	14
*Mohring & Hansen	26	89
*Peninsula House Movers	-0-	82
*V. S. Jenkins Company	32	42
*Lone Pine Roofing & Paving Company	3	-0-
*Graysport Construction Company	-0-	17
*E. L. Knight Electric Company	16	25
*Empire Electric Company	-0-	3
The Kellex Corporation	248	325
Giffels & Vallot, Inc.	51	83
National Carbon Company	171	200
C.C. Moore & Company, Engineers	21	28
Morrison-Knudsen Co., (Tank Farm)	370	454
Sub-subcontractors		
Trowbridge & Flynn Electric Company	8	18
Morrison-Knudsen Co., (Track Maintonance)	96	93
Lump Sum Subcontractors		
C.C. Moore & Company, Engineers	5	4
John L. Hudson	177	117
Sub-subcontractors		
Twin Cities Construction Company	5	5
Payne Plumbing Company	15	8
E. L. Knight Electric Company	34	12
Edmondson's Blind & Shade Company	1	1
Permawall Construction Company	141	96
B. V. K. Heating Company	31	29
Western Sheet Metal	7	2
J. P. Head	2	9
L. D. Reeder	71	66
H. D. Hacker	3	-0-
C. & C. Plumbing Company	8	-0-
Pacific Roofing Supply Company	7	3
Perfect Seal Weather Strip Company	1	-0-
Catlow Transport Company	33	-0-
J. Gordon Turnbull, Inc.	27	45
J. A. Terteling	90	76
Curtis Gravel Company	11	8
John S. Villesvik	1	-0-
G. A. Pherson, Architectural Engineers	3	-0-
Dewitt C. Griffin & Associates	11	8
H. Brandt Gossel & Associates	1	-0-
	10 254	12 000

4. *Lump Sum Sub-subcontractor working under a Cost-Plus-A-Fixed Fee Subcontractor.

4.

Accounting Department

General Accounting	January	February	Total to Date
Charges to Cost			
Payrolls - GE Only	$2,266,819	$ 2,296,866	$ 31,290,224
Other Expenditures & Accruals	8,841,850	10,320,052	51,682,865
Government Cost Transfers	490,639	2,391,049	12,967,375
Gross Charges	$11,599,308	$15,007,967	$ 95,940,464
Less Revenue:			
Village	231,964	230,170	3,776,006
Medical	93,590	66,569	875,068
Telephone	4,396	4,461	119,536
Other	8,148	7,259	83,225
Net Charges to Cost	$11,261,210	$14,699,508	$91,086,629

Payments Made to Subcontractors thru February 29, 1948

	Contract No.	Amount of Contract	Amount Paid To Date	Amount Withheld 2/29/48
Morrison-Knudsen Co., Inc.	PHX-13693	CPFF		
Costs (Track			735,356.03	-0-
Fixed Fee Maintenance)			50,490.00	5,610.00
Atkinson-Jones	G-133	CPFF		
Payrolls			$10,331,220.08	$692,058.04
Materials*			10,953,900.12	-0-
Morrison-Knudsen Co. Inc.	G-110	$1,807,394.25	1,807,394.25	Retainer Paid
X-Ray Products Corp.	G-115	59,238.40	59,238.40	Retainer Paid
Lone Pine Roofing Co.	G-134	52,875.13	52,875.13	Retainer Paid
National Carbon Co., Inc.	G-135	CPFF		
Materials**			1,048,248.69	-0-
Payrolls			4,226.48	-0-
G. A. Pehrson & Associates	G-137	18,700.00	15,895.00	-0-
John S. Villesvik	G-138	3,675.00	768.75	-0-
H. Brandt Gessel & Assoc.	G-139	11,719.50	2,787.50	-0-
DeWitt C. Griffin & Assoc.	G-141	148,330.00	120,147.30	13,349.70
John L. Hudson & Associates	G-142	3,720,857.50	3,151,194.22	324,086.68
Catlow Transport Co.	G-143	310,840.92	295,298.87	15,542.05
Northwest Hauling Co.	G-144	155,403.07	155,403.07	Retainer Paid
Sperry Products	G-147	1,875.00	1,875.00	-0-
The Kellex Corporation	G-148	CPFF		
Advance			200,000.00	
Payrolls			51,338.19	-0-
Catlow Transport Co.	G-149	25,426.00	20,442.50	1,271.30
Giffels & Vallet, Inc.	G-151	CPFF		
Advance			50,000.00	-0-
Payrolls			-0-	-0-
D. A. Whitley Co.	G-152	Rental of Equipment	19,460.57	-0-
Roy L. Bair Co.	G-153	Rental of Equipment	25,637.50	-0-
Morrison Knudsen Co., Inc.	G-160	CPFF		
Payrolls			195,359.90	21,841.33
Materials			-0-	-0-
			$29,343,557.55	$1,073,759.10

* Amount Paid includes Provisional Reimbursement in the Amount of $9,958,851.88 of which $8,175,269.54 was liquidated by audited Atkinson-Jones billings.

** Amount Paid includes $700,000.00 in advances.

General Accounting (Continued)

Construction Commitments and Expenditures	Commitments	Expenditures
July 1, 1947 to January 31, 1948	$55,252,986	$25,610,697
July 1, 1947 to February 28, 1948	63,171,163	34,565,353

Number of Accounts Payable Vouchers Entered	January	February
General Electric	4,474	4,617
du Pont	22	6
Total	4,496	4,623

Amount of Accounts Payable Vouchers Entered		
General Electric	$ 9,374,528.15	$10,544,843.82
du Pont	8,374.70 Dr.	3,170.90
Total	$ 9,366,153.45	$10,548,014.72

Amount of Checks Issued		
General Electric	$10,036,885.61	$10,281,531.41
du Pont	1,486.04	5,454.57
Total	$10,038,371.65	$10,286,985.98

Number of Checks Issued		
General Electric	3,303	3,133
du Pont	5	11
Total	3,308	3,144

Public Vouchers (1034) Submitted to AEC		
Vouchers not reimbursed at beginning of month	$ 4,056,487.03	$ 5,222,245.98
Vouchers submitted for reimbursement during month	9,407,416.94	10,834,637.77
	13,463,903.97	16,056,883.75
Vouchers reimbursed during month	8,241,657.99	7,567,072.04
Vouchers not reimbursed at end of month	$ 5,222,245.98	$ 8,489,811.71
Number of vouchers not reimbursed at beginning of month	71	135
Number submitted during month	316	255
	387	390
Number reimbursed during month	252	257
Number of vouchers not reimbursed at end of month	135	133

Public Vouchers not Submitted to AEC		
Pre-Audit Vouchers (1035) Issued	$ 4,108,714.34	$ 3,380,787.19
Pre-Audit Vouchers (1035) not Issued	5,707,546.48	8,001,291.90
Total Unbilled Items	$ 9,816,260.82	$11,382,079.09

General Accounting (Continued)	January	February
Public Vouchers Not Submitted to AEC		
Number of Pre-Audit Vouchers Issued Awaiting AEC Approval	98	139
Items Over 60 Days Old Not Billed to AEC on Public Voucher (1034)		
Accounts Payable	$302,961.56	$347,113.16
Accounts Receivable	500.10	4,029.20 Cr.
Freight	5,692.64	23,693.59
F.O.A.B. Taxes - Employer's Portion	25,446.68	-0-
Payroll Deductions		
Elfun Trust	2,105.00	-0-
F.O.A.B. Taxes	25,809.82	4,030.92
Telephone	11,266.20	-0-
U.S. Savings Bonds	89,238.50	-0-
Salaries	1,073,261.20	275,516.09
Subcontractor's Payrolls	177,700.46	190,949.83
Subcontractors Retainers-Accrued	256,058.66	291,309.49
U.C. Taxes - Federal	117,057.14	1.11 Cr.
U.C. Taxes - State	68,761.78	-0-
Total	$2,155,859.74	$1,128,582.77
Cash Receipts - General Electric		
Accounts Receivalbe		
U. S. Government	$8,241,657.99	$7,567,072.04
Rents	74,785.37	65,071.34
Hospital	49,501.74	49,088.52
Telephone	4,986.23	3,951.85
Miscellaneous	4,207.79	1,476.84
Employee Sales	1,797.35	1,242.24
Bus Fares	8,345.60	7,934.95
Educational Program	7.00	282.51
All Other	5,926.49	6,961.51
Total	$8,391,215.56	$7,703,081.80
Cash Receipts - du Pont		
U.S. Government	$ 2,683.07	$ 371.09
Hospital	90.00	44.50
Vendor's Refunds	10,532.36	161.50
All Others	162.51	-0-
Total	$ 13,467.94	$ 577.09

Acc ıting Department

General Accounting (Continued)	January	February
Cash Advances and Expense Accounts		
Cash Advance Balance at end of Month	$ 18,911.59	$ 23,911.04
Cash Advance Balances Outstanding		
Over one month	850.00	656.64
Travel Orders Received	115	113
Traveling and Living Expenses		
Paid Employees	$ 12,555,29	$ 21,624.55
Billed to Government	13,527.87	21,979.98
Balance in Variation Account at end of month	9,995.91 Cr.	10,351.34 Cr.
Kadlec Hospital Accounting		
Accounts Receivable Balance at Beginning of Month	$45,520.28	$ 50,035.85
Total Invoices During Month	70,987.36	66,803.67
Total	$116,507.64	$116,839.52
Less Cash Received and Payroll Deductions	66,471.79	67,022.74
Accounts Receivable Balance at end of Month	$ 50,035.85	$ 49,816.78
Property		
Number of Transfer Notices Received	904	1,055
Number of Items Affected	10,000	11,811
Number of Items Tagged		
New Items	12,298	7,890
Replacements	556	271
Total	12,854	8,161

Inventories	Balance Beginning of Month	Received	Disbursed	Balance end of Month
Essential Materials	2 748 297	352 460	456 408	2 644 349
Memo Employee Sales	7 968	3 814	1 347	10 435
Precious Metals	41 654	143	-0-	41 797
Returnable containers	15 332	1 929	1 778	15 483
Spare Parts	1 499 352	15 647	29 350	1 485 649
Stores for Cash Sales to Employees	32 926	1 411	6 220	28 117
Stores - General	2 117 809	404 037	238 608	2 283 238

Stores	January	February
Number of Items added to Stores Stock	822	1 109
Number of Items deleted from Stores Stock	140	76
Items in Stores Stock at month end	48 792	49 825
Receiving Reports issued	7 455	6 769
Shipments on hand not checked	165	55
Material Exception Reports issued	207	231
Material Exception Reports cleared	197	205

8.

Accounting Department

Stores (Continued)	January	February
Material Exception Reports open at month end	32	58
Certificates of Inspection issued	28	43
Certificates of Inspection cleared	40	38
Certificates of Inspection open at month end	42	47
Store Orders filed	21 845	19 770
Emergency Store Orders filled	3	3
Returnable Containers received	1 903	1 094
Returnable Containers shipped	572	450
Returnable Containers on hand at month end	5 963	6 607
Returnable Containers on hand over 6 months	1 903	1 390
Returnable Container Return Orders received	16	0
Returnable Container Return Orders closed	7	1
Returnable Container Return Orders on hand at month end	236	1
Shipping Orders Received	80	21
Shipping Orders closed	75	25
Shipping Orders on hand at month end	35	4
Purchasing		
Operations Requisitions Received	2 469	2 443
Operations Requisitions placed	2 671	2 223
Operations Requisitions assigned AEC for Procurement		189
Operations Requisitions on hand at month end	719	750
HW Orders placed	1 674	1 387
Alterations issued to HW Orders	192	184
Orders placed by Government	158	118
Orde rs placed for material controlled locally by the Government	3	0
Requests to Expedite received	324	186
Orders placed for Government surplus stock	6	8
Miscellaneous Clerical		
Office Machines repaired in shop	269	300
Office Machine service calls	216	246
Telephone Lines working as Class A	282	321
Telephone Lines working as Class C	329	330
Total Official Telephones	511	651
Telephone Lines Working as Class B-1	1 331	1 306
Telephone Lines Working as Class B-2	86	95
Total Non-official Tele phones	1 517	1 401
Telephone Lines vacant	172	148
Items of First Class Mail received	47 975	40 125
Items of Parcel Post received	1 181	1 009
Items of Registered Mail received	207	203
Items of Insured Mail received	194	149
Items of Special Delivery Mail received	242	201
Amount of postage used on meter machines	$1 719.34	$1 500.94
Multilith orders received	450	182
Multilith orders completed	429	195
Multilith orders on hand at month end	46	33
Mimeograph orders received and completed	2 759	2 212
Ditto orders received and completed	6 167	6 758
Telegrams send	3 584	3 832
Telegrams received	[illegible]	3 940

Accounting Department

PERSONNEL AND ORGANIZATION	January	February
Number of employees on Payroll at beginning of month	621	642
Removals and transfers out	(13)	(23)
Additions and transfers in	34	39
Number at end of month	642	658
Net increase during month	21	16
% of termination	2.1%	3.6%
% of absenteeism	2.8%	4.2%

Reasons for net increase of 16 in number of Accounting Department employees during February are as follows:

General: One employee removed from payroll on illness absence.

General Accounting: One employee terminated from Accounts Payable Section and replacement is not yet obtained.

Monthly Payroll: One employee terminated. Replacement to be obtained.

Sub-contractors' Payrolls: Two additional employees. To handle increased volume of work due to increase in number of employees on payrolls of Sub-contractors.

Cost: Net increase of one employee.
One additional employee added to take care of increased volume of IBM work.
One Assistant Supervisor transferred from Field Clerical to Cost to handle increased volume of work.
One employee removed from payroll in February who was replaced in January as reported on January report.

Stores: Seven additional employees.
To handle increased volume of work.

Clerical: Seven additional employees.
Four employees to handle increased volume of work in Telephone Exchange.
One employee in Printing Section replacing termination in November.
One employee to handle increased volume of work in Office Machine Repair Section.
One employee to replace termination in Telephone Exchange in December.

Field Clerical: Two additional employees.
To replace employees who terminated in December

Injuries	January	February
Major	0	0
Sub-Major	0	0
Minor	22	15

PERSONNEL AND ORGANIZATION (Continued)

Number of Accounting Department employees and open employment requests as of March 1, 1948 were as follows:

	Number of Employees			Open Employment Requests			
				Replacements			
	Non-exempt	Exempt	Total	For Employees Removed	For Employees Leaving	Additions	Total
General	5	7	12	0	0	0	0
General Accounting	109	11	120	9	0	19	28
Weekly Payroll	49	6	55	2	0	1	3
Monthly Payroll	9	2	11	0	0	0	0
Subcontractors' Payrolls	13	1	14	0	0	9	9
Purchasing	25	7	32	0	1	0	1
Cost	26	4	30	0	0	2	2
Stores	206	11	217	1	0	1	2
Clerical	90	4	94	8	3	4	15
Field Clerical	70	1	71	3	2	2	7
Methods	0	2	2	0	0	0	0
Total	602	56	658	23	6	38	67

Open Replacements may be summarized as follows:

Senior Clerk	1
Clerk	4
Junior Clerk	25
Office Machine Operator	8
Telephone Operator	4
Stenographer	5
Typist	3
Office Helper	12
Messenger	5
Total	67

Effective February 1, 1948, Mrs. Ruth Tattu was made Supervisor of the Mail Room Section of the Miscellaneous Clerical Division.

H. E. Scott, Supervisor of clerical for the Transportation clerical work was transferred to Design and Construction Department as of February 23, 1948.

R. B. Keene, Field Clerical Supervisor of the 200 West Area, was transferred to the Cost Department as of February 23, 1948.

The supervision of Shipping Section of Stores Division was transferred to F. M. Engle, Assistant Chief Store Keeper. This move is to consolidate shipping and receiving functions.

SECTIONAL ACTIVITIES

Cost

The original draft of a budget for Operations was prepared by each Operating Department during the month. Based on past operating cost data and personnel presently on the roll this original draft was reduced approximately 10% by the Cost Division in order to make the budget conform with the total estimated expenditures previously reported to the Commission.

A review was made of a large backlog of unbilled Government orders and transfers, some of which are a year old. While these billings have always lagged behind actual receipt and use of materials, this review will be used in an attempt to accelerate billings.

Considerable time was spent in studying the possiblity of maintaining on the IBM equipment all records in connection with the operation and maintenance of automotive and heavy duty equipment used by the Operating Departments. As a result of this study, this function will be transferred from the Transportation Department to the Accounting Department as soon as the necessary skilled IBM personnel can be employed.

General Accounting

Accounts Payable

Work in this Section is continuing to be kept on a current basis. During February, 4617 vouchers were entered and cash disbursements amounted to $10,281,531 (excluding payrolls). At the end of the month vouchers on hand numbered 1648 and totaled $2,800,000.

Unbilled accounts payable vouchers increased from $3,306,733 in January to $5,757,915 in February. This amount is largely represented by unbilled February vouchers which total $4,402,972. Unbilled vouchers over 60 days old amount to $347,113 and of that amount, $164,560 is on Pre-Audit 1035 vouchers.

Provisional reimbursements are being made weekly to Atkinson-Jones. To date, provisional reimbursements total $9,958,851. The unliquidated balance of this amount is $1,783,582, however, only $192,017 represents disbursements made prior to January 1, 1948. Total payments to Atkinson-Jones, including payrolls amount to $21,285,120.

Billings from National Carbon, applicable to their CPFF subcontract, are being processed currently. Other CPFF subcontractors, namely, Kellex Corporation, Giffels and Vallet, Inc., and

Accounting Department

General Accounting

Accounts Payable (Continued)

Morrison-Knudsen Co. Tank Farm, have submitted no billings except payrolls.

There are 9 employees handling subcontractors' billings, 11 handling operations purchase orders, 5 handling construction purchase orders, and 17 handling miscellaneous work for both operations and construction such as files, freight, return orders, payment and discount controls, etc.

Accounts Receivable

Due to the receipt of an unusually large number of approved Pre-Billing Audit Vouchers (Form 1035) the last few days of the month, the Accounts Receivable - U. S. Government balance was increased to $8,489,811. Government reimbursements are usually received promptly and it is expected that this amount will be liquidated early in March.

The hand posting of telephone statements, was continued during the month. A procedure providing for cycle posting of these statements has been completed and will be made effective March 15. This will result in the establishment of four groups of subscribers. Statements will be prepared each week for one designated group. Among the advantages resulting from this procedure is the fact that a certain employee can be made responsible for a definite part of the work, and that the end-of-month rush period which previously existed will be eliminated. This system is used by the Bell System and it is felt that its adoption by us will prove advantageous.

The Rental Unit is currently controlling and collecting rent from 3938 houses, 5953 barracks rooms, 268 trailer spaces, and 38 facilities. Total revenue from these units for February amounted to $257,062.97.

Concurrently with the present method of maintaining control of rent due on village houses, a revised method which was formulated this month, will be maintained in March. If finally adopted, this method will eliminate preparation each month of approximately 150 listing sheets on which has been addressographed the name, house number, and amount of rent due, for each house. This revised method will provide accountability by groups of houses according to rents charged instead of by each individual house.

Only 70 leases covering houses built by Hudson and one lease covering houses built by Atkinson-Jones have been received. Planning has been made with regard to procedures and personnel training to enable this unit to efficiently handle the large increase in volume which must be handled when all houses under

General Accounting

Accounts Receivable (Continued)

construction have been leased.

Billings to the Government

February billings to the government in the amount of $10,834,637 were greater than those of any previous month. In spite of that, the total amount of unbilled charges increased by $1,565,818 to $11,382,079. As total reimbursable charges booked in February amounted to $12,308,459, and cash disbursements in February amounted to $12,107,650, this unbilled amount represents less than one month's volume.

An increase in unbilled accounts payable items of $2,451,182 was practically offset by a decrease in unbilled salaries of $2,245,232. Unbilled subcontractors payrolls increased by $1,616,965. Included in the total unbilled amount of $11,382,079, are unbilled Subcontractors payrolls of $2,756,203, accrued liabilities of $2,295,209, and vouchers in the Government Audit Branch (on 1035) amounting to $3,380,787.19.

Unbilled items older than sixty days were reduced from $2,155,859 in January to $1,128,582 in February.

Cash Advances and Cash Change Funds

A total of $25,564 was issued in the form of cash advances to cover traveling expenses during the month of February. This represents an increase over the amount advanced in January of $6,909. The outstanding balance in the amount of $23,911 includes only four items which were advanced prior to February, for which an accounting is not in process. Employees to whom these four advances were made are on extended trips and have not yet returned to Richland.

The Atomic Energy Commission has approved over 200 subcontractors Travel Orders. Although no billings for subcontractors' travel have been received to date, with the exception of a small number from Atkinson-Jones, a large volume is expected soon. In anticipation of this, a new employee with experience in this work was assigned to the unit last week. There are now two employees processing expense accounts and controlling cash advances.

The 35 active Cash Change Funds aggregate $3,685.

Kadlec Hospital Accounting

Total value of invoices issued in the month of February

[redacted]

General Accounting

Kadlec Hospital Accounting (Continued)

dropped below the January total. In January approximately 9600 invoices were issued totaling $70,987; in February approximately 10,000 invoices were issued totaling $66,803. The accounts receivable balance, totaling $49,816 and representing approximately 1300 accounts is a reduction of $219 from the January balance.

During the month much time was spent in considering the feasibility of new type machines and the revision of certain procedures. Studies of accounting requirements were made by representatives of the Remington-Rand, Burroughs, and National Cash Register Companies, and proposals from each have been submitted for review. In connection with this, M. J. Smith, Accounting Supervisor, and L. C. Pullen, Hospital Business Administrator, went to Tacoma and Seattle to observe methods and procedures in operation at two large hospitals in those cities.

Planning for additional work which will result with the opening of the North Richland Hospital is progressing and is expected to be completed by April 15 when that hospital is scheduled to open.

Property

The 16 field men who were assigned to tagging and recording receipts of Class "B" Property were able to keep this work on a current basis throughout the month. These men were assigned as follows: 2 at Richland, 6 at North Richland, 6 at Pasco, and 2 at other locations.

In every instance where it was practical, decal identification tags were used instead of metal tags. During the month 3498 decal tags and 4392 metal tags were applied.

Volume of clerical work continued heavy. The 24 office employees handled 1055 Property Transfer Vouchers which involved the changing of location records on 11,811 items. This was in addition to other work in connection with analyzing each receiving report issued and the recording of all Class "B" Property received.

Special Assignments

Special work completed during the month included the following:

1. Completion of a survey in connection with fee schedules at the Kadlec Hospital. A detailed report which included certain recommendations was submitted to the

Accounting Department

General Accounting

Special Assignments (Continued)

Medical Department.

2. Recommendations for the better control of cash and a procedure governing the handling of cash change funds was given each fund custodian.

3. Along with a representative of the Atomic Energy Commission the periodic audit was made and redeemed coupons were destroyed at the North Richland Cafeteria.

Miscellaneous Clerical

Arrangements were made during the month for the Post Office to deliver parcel post directly to the Receiving Warehouse. Parcel post was formerly delivered to the Mail Room in the Administration Building and then forwarded to Receiving; thus this change eliminated double handling of this mail. Eleven additional stops were added to the 700-Line Area mail runs during the month to provide service for new offices established during the month.

Two additional leased lines, one to Portland and one to Seattle, were added to telephone facilities during the month. Two additional toll lines to Pasco were installed also. These additional lines will provide some improvement in service, however, long distance traffic service will not be satisfactory until the Pasco Exchange of the Pacific Telephone & Telegraph Company installs additional lines to Spokane, Portland and Seattle connecting points. A manual switchboard for the White Bluffs Construction Area was placed in operation February 23.

The Printing Section moved to new shop facilities in Building 717 from Hutments 722-H and 722-J on February 16 and 17. This move delayed printing orders for about one week, but by the end of the month the Section was back in full production.

Several meetings were held during the month with Oak Ridge Commission and with the Production Departments to discuss Accountablity Records and Reports. As a result of these meetings, revised methods of monthly reporting were adopted and approved by those concerned.

Payrolls

The following "Request for Reimbursement Orders" have not yet been approved by the Atomic Energy Commission:

Accounting Department

Payrolls (continued)

Date of Request	Date Transmitted to Commission	Items Covered by Request
8/26/47	8/27/47	Seven exempt job classifications for Design and Construction
8/26/47	8/28/47	Five exempt job classifications for Construction Purchasing
8/26/47	8/28/47	Exempt job classifications for Expediting Supervisor and Expeditor
9/2/47	9/3/47	Revised job rates for weekly paid employees
9/10/47	9/10/47	Exempt job classifications for Construction Purchasing
9/17/47	9/17/47	Exempt job classification for Service Department

All AEC Forms-37 covering Merit Salary Increases Promotional Increases, Additions to Payroll and Changes in Classifications have been approved by the AEC through the month of January 1948 with the exception of forms covering Design and Construction employees as follows:

	Total	Month Changes Were Effective				
		September 1947	October 1947	November 1947	December 1947	January 1948
Merit Salary Increases	82	22	18	24	10	8
Promotional Increases	70	1	10	3	37	19
Additions to Payroll	242	10	57	98	35	42
Subtotal	394	33	85	125	82	69
Classification Changes	53	--	1	7	5	40
Total	447	33	86	132	87	109

Above forms have not been approved pending approval by AEC of revised salary ranges which are being prepared, by Design and Construction Department.

Monthly Salary Payrolls for the months of September 1947 to and including January 1948 have been billed to the AEC less credit billing which has been prepared for the net amount of Design and Construction monthly payroll in the amount of $391 000 covering months of September 1947 to January 1948 inclusive, which will be rebilled when salary ranges are submitted and approved.

[redacted]

Accounting Department

Payrolls (Continued)

There were no errors reported by the Government Audit Section in connection with the audit of the Monthly Payroll for January. Complete audit by the Government Audit Section of Weekly Payrolls for January revealed the following errors:

1. Page numbers were typed incorrectly on two payroll summaries.

2. In one case the eligibility date was not shown on the vacation payroll.

3. Explanation of adjustments and premium hours was not shown on the Payroll in three cases.

4. Three postings were illegible on the Government copy of the payroll.

5. There were two cases of deductions posted in the wrong column. An incorrect amount was posted as a deduction in one other instance.

6. Hours were posted incorrectly in five instances one of which resulted in underpayment to the employee of $2.00. There were no overpayments.

7. There were six hourly rates shown incorrectly on the Payroll although, in each of these cases the weekly rate was correct. No error in payment occurred in any of these cases. The weekly rate and hourly rate was shown incorrectly in one case, however, gross payment was calculated on the correct rate.

8. There was one error in calculation of the gross payment resulting in an underpayment to the employee amounting to $2.00.

Quarterly Wage and Salary Report was prepared as of January 31, 1948, and submitted to the Atomic Energy Commission in accordance with AEC Regulation Personnel No. 4.

HW Instructions Letter No. 67 was issued on February 23, covering the Requirement of advance written approval of the Superintendent and the AEC for all overtime work for Weekly Paid Non-Exempt Employees.

State Income Tax Returns of "Information at the Source" covering payments by the General Electric Company during the year 1947 to individuals were filed with the various State Income Tax Commissions.

Accounting Department

Subcontractor's Payrolls

During February, audit of Atkinson-Jones payrolls #25 to #28 inclusive, covering the period January 11 to February 7, 1948, amounting to $2,351,960.14 (gross amount to date $8,160,588.29), was completed except for final audit of those manual rates not yet approved and various amounts of overtime for which approvals have not been received.

Atomic Energy Commission Reimbursement Orders Nos. #5 to #9 inclusive, authorizing the rates of pay for various manual classifications being used by Atkinson-Jones were received during the month. Reimbursement Orders covering the rates of pay to twenty (20) remaining classifications are required in order to have complete approvals for all manual rates currently being paid on the Atkinson-Jones payrolls. Of those needed Reimbursement Orders, formal requests have been made through regular channels for seventeen (17) classifications and having received the approval of the Construction Department have been forwarded to the Atomic Energy Commission for approval. The remaining three (3) are still in process by Atkinson-Jones and the Construction Department. A Reimbursement Order approving work isolation pay for Plumbers & Electricians ($2.00 per day for work performed within the barricaded areas) has been received; however, approvals of certain other requests covering travel pay for work performed outside the baricaded areas and payment for overtime worked have been withheld by the Atomic Energy Commission.

A Request for Reimbursement Order covering the Atkinson-Jones policy of regarding time paid to non-manual employees for accrued leave as hours worked when computing overtime for hours worked in excess of forty (40) per week was returned by the Atomic Energy Commission on February 6, 1948 requesting that Atkinson-Jones submit evidence that this was their Company-wide commercial practice prior to their joint venture formed for the undertaking of work under Subcontract G-133. This is the only approval of policy not yet granted concerning the payment of salaries to non-manual employees.

An additional 1528 Personnel Records (12,247 to date) for Atkinson-Jones and their C.P.F.F. subcontractors were processed for accuracy during February. A total of 764 reclassifications for manual employees were also processed during the month.

During February, a total of 372 A.E.C. Forms 37 (2197 to date) requesting salary approvals for Atkinson-Jones non-manual employees were processed for accuracy. Those for employees of a non-exempt status have been approved by the Accounting Department and those covering exempt classifications have been forwarded to the Construction Department for review and necessary approvals and eventual transmittal to the Atomic Energy Commission. To date, no approved copies have been received from the Atomic Energy Commission.

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Accounting Department

Subcontractor's Payrolls (Continued)

Reimbursement to Atkinson-Jones for payrolls during February exclusive of their C.P.F.F. Subcontractors totalled $2,356,260.05, which brings the total reimbursement to date to $8,910,890.48.

During February, audit of Urban, Smyth, Warren Company and Newberry-Neon Electric Company payrolls #15 to 18 inclusive, covering the period January 11 to February 7, 1948, was completed except for final audit of some manual rates not yet approved and various amounts of overtime for which approval has not been received.

Reimbursement to Atkinson-Jones for Urban, Smyth, Warren Company payrolls during February totalled $357,254.83 ($790,646.55 to date) and for Newberry-Neon Electric Company payrolls this month, $211,330.14 ($420,446.55 to date). Reimbursement also effected this month for employer's portion of taxes for Urban, Smyth, Warren Company and Newberry-Neon Electric Company totalled $9,598.23 and $5,245.16, respectively.

Of the various classifications being used by Atkinson-Jones C.P.F.F. Subcontractors, only one on Urban, Smyth, Warren Company payroll and three on Newberry-Neon Electric Company payroll lack approval.

A preliminary audit was performed during February on Morrison-Knudsen payrolls Nos. #8 to #11 inclusive, covering the period January 18 to February 14, 1948 and amounting to $137,321.47 ($217,201.23 to date).

Reimbrusement to Morrison-Knudsen is still continuing on a 90% basis and reimbursement during February was effected in the amount of $123,548.40, which brings the total reimbursement to date to $195,359.90.

Audit of Morrison-Knudsen payrolls, at present, consists only of a mechanical audit and check of time cards against the completed payroll. A complete audit cannot be performed until rates and salary ranges have been approved by General Electric and the Atomic Energy Commission.

A preliminary audit also has been performed during the month on C.C. Moore payrolls Nos. #7 to #10 inclusive, covering the period January 23 to February 20, 1948 and amounting to $9,777.46 ($17,929.79 to date). Approval to make reimbursement to C.C. Moore has not yet been received from the Atomic Energy Commission as the preparation of Appendix C to the C.C. Moore Subcontract is not complete.

No additional payrolls have been received from the Kellex

Accounting Department

Subcontractor's Payrolls (Continued)

Corporation; however, in compliance with the Atomic Energy Commission's approval to make reimbursement on a 100% basis, reimbursement of $8,838.19 previously withheld was effected. This brings the total amount reimbursed Kellex to date to $51,338.19.

During February, an additional forty-seven (47), (317 to date), A. E. C. Forms 37, requesting salary approvals were received from Kellex. Considerable time was spent during the month with Kellex representatives from New York in dealing with the problems connected with reimbursement of their payrolls.

Reimbursement Order #1, approving the 9% increase for the hourly employees (except bricklayers) of National Carbon Company at Morganton, North Carolina, has been received. As the Appendix C to the National Carbon Company Subcontract is not quite complete, reimbursement is still confined to only the payrolls disbursed by the New York office of National Carbon. Reimbursement during February for these expenditures totalled $768.48, which brings the total reimbursement to date to $4,226.48.

Purchasing

A recommendation was made to the Commission that the Purchasing Division be permitted to place purchase orders up to $1,000.00 in value without competition based on the judgement of the Division as to the quality of the material and the prevailing market value at the time of purchase. This recommendation was approved and it is expected that the new arrangement will permit more flexibility of action and at the same time decrease the amount of work involved in placing purchase orders.

In order to eliminate the time required by the Commission Procurement Division to screen all purchase requisitions for materials on the Treasury Procurement Schedule Statuatory Mandatory List, the Commission asked the Purchasing Division to perform this screening work. Under this arrangement, only those requisitions covered by the Mandatory List will be forwarded to the Commission Procurement Division and the balance retained by the Purchasing Division.

After the foregoing arrangement was negotiated the Seattle Branch of the Federal Bureau of Supply completed negotiations with the Commission to exclusively supply this Works with all items of materials except groceries carried in their Seattle Warehouse. The Purchasing Division was then requested by the Commission to screen all requisitions against the Federal Bureau of Supply catalog for material warehoused at Seattle as well as statuatory mandatory items.

It is expected that this arrangement will result in considerable difficulty for the following reasons:

Purchasing (Continued)

1. It is difficult to translate our material specifications which are usually based on standard brand names to Federal Bureau of Supply nomenclature.

2. In thepast we have had considerable difficulty with material supplied by the Federal Bureau of Supply as regards satisfactory material standards, delivery requirements, unauthorized substitutions and an unwillingness on their part to accept return of material which does not meet our requirements.

3. In the event, the material received under this procedure does not meet our requirements, it will then be necessary for us to obtain it in the open market, and in the meantime, we will have lost all the time consumed in obtaining the unsatisfactory material.

Stores

On February 9th the responsibility for the operation of Warehouse Number 3 at Pasco was turned over to the Construction Department, including the responsibility for warehousing and disbursing all materials stored therein. Arrangements were made to screen all Stores reorder requisitions against inventory records of materials stored by Construction at Pasco in order to utilize the material at this location to the fullest extent possible. Most of the material at Pasco is material transferred from Government Surplus Stocks. The physical inventory of Stores stocks was changed from a semi-annual to an annual basis. It was felt that this change was justified on the basis of past records which indicate that stock controls were maintained in an efficient manner. This move effected an approximate reduction of 75% in the number of personnel required for this inventory activity.

Stores inventories and disbursements for the past several months were substantially increased in order to supplement Construction start up material requirements. A program was instituted during the month to reduce these stocks by discontinuing any ordering that was initiated directly or indirectly by the Construction Program.

The Spare Parts Section started a physical inventory of all items carried in Spare Parts division of Stores stock. Status Reports, reflecting the quantitites on hand, on order, maximum-minimum stock levels, and activity, were prepared concurrently with the inventory and submitted to interested Departments. Completion of this inventory will result in an accurate and up-to-date catalog of the 11,000 items carried in Spare Parts and furnish the necessary statisical data to enable the Engineering and Production Departments to recommend removal of excess and obsolete stock items. The method of handling returnable containers was revised during February. Under the revised procedure all empty containers (drums, carboys, reels, etc.) are returned to the Salvage Yard where they are

Stores (Continued)

sorted into lots for disposition in accordance with purchase order terms. Containers that must be returned to vendors are delivered to the Shipping Section for return and all other containers are accumulated in the Salvage Yard for future disposition as directed by the Commission. This revision reduced the paper work incidental to handling returnable containers and also reduced the handling involved in warehousing containers in separate groups according to types and vendors.

Arrangements were made during the month whereby the responsibility for receiving government transferred material at Pasco will be transferred to the Construction Department, effective March 1. It will be necessary that a small force of Stores personnel remain at Pasco until Construction has built up their organization but this should not extend past March 10.

[redacted]

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PROJECT AND RELATED PERSONNEL

GOVERNMENT EMPLOYEES	1-30-48		2-27-48	
Civilian Personnel - Atomic Energy Commission	310		313	
Civilian Personnel- G. A. O.	2		2	
Commissioned Officers	1		-	
Total		313		315
RICHLAND VILLAGE PERSONNEL				
Commercial Facilities	865		899	
Organizations, Clubs, Etc.,	70		88	
Schools	222		235	
Churches	24		24	
Total		1181		1246
MORRISON-KNUDSEN PERSONNEL (Benton City)		93		92
CONSTRUCTION SUB-CONTRACTORS				
Atkinson & Jones	6841		7913	
Newport, Kern & Kibbe	14		14	
John L. Hudson Co.,	200		21	
Twin City Construction Co.,	5		5	
B. K. V. Heating Co.,	31		7	
Chicago Canteen Co.,	337		341	
Dewitt C. Griffin & Assoc.,	11		8	
Catlow Transport Co.,	33		5	
Newberry Neon	409		634	
Urban, Smyth, Warren Co.,	857		974	
Payne Plumbing	8		8	
E. C. Knight Electric	34		23	
J. B. Head Co.,	9		9	
L. D. Rieder	71		10	
H. D. Hacker	4		-	
Kellex Corp.,	248		291	
J. Gordon Turnbull	27		45	
Giffels & Vallet, Inc.,	51		83	
Permawall Const. Co.,	144		25	
Stabberts	7		3	

(continued Page #2)

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CONSTRUCTION SUB-CONTRACTORS	1-30-48	2-27-48
C. & C. Plumbing Co.,	8	-
Morrison-Knudsen Co.,	388	432
Edmondson	1	-
Pierson-Architects	3	3
C. C. Moore	24	29
Mahring & Hanson	25	89
Jenkins Insulating Co.,	25	42
Curtis Sand & Gravel	11	8
National Carbon & Carbide Co.,	186	186
Lone Pine Roofing Co.,	3	-
Trowbridge & Flyn Electric Co.,	8	17
J. A. Terteling & Son	88	65
Graysport Construction Co.,	-	22
Peninsula House Movers	-	67
Estep Electric	-	1
Total	10,111	11,380
GENERAL ELECTRIC PERSONNEL	7,520	7,678
GRAND TOTAL	19,218	20,711