PRIVACY ACT MATERIAL REMOVED

DECLASSIFIED

[redacted]

HW-8931 DEL

12772

727768

#1 - H. A. Winne, Schenectady
#2 - Zay Jeffries, Pittsfield
#3 - C. G. Suits, Schenectady
#4 - D. H. Lauder
#5 - C. N. Gross
#6 - A. B. Greninger
#7 - W. P. Overbeck
#8 - F. W. Wilson
#9 - Area Manager
#10 - Area Manager
#11 - Area Manager
#12 - Area Manager
#13 - Area Manager
#14 - 700 File
#15 - 700 File

February 20, 1948

HANFORD WORKS

MONTHLY REPORT

JANUARY, 1948

This document consists of
239 Pages. No. 9 of
15 Copies. Series [redacted]

PRIVACY ACT MATERIAL REMOVED

DECLASSIFIED

1207994

[redacted]

TABLE OF CONTENTS

The D and F Piles operated at 275 MW throughout January except for scheduled outages. The operating time efficiency was 78.0%. The low operating efficiency reported for the past several months is due to scheduled extended outages in which repairs are being made to corroded Van Stone flanges on pile process tubes. Normally, the piles are operated at 250 MW and 200 MW at D and F; however, they are at present being operated at 275 MW to meet production requirements. Adding of carbon dioxide to the helium gas system of the 100 D Pile began on January 27, 1948.

The first metal waste was jetted to the new 241-BX Tank Farm in the 200 East Area on January 17. Partial replacement of mild steel equipment in the exhaust air system of the 200 B and T Plants has resulted in a marked decrease in the active particles being discharged from the stacks. Thirty-six batches were started through the Canyon Buildings and thirty-four batches were completed through the Isolation Building.

There was one major injury during January and at month-end the plant safety record was twelve days.

Mr. Carroll Wilson, General Manager for the Atomic Energy Commission, visited Hanford Works early in January. At the same time, Dr. Zay Jeffries, General Electric Vice President from Pittsfield; Mr. H. A. Winne, Vice President from Schenectady and Mr. R. S. Neblett, Administrator of the Nucleonics Project from Schenectady were at Hanford.

Dr. Guy Suits, Vice President in charge of the Research Laboratory, Schenectady, visited Hanford Works January 7 and 8.

Effective January 15, two additional Assistant Managers were appointed. Mr. W. P. Overbeck retains his responsibility as Works Engineer and is made an Assistant Manager with specific responsibility for coordinating the Redox program. Mr. F. E. Baker is appointed an Assistant Manager but also retains his responsibilities as Works Accountant.

[redacted]

HW-8931

DECLASSIFIED

STAFF

Manager	D. H. Lauder
Assistant Manager	G. G. Lail
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 Superintendent	A. B. Greninger
P Department Superintendent	J. E. Maider
S Department Superintendent	W. K. MacCready
Assistant Works Engineer	H. H. Miller
Maintenance Superintendent	W. W. Pleasants
Electrical Superintendent	H. A. Carlberg
Instrument Superintendent	H. D. Middel
Service Superintendent	E. L. Richmond
Transportation Superintendent	R. T. Cooke
Medical Superintendent	W. D. Norwood, M.D.
Design Engineering Superintendent	F. W. Wilson

1207997

[redacted]

[redacted]

HW-8931

DECLASSIFIED

FORCE REPORT
JANUARY 1948

	Non-Exempt		Exempt		Total	
	12-31-47	1-30-48	12-31-47	1-30-48	12-31-47	1-30-48
Management	6	6	8	9	14	15
Design	127	131	107	109	234	240
Construction	115	135	190	218	305	353
"P" Department	203	233	54	53	257	286
"S" Department	241	238	59	59	300	297
Technical	249	291	182	192	431	483
Power	416	412	83	86	499	498
Maintenance	942	945	131	130	1073	1075
Electrical	241	242	44	44	285	286
Instrument	138	139	45	45	183	184
Service	1355	1350	236	234	1591	1584
Transportation	822	814	73	73	895	887
Medical	520	540	141	147	661	687
Accounting	569	587	55	56	624	643
Total	5942	6063	1410	1457	7352 569 6913	7520 573 7927

1201998

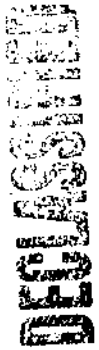
[redacted]

PERSONNEL DISTRIBUTION - JANUARY 1948

	100-C Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
P DEPARTMENT										
Supervisors	2	14	17	-	-	17	-	-	5	55
Operators	10	36	36	-	-	148	-	-	1	231
Clerical	-	-	-	-	-	-	-	-	2	2
Total	12	50	53	-	-	165	-	-	8	288
S DEPARTMENT										
Supervisors	-	-	-	21	29	-	1	-	7	58
Operators	-	-	-	93	131	-	11	-	1	236
Engineer on Assignment	-	-	-	-	-	-	1	-	-	1
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	114	160	-	13	-	10	297
TECHNICAL DEPARTMENT										
Supervisors	-	4	-	6	6	29	-	-	10	55
Chemists, Engineers, Physicists, Jr. Technologists & Metallurgists	-	10	15	4	14	110	-	-	13	166
Laboratorians & Analysts	1	34	58	23	10	59	-	-	-	185
Clerical	-	2	-	-	-	19	-	-	8	29
Others	-	8	6	6	2	25	-	-	1	48
Total	1	58	79	39	32	242	-	-	32	483
POWER DEPARTMENT										
Supervisors	7	23	22	6	10	0	4	5	9	86
Operators	39	95	91	24	35	8	-	26	65	383
Clerical	-	-	-	-	-	-	2	-	1	3
Others	2	5	5	3	4	4	-	-	3	26
Total	48	123	118	33	49	12	6	31	78	498

	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
MAINTENANCE DEPARTMENT										
Supervisors	1	4	11	6	15	6	11	-	34	88
Engineers	-	-	1	1	1	1	1	-	90	95
Mechanics	11	39	70	53	104	62	69	-	267	694
Clerical	-	-	-	-	1	-	1	-	67	69
Others	1	4	10	7	18	15	33	-	41	129
Total	13	46	92	67	139	84	135	-	499	1075
ELECTRICAL DEPARTMENT										
Supervisors	1	2	3	2	2	1	15	-	11	37
Electricians	7	10	17	13	11	11	63	-	47	179
Clerical	-	-	-	-	-	-	-	-	3	3
Others	1	1	2	1	3	1	35	-	23	67
Total	9	13	22	16	16	13	113	-	84	286
INSTRUMENT DEPARTMENT										
Supervisors	1	3	5	2	4	6	-	-	9	30
Engineers	-	-	-	1	-	10	-	-	6	17
Mechanics	4	15	13	12	15	32	-	-	6	97
Clerical	-	-	1	-	-	-	-	-	4	5
Others	2	-	2	1	3	19	-	-	8	35
Total	7	18	21	16	22	67	-	-	35	184
SERVICE DEPARTMENT										
Supervisors	13	7	10	11	9	12	36	25	111	234
Patrolman	52	59	65	81	99	73	22	56	116	623
Laundry Operators	-	-	-	?	-	-	-	-	2	4
Inspectors	7	4	4	4	4	-	1	4	5	33
Janitors	3	7	5	8	12	13	-	140	58	246
Clerical	-	-	-	-	-	-	67	34	138	229
Others	39	-	-	-	13	12	1	26	124	215
Total	114	77	84	106	137	110	127	285	554	1604

	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
TRANSPORTATION DEPARTMENT										
Supervisors	6	2	1	3	3	2	7	-	49	73
Drivers (Based on Areas Served)	13	24	27	32	45	32	23	-	92	288
Mechanics	9	2	1	2	2	-	1	-	82	99
Trainmen	4	4	4	4	4	-	-	-	4	24
Laborers	3	11	2	6	20	8	-	-	132	182
Clerical	1	1	1	1	-	1	-	-	30	35
Others	23	9	12	7	26	-	-	-	109	186
Total	59	53	48	55	100	43	31	-	498	887
MEDICAL DEPARTMENT										
Physicians	-	-	-	-	-	-	9	-	15	24
Dentists	-	-	-	-	-	-	-	-	10	10
H. I. Specialists	1	15	24	38	65	61	18	-	12	234
Technicians	-	1	-	1	-	1	-	-	27	30
Clerical	-	1	1	1	1	3	-	-	99	106
Others	1	4	-	3	3	1	7	4	260	283
Total	2	21	25	43	69	66	34	4	423	687
ACCOUNTING DEPARTMENT										
Supervisors	-	-	-	-	-	-	-	-	56	56
Clerks	1	5	6	6	9	6	-	-	283	316
Telephone & Teletype Operators	-	-	-	-	2	-	-	-	45	47
Others	-	3	3	5	10	10	-	-	193	224
Total	1	8	9	11	21	16	-	-	577	643



	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
DESIGN DEPARTMENT										
Exempt Employees	-	-	-	-	-	-	-	-	109	109
Non-Exempt Employees	-	-	-	-	-	-	-	-	81	81
Clerical	-	-	-	-	-	-	-	-	50	50
Total	-	-	-	-	-	-	-	-	240	240
CONSTRUCTION DEPARTMENT										
Exempt Employees	-	-	-	-	-	-	-	-	218	218
Non-Exempt Employees	-	-	-	-	-	-	-	-	65	65
Clerical	-	-	-	-	-	-	-	-	70	70
Total	-	-	-	-	-	-	-	-	353	353
MANAGEMENT										
Clerical	-	-	-	-	-	-	-	-	9	9
Total	-	-	-	-	-	-	-	-	6	6
	-	-	-	-	-	-	-	-	15	15
GRAND TOTAL	266	467	551	500	745	818	449	320	3404	7520

ARRIVALS AND DEPARTURES OF EXEMPT PERSONNEL

ARRIVALS

Name	Department	Physical Arrival	Origin
Joseph J. McCullough	Design	1-5-43	New
Henry M. Parker	Design	1-9-43	New
Richard P. Ackerman	Construction	1-19-43	New
Donald R. Belknap	Construction	1-5-43	New
John T. Buddington	Construction	1-5-43	New
L. D. (i.c.) Bummitt	Construction	1-2-43	New
James W. Byron	Construction	1-15-43	New
Francis E. Curran	Construction	1-20-43	New
William W. Gordon	Construction	1-15-43	New
Thomas T. Hankman	Construction	1-5-43	New
Walter H. Hill	Construction	1-2-43	New
Forrest H. Hoadley	Construction	1-14-43	New
Joyce R. Kelley	Construction	1-8-43	New
Frank J. Krazel	Construction	1-6-43	New
Ronald A. Macpherson	Construction	1-21-43	New
Sam C. McCluer	Construction	1-26-43	New
William J. Macki	Construction	1-16-43	New
Chester A. Moore	Construction	1-19-43	New
Leland E. Mosher	Construction	1-5-43	New
Charles G. Mumford	Construction	1-21-43	New
Lewis (NMN) Narrow	Construction	1-20-43	New
Alfred I. Nichols	Construction	1-12-43	New
Daniel J. O'Neil	Construction	1-20-43	New
William C. Phelan	Construction	1-15-43	New
Claude S. Powers	Construction	1-5-43	New
Philip J. Rockenbach	Construction	1-14-43	New
John A. Sells	Construction	1-19-43	New
Karl N. Sells	Construction	1-19-43	New
Lowell W. Smith	Construction	1-5-43	New
Harold L. Sterling	Construction	1-20-43	New
Donald D. Taylor	Construction	1-26-43	New
Hal D. Tibbels	Construction	1-5-43	New
Milton C. Wait	Construction	1-16-43	New
Bradford E. Dalton	"P" Department	1-13-43	New
Robert J. Anibaldi	Technical	1-16-43	New
Donald L. Davis	Technical	1-2-43	New
Max G. Petersen	Technical	1-19-43	New
William E. Roake	Technical	1-5-43	New

ARRIVALS

Name	Department	Physical Arrival	Orgin
William J. Gripps	Medical	1-22-48	New
Robert W. Ripley	Medical	1-26-48	New
Dr. James E. Sawtell	Medical	1-8-48	New
Albert L. Smith	Medical	1-19-48	New

DEPARTURES

Name	Department	Date of Departure	Orgin
Leroy W. Young	Design	1-16-48	Vol-Quit
Warren C. Enstrom	Construction	1-8-48	*
J. V. Koninger	Construction	1-8-48	*
James K. McGregor	Construction	1-8-48	Vol-Quit
Lewellyn E. Harville	Medical	12-31-47	Vol-Quit-Another position.
J. R. E. Merkle, Jr.	Medical	12-31-47	Vol-Quit-Another position.
Helen T. Miller	Accounting	1-16-48	Vol-Quit

* Removed from Roll

P DEPARTMENT

JANUARY - 1948

I. GENERAL

The D and F Piles operated at 275 M.W. throughout January except for scheduled outages. Each operating area had an extended outage of approximately one week to effect 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 69 tons of acceptable canned slugs which were produced on a 1 shift 5 day per week basis; with the exception of 1 3/4 tons of recovered 8" slugs, the entire 300 Area production was in 4" slugs.

At D-Pile considerable time was spent integrating the design and operational details of the equipment used for the addition of carbon dioxide to the gas circulating system. Addition of carbon dioxide was begun on January 27 as described in Production Test 105-168-P. The percentage of this gas in the system at month end was 9.2.

During the month design work was begun on a possible replacement process water sewer line for the 100-F Area. The present sewer, of reinforced concrete, has developed numerous radial cracks which have been temporarily repaired by banding with rubber and steel strips. Ground surveys reveal no evidence of process sewer leakage at 100-D or 100-B Areas.

The 100 Area Process Control group functionally tested a "long stroke" rear face charging machine at the B-Pile on January 9, and the results indicate that considerable development work must yet be done. Future study will be given to its modification and to the design of the proposed "clam shell" device.

Testing of the new casting facilities in Building 314 in the 300 Area was continued and virtually all the remaining equipment was installed during the month. The outgassing of Furnace B (south unit) was completed on January 30.

The various operations and control features incident to the manufacture of 4" uranium slugs have been incorporated into a formal process by the 300 Area Supervisory group. The document will be issued in the near future.

A study contemplating an increased monthly production of irradiated bismuth was prepared during the month.

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:	January
Beginning of month	257
End of month	288
Net increase	31

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

B. E. Dalton was employed as a supervisor-in-training on January 13 and assigned to the 300 Area.

Twenty-nine new operators were hired and one was transferred from the Patrol Division of the Service Department. Six of these operators were hired from Metal Hydrides, Beverly, Mass., following shutdown of their metal casting facilities. It is anticipated that their experience in this type of work will prove very valuable in the new 300 Area Melt Plant. All new operators were assigned to the 300 Area.

Preparations were completed for commencing a two-shift production schedule in the 300 Area on February 2, 1948. This increased production rate will be necessary for loading new piles.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time Operated (%)	-	81.3	74.7
Operating Efficiency (%)	-	80.6	73.9
*Power Level (M.W.)	-	275	275
*Inlet Water Temperature	4.8	4.5	4.6
*Outlet Water Temperature (Maximum ^{o}C., 10 tubes, .240" zone)	4.8	48.7	48.7
Number of Scrams	-	0	0
Number of Purges	0	1	** 1
Helium Consumption (cu. ft.)	27,488	73,484	110,775
Metal Discharged (tons)	0	29.7	31.3
Inhours Gained (this month)	0	3	(-) 9
*Inhours Poisoned	-	334	268
*Inhours in Rods	-	52	52

* Month end figures.

** Approximately 38,000 cu. ft. were lost in a purge of the gas system following thimble replacement. See Production Test No. 105-147-P under "Operating Experience."

PILE BUILDING

Outage Breakdown

Date of Outage	Schedule Outages: Metal Discharged	Maintenance	Unscheduled	Length of Outages (Hours)
1-6-48	D			19.2
1-6-48	F			22.7
1-11-48	F	F*		145.3
1-13-48	D			21.9
1-18-48	D	D*		98.0
1-27-48	F			20.0

* Extended outage for repairs to Van Stone flanges.

Operating Experience

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

No. 105-75-P (Exposure of 4" Slugs)
Twenty-seven tubes containing 64-4" slugs each were discharged from D-Pile on January 6. No unusual difficulties were experienced.

105-105-P (Aluminum Jacketed Steel Slugs)
Aluminum jacketed steel slugs, replacing the aluminum jacketed lead slugs in the dummy pattern charged into Tubes No. 3173-F and 3181-F on July 7, 1947, were discharged on January 6. No operating difficulties were encountered.

105-114-P (Van Stone Corrosion Tests)
Special cast aluminum (5% Si) rear face nozzles were placed on Tubes No. 2651-F, 2657-F, 2664-F, 2681-F, 2683-F, and 2696-F on January 15. This phase of the test is being made to determine whether the nozzles will alter the galvanic cell potential at the interface of the rear nozzle and rear end of the tube and thus protect the Van Stone flange. The mechanical operation of the nozzles has been satisfactory.

105-119-P (Effect of Fabrication Temperatures on Blistering)
Tube No. 2570-D, containing 20 slugs of uranium canned by the lead dip process and 12 slugs canned by the triple dip process, was discharged normally on January 13.

105-123-P (Shielding in Process Tubes - Supplement A)
Specially designed front shielding plugs were installed

in place of the usual front dummy pattern in Tubes No. 1866-F, 1881-F, and 2863-F on January 6. The plugs are a 2S aluminum rod 43½" long, a 2S aluminum rod 55 3/4" long, and a standard lead slug supported 30" from the front cap. All plugs are attached to the front caps. These plugs have been found to provide adequate shielding during operation of the pile.

105-147-P (Expansion of Graphite Blocks)
The D Experimental Test Hole Thimble at F-Pile was removed January 13 to allow measurements of pile graphite blocks. These measurements showed that tube bearing blocks have expanded more than non-tube bearing blocks. A new thimble and insert were installed without incident on January 14.

105-168-P (Replacement of Pile Helium Atmosphere with Carbon Dioxide)
Partial replacement of helium with carbon dioxide at D-Pile was begun on January 27, at the rate of approximately 2% per day. At month end, analysis of gas in the main circulatory system was as follows:

Helium	90.0%
Carbon Dioxide	9.2%
Air and Other Impurities	0.8%

The amount of carbon dioxide necessary to attain and hold a given concentration has been greatly in excess of the theoretical amount required. Several effects, which had been predicted, were in evidence as follows:

1. Slight gain in reactivity.
2. Central graphite temperatures have increased as much as 12° C.
3. Temperatures attained during Bldg. 115 Drier Room cycles have increased slightly.
4. The turbo-blowers have slowed down slightly, with the same amount of steam being used.
5. Pressure drop across the silica-gel drying towers has increased somewhat.

Five unit motion instruments removed from B-Pile were installed at D-Pile to observe pile motion during the carbon dioxide addition. Two additional Wye Level stations for measurement of pile motion were installed on top of D-Pile on January 13. Both operating piles now are identically equipped in this respect.

During the month 1 additional bismuth stringer was established at F-Pile. Both operating piles now have 20 stringers each on a 5-month irradiation cycle. The tubes at F contain 57 slugs each, while those at D contain 50 each.

The 0.140" orifices in Tubes No, 0559-F, 0589-F, 0690-F, 0791-F, 0855-F, and 0955-F were replaced with 0.175" orifices on January 6 and 16 to reduce the temperatures in these tubes during start-up conditions.

A reactivity loss of 10-15 inhours occurred at F Area following the installation of the new D-test hole facility.

Mechanical Experience

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

	Pile	Inspected	Below 0.030"	%	Below 0.040"	%
Front	D	1784	-	-	209	12
	F	1364	121	9	-	-
Rear	D	1757	-		168	10
	F	1361	757	55	-	-

	Repaired	Gun Barrels Given Additional Clearance
D	407	177
F	872	56

Tubes No. 1682-F and 1686-F, which were damaged during Van Stone repairs in December, were replaced without difficulty on January 6 and January 12 respectively. The tube used for No. 1686 was one from the stock ordered for replacement pile DR. This functional test is desired as a means of partially evaluating this new material.

Tube No. 4376-D, previously reported as damaged during discharge, was replaced on January 19 and returned to service.

A new set of mattress plates was installed at B Pile in January. All three 100 Areas are now equipped with the new style mattress plates and stainless steel lined chutes.

Tube No. 1970-B was damaged during tests of the "long stroke" rear face discharge device on January 9. The tube will not be replaced until further tests of this type have been completed.

The vertical safety rod step plugs and guides for Rods No. 38- D and 37-F were shimmed during January to prevent sticking. Both of those had been serviced once before. Vertical rod step plugs and guides which have been shimmed prior to January 1948 are:

D Pile: 11, 12, 15, 21, 25, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, and 38.

F Pile: 21, 24, 29, 30, 31, 33, 34, 35, 36, 37, and 38.

The installation of additional vents in the D-Area process water sewer line in the Columbia River was completed in January. At the high point in this line, clogging of the old vents had prevented the escape of entrapped air. While the work was in progress, the water normally passing through this line was diverted to the spill way.

Two additional leaks in the F-Area process water sewer line between Bldg. 105 and 107 were repaired by placing rubber and steel strips around the faulty sections.

GAS PROCESSING BUILDING

A purge of 38,000 cu. ft. of helium at F-Pile was necessary after the extended outage of January 12-17 to raise the gas purity from 30% to 90%.

Two cars of gas were unloaded to storage, one at each operating area.

SPECIAL HAZARDS

No unusually hazardous conditions were encountered during the month.

300 AREA - METAL FABRICATION

Melt Plant:

The construction of the melt plant is essentially complete, and all major equipment has been installed with the exception of the coils in the "A" furnace and a five-ton crane. Difficulties were encountered in getting the induction heating system to perform correctly, but by month end satisfactory results were being attained.

Vacuum testing on both furnaces and vacuum lines has been completed. The outgassing of furnace "B" was started on January 19 and completed January 30. During this period a total of 96½ hours was actually required to outgas the furnace. Furnace "A" will be ready for outgassing during the first week of February.

It is planned to charge one crucible in the "B" furnace on February 2. Subsequent operation will be dependent on this trial run. All crucible charges will be made up of approximately the same proportions of BT, UM, G, and TXB scrap as produced. All billets will be identified with a prefix "B".

Extrusion, Outgassing, and Machining:

Extrusion, Machining, and Billet yields were as follows:

	% Yield (4" A's)	
	December	January
Extrusion	93.6	93.8
Machining	79.2	79.7
Billet	74.1	74.6

Extrusion operated four days in January. Three days were spent on regular Hanford production and one day (Saturday, January 3) on the extrusion of 27 tons of rods which were shipped to Brookhaven. This completed the extrusion of rods to meet Brookhaven requirements, a total of 156 tons being extruded with an overall rod yield of 92.8%.

On January 4 the power circuit was disrupted inside the rotary furnace while it was rotating at a standby temperature of 1200° F. Examination of the inside of the furnace indicated that one or more element sections came loose from the outer sidewall and caught on the revolving billet saddles. As a result, approximately 60% of the element sections on the outer sidewall of Zone 5 were torn loose. The necessary repairs were completed on January 15. An internal furnace examination made one week previous to this occurence revealed no unusual conditions.

Six billets were extruded on January 16 in conformance with Part I of Production Test No. 314-51-M "Complete Extrusion Using Graphite Inserts." It was not possible to completely extrude the billets, using a 2½" graphite insert between the dummy block and billet, regardless of ram travel setting.

Difficulty was encountered with the dummy blocks falling into the die locks and with graphite buildup in the rollers on the run-out table.

Alpha phase extrusion was attempted on January 22 as outlined in Production Test No. 314-51-M (Supplement B) "Alpha Phase Extrusion." An attempt was made to extrude two bare billets, preheated in a lead bath to 1130° F, through a 1.750" die at pressures of approximately 1000 tons. Both billets failed to extrude. Two copper jacketed billets preheated in the lead bath to 1130° F were extruded successfully at pressures of 500 and 800 tons. A third copper jacketed billet was preheated to 1080° F in the lead bath and failed to extrude at 1000 tons pressure.

At the request of the Atomic Energy Commission 2½ regular billets were cut into quarter sections, extruded through a 0.5625" die on January 16, and shipped to Carbide and Carbon Chemical Corporation, Oak Ridge, Tennessee.

A total of 106 papoose slugs was machined to a length of 6" ± 0.010" and a diameter of 1.353" $^{+\ 0.001"}_{-\ 0.002"}$.

The operation of three roller-turner and cut-off lathes, using three kinds of cutting oil in conformance with the second phase of Production Test No. 313-98-M, "Evaluation of Cutting Oils", was continued through January. The second phase of the tests will run thirty shifts and is to be completed in February. The two new cutting oils being tested continue to show coolant properties comparable to the "Calol" now being used which is now unavailable.

Chip Recovery and Oxide Burning:

The Chip Recovery yield was as follows:

	% Yield	
	December	January
	94.4	89.7

Chip Recovery operated eight days and processed 21,878 pounds of briquettes during January.

The material burned in the oxide burner was as follows:

Weight Out - Lbs.	
December	January
4708	9233

Oxide burning was continued on a daily schedule to facilitate the burning of the backlog of oxides on hand. A study is being made to determine a means of reducing air contamination around the burner.

Canning Operation:

The canning yield was as follows:

% Yield (4")	
December	January
81.5	85.5

Canning rejects, by cause were:

	% of Total Canned (4")	
	December	January
Non-Seating	6.3	3.2
Marred Surface	3.7	1.2
Al Si on Outside of Can	2.5	2.1
Frost Test	1.1	2.6
Bad Welds	3.4	2.4
Miscellaneous	1.5	3.0
	18.5	14.5

The quality of 4" canning has continued to show improvement. Non-seating rejects continue to be high chiefly because of the additional manual force required to seat slugs having "A" diameters as compared to "MZ's". In view of this difficulty, it was decided to allow an increase in the overall bottom can and bonding layer thickness from a maximum of 0.195" to a maximum of 0.245" on January 12. Production Test No. 313-101-M will be processed to determine if 4" slugs of 1.356" diameter, 0.003" less than the present A's, can be canned with greater efficiency.

Rejects for Al Si on the outside of the can have been reduced by exercising more control over crimping technique and using sleeves that are 1/16" longer.

On January 20, the entire production (861 pieces) on the C line was rejected for penetration. The cause was attributed to operating the canning bath,

for very short intervals, at excessive temperatures. Further precautions are being exercised on temperature control to prevent exceeding the maximum at any time.

Fifteen hundred bismuth slugs from Lot No. 1422 were canned. In addition, three rejects returned from the 100 Areas were stripped and recanned from Lot No. 1420 (#544, 545, and 733). Four pieces of Special Request No. 15-14 (#11, 134, 135, and 136), and six pieces of Special Request No. 15-15 (#1, 4, 6, 13, 21, and 30) were rejected and recanned. (All Special Request No. 15 pieces contain lithium fluoride).

Work was started on Production Test No. 313-99-M "Lead-Dip Canning of Four-Inch 'A' Diameter Slugs" on January 20. The best canning results have been obtained using a lead dip bath temperature and a canning bath (aluminum silicon) temperature The best canning cycle thus far appears to be dip in the lead, followed by a agitation in the Al Si layer on top of the lead bath and a dip in the canning bath before assembly. The can preheat and submerge, cap preheat, and assembly cycle coincides with that for the triple-dip process.

Recovery Operation:

	% Recovered (4") January	Ave. Weight - Lbs. January
Z Slugs	80.8	3.913
X Slugs	12.5	3.854
Rejects	6.7	--
	100.0	

	% Recovered (8") January	Ave. Weight - Lbs. January
Z Slugs	27.3	7.797
X Slugs	62.4	7.726
	10.3	--
	100.0	

A total of 435-8" slugs were recovered at a yield of 87.6%.

Inspection and Testing:

Autoclave rejects were as follows:

4"	
December	January
1.30/M	0.85/M

Thirty-one 4" "A" autoclave failures occurred in January. Two pieces had the cap lifted, 5 pieces had a swelling on the sidewall beginning at the base of the cap, 16 pieces had small ruptures in the sidewall beginning at the base of the cap, 1 piece had a small rupture in the sidewall approximately one inch below the cap, 1 piece had a small rupture in the sidewall at the mid-point, and 6 pieces were completely destroyed.

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

	% Useable (4")	
	December	January
Aluminum Cans	82.3	86.5
Aluminum Caps	97.1	99.5
Steel Sleeves	92.2	80.6

Beginning January 14, 100% inspection was started on all aluminum cans for surface (inside and out), I.D. (mandril) + bottom thickness. Dimple depth is currently being gauged on 50% of the cans inspected, but this will be increased to 100% when the fabrication of a gauge is completed on or about February 3. Wall thickness, inside radius, O.D. (tube gauge), and length are being checked on 1% of all cans inspected. In an effort to consolidate several gauging operations into one, a gauge is being fabricated that will check the inside diameter, bottom thickness, and dimple depth.

300 Area - Test Pile:

This unit was operated 21 days in January, completing 91 tests on canned slugs, 68 on billet eggs, 208 on graphite bars, and the following special work requests:

Request No.		No. of Tests
6	To calibrate standards for use in four-bar testing.	6
7	To calibrate reference standard bars for use in four-bar testing.	13
8	To insure that graphite standards do not become contaminated.	2
9	To determine if difference exists between individual bars in each pair of the two-bar test system.	42
10	To determine purity of specially purified bars.	33

The 101 Building at Hanford now has 1400 bars of graphite on hand that will be made available for testing after they are machined. Present schedules indicate that all of this material will be ready for testing in February.

S DEPARTMENT

JANUARY 1948

OPERATING SECTION

I. GENERAL

Thirty-four batches were completed in the Canyon Buildings during January, and thirty-four were processed through the Concentration Buildings and the Isolation Building. The average purity for the completed charges was 98.7%.

The material balances for T and B Plants averaged 100.7% and 105.0%, respectively, for a combined average of 102.8%. Average waste losses for both plants totalled 2.5%.

Canyon and Concentration Building Production Performance Data — (1/1/48 — 1/31/48, inclusive)

	B Plant	T Plant	Combined
Number of charges started	21	15	36
Number of charges completed	17	17	34
For completed charges:			
Percentage of starting product in waste			
This month	2.6(a)	2.5(a)	2.5
Last month	2.9(b)	2.5(b)	2.7
Cumulative to date	5.4(c)	5.4(c)	5.4
Percentage of starting product recovered			
This month	102.4	98.2	100.3
Last month	100.8	94.6	97.6
Cumulative to date	96.8	95.4	96.2
Percentage of starting product accounted for			
This month	105.0	100.7	102.8
Last month	103.3	97.0	100.3
Cumulative to date	102.2	100.8	101.6
Gamma decontamination factor (log.)			
This month	7.58	7.63	7.60
Last month	7.54	7.64	7.59
Cumulative to date	7.31	7.26	7.28

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.026%—T Plant; 0.021%—B Plant. (b) 0.028%—T Plant; 0.022%—B Plant. (c) 0.17%—T Plant; 0.042%—B Plant.

1200017

Isolation Building Performance Data (1/1/48 – 1/31/48, inclusive)

	% of Incoming Product			
	Prepared for Shipment	Recycle	Losses	Material Balance
Average for this month	95.7	4.75	0.05	100.5
Average for last month	95.8	4.49	0.009	100.3
Average to date	96.6	3.92	0.11	100.6

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	300
End of month	297
Net decrease	3

Remarks: Two transfers; one to Maintenance Department and one to Design Engineering Department. One termination.

Changes in supervisory organization:

F. Moss, formerly assistant Chief Supervisor, 200 East Area, resigned as of January 31, 1948, making the following changes in the S Department organization necessary:

C. T. Groswith, formerly Area Supervisor, will assume the duties of Assistant Chief Supervisor, 200 East Area, as of February 1, 1948.

O. F. Beaulieu, formerly Senior Supervisor, will assume the duties of Area Supervisor, 200 East Area, as of February 1, 1948.

L. M. Meeker, formerly Shift Supervisor, will assume the duties of Senior Supervisor, 200 East Area, as of February 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 effect of the temperature variable during centrifugation was studied; alternate runs being cooled to 25°C and 35°C, respectively, during centrifugation with no significant effect on the waste losses. This study will be continued in February. Final average waste losses for the month were 0.46%. At B Plant, an effort was made to evaluate phases 5-E and 5-D of the test by applying phase 5-E and 5-D to alternate runs throughout the month.

No significant difference in waste losses was apparent. In phase 5-D, one-half of the phosphoric acid is added at 18 lbs/minute and one-half is added at 6 lbs/minute, followed by a one hour digestion period. In phase 5-E, the same phosphoric acid addition rates are maintained but the one hour digestion is made when the first half of the phosphoric acid has been added. Average final waste losses for the month were 0.47%.

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 used 25% of the normal amount of cerium and zirconium scavengers with a 50% reduction in the amount of hydrogen peroxide used in cake solution. The average 13-4BP waste loss was 0.78%, as compared with 0.82% for December.

At B Plant, the use of 25% of the original amount of cerium and zirconium scavengers was continued and the cake removal acid was introduced directly to the centrifuge rather than via the precipitator for all runs processed. The average 13-4BP waste loss for the month was 0.82%. Since this indicates no improvement over normal operation wherein the cake removal acid is introduced via the precipitator, the introduction of the acid via the precipitator is being resumed.

Section 14 Waste Volume Reduction

The return of product cake wash water from Section 14 to Section 13 at T Plant for use in washing the by-product cake was discontinued during the month to determine whether or not the recycling of this water had been adversely effecting the decontamination efficiency. Indications are that this is not the case and it is expected that the recycling of the water will be adopted as standard in the near future since, in so doing, approximately 150 gallons of waste storage space per batch is saved. Average log. decontamination factor for the month at Section 17 was 5.14.

Acid Wash — Run B-9-01-AW1

An acid flush was processed through the B Plant Decontamination and Concentration Buildings at the start of the month. A product recovery of 29.8% of a normal run indicated no undue hold-up in the process equipment.

Water Removal of Cell A Byproduct Cake

All runs were processed in Cell 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". It has not been possible to reduce the nitric acid consumption below the 900 lb per batch figure reported last month using the water-nitric acid combination method of cake removal, since at this point analytical difficulties begin to develop. Using nitric acid alone, it has been possible to effectively remove the cake with only 700 lbs of 60% nitric acid which is a 50%

S Department

WASTE DISPOSAL

T and B Plants

Cribbing of Second Cycle Wastes

Continuation of the cribbing of second cycle wastes at T Plant is dependent upon the development of the special perforating tool for taking soil samples from the test wells at the crib. It is expected that this tool will be completed during February.

At B Plant, facilities for cribbing second cycle wastes are essentially complete and it is expected that cribbing will be started during February.

Additional Waste Storage Facilities

T Plant

Excavation for the 241-TX Tank Farm (Project C-163) by the subcontractor was approximately 98% complete at month-end. The outside footing forms for four tanks have been completed. Reinforcing steel has been placed for the base of one tank and is 75% complete for the second tank. Center footings for six tanks have been completed and work has been started on one set of forms for tank wall construction.

In the General Electric phase of the work, excavation of the waste line trench between the 154-TX and 155-TX diversion box was completed and approximately 1000 feet of waste line encasement was poured. Excavation of the trench from the 155-TX box to the 241-U Tank Farm has been started and excavation for the 154-TX diversion box and catch tank was completed. The third lift of concrete for the 155-TX diversion box was poured and the pouring of the encasement covers has been started. It is estimated that the General Electric phase of the work is approximately 15% complete.

B Plant

Metal waste from run B-8-01-D-9 was diverted to the 101-BX tank in the new 241-BX Tank Farm on January 17, 1948. Routing of the waste was via the 154-B and 151-B diversion boxes.

Cathodic Protection of Underground Waste Lines

Cathodic protection is now being provided on all waste lines servicing the 221-B and 221-T Canyon Buildings. Although probably adequate, induced potentials in the vicinity of the 241-U Area are somewhat low and additional anodes are being installed at this point. The temporary battery units and surface wiring now in use will be replaced when suitable cable and permanent rectifiers are received.

Cathodic protection to prevent further electrolytic attack on the lines servicing the 221-U Canyon Building will be provided as soon as the necessary rectifiers can be obtained.

Waste Status

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

Bldg. 241 Tanks	Waste	Percentage Full					Reserve Capacity in Batches to Process					
		B	C	EX	T	U	B	C	EX	T	U	Total
x101,2,3	Metal	100	100	4.5	100	100	0	0	257	0	0)	
x104,5,6	Metal	—	100	0	—	38.5	—	0	269	—	165)	728
x201,2,3,4	Metal	0	100	—	0	0	—	0	—	—	37)	
x107,8,9	1st Cycle	100	53.4	0	100	0	0	157	338	0	338)	
x110,1,2	1st Cycle	—	100	—	—	81.1	—	0	—	—	64)	897
x104	1st Cycle	—	—	—	100	—	—	—	—	0	—)	
x104,5,6	2nd Cycle	84.9	—	—	—	—	69	—	—	—	—)	
x110,1,2	2nd Cycle	100	—	0	67.0	—	0	—	454	151	—)	707
x105,6	2nd Cycle	—	—	—	89.3	—	—	—	—	33	—)	

MECHANICAL PERFORMANCE

T and B Plants

Product Leaks

Product solution leaks developed in T Plant as the result of G-9 gasket failures on the 13-1 to 13-2 tank (a) and 8-4 to 12-7 tank jet assemblies. Both leaks were quickly detected by the conductivity meter. It is estimated that 4.1% and 3.7%, respectively, or a total of 8.1% of a normal run was collected in the cell drainage water. This material is now being returned to the system as dilution water in the extraction step. In order to make repairs it was necessary to replace both jet assemblies. The new assemblies were equipped with Teflon gaskets.

HF System

At T Plant, the entire HF piping system from the 211 storage tanks to the 224-T scale tank was replaced with Schedule 80, 1-1/2 inch seamless pipe in accordance with the specifications listed in the Project Engineering Recommendation Report No. 80. In conjunction with this work, the three 2500 pound emergency storage tanks were tied into the system and the 224-T scale tank was hydrostatically tested.

Fluorothane Gasket Material

A series of tests designed to evaluate the use of Fluorothane gasket material with process solutions was completed during the month. The material was found to be equivalent to, or superior to, Teflon in all respects.

1208021

F Cell Centrifuge

During the skimming operation of run T-7-12-D-16, the skimmer assembly on the F-22 centrifuge in T Plant failed. The F-2 machine was put into operation immediately and the F-22 machine is now being disassembled for repairs.

Project C-166 - Additional Nitric Acid Storage Facilities

Two new 10'x14' vertical stainless tanks were received and set in place in the 211-B Area during the month. Foundations have now been completed for four tanks in the 211-B Area and for two tanks in the 211-T Area. Work is progressing on the last tank foundation in the 211-T Area and upon the fabrication of the necessary drip pans and connecting lines. Plans have been completed for emptying the 273-E tank which will be moved to the 211-B tank farm. Receipt of the remaining new tanks (3) is expected in the near future.

Special Hazards

Stack Gas Contamination

As reported last month the primary source of the discrete active particles being discharged from the 291-B and 291-T stacks appeared to be the mild steel duct work on the inlet and outlet side of the exhaust fans. One fan in each area has now been replaced with a new fan equipped with stainless steel inlet and outlet ducts. The new fans at 291-B and 291-T were put into operation on January 9, 1948, and January 30, 1948, respectively. A third fan is ready for installation at 291-T.

Since the installation of the new fan in the 291-B Area, there has been a marked decrease in the active particles being discharged from that stack. Recent samples taken from the air stream before the fans, however, have indicated the presence of extremely minute active particles. Additional study will be given to this phase of the problem. Protective measures designed to protect personnel against possible inhalation or ingestion of the active particles are being continued and consideration is being given to possible methods of ground clean-up.

METEOROLOGICAL SECTION

A total of ninety-one forecasts were issued to the T and B Plants during January with an average accuracy of 84.2%.

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

Maximum average hourly wind velocity at 200'	62 mph on 1/1/48
Minimum average hourly wind velocity at 200'	0 mph
Maximum average hourly wind velocity at 50'	50 mph on 1/1/48
Minimum average hourly wind velocity at 50'	0 mph
Prevailing wind direction	NW
Prevailing wind quadrant	NW

Maximum air temperature (4 feet)	60°F on 1/23/48
Minimum air temperature (4 feet)	14°F on 1/15/48 and 1/30/48
Number of days precipitation and/or fog occurred	15 *
Number of days precipitation occurred	13 **
Number of days snow occurred	7 ***
Number of days fog occurred	6
Greatest duration of precipitation	21.8 hrs on 1/6/48 and 1/7/48

* Includes precipitation of less than .01 inches on 6 days
** Includes precipitation of less than .01 inches on 6 days
*** Includes snow of less than .01 inches on 6 days

DESIGN AND CONSTRUCTION CONSULTANTS SECTION

The Design and Construction Consultants Section of the S Department was established on January 1, 1948, for the purpose of coordinating all phases of activity associated with the expansion of the 200 Areas. R. S. Bell, Assistant Superintendent, was divorced from his operational responsibilities and placed in charge of the new group, which at monthend was composed of O. C. Schroeder, T. Prudich and L. I. Brecke. Mr. Prudich and Mr. Brecke retained their temporary functional assignment to the Technical Department to assist in furthering Project C-198.

Redox

Project C-187, providing for the construction of scale-up facilities, a Test Unit and three full-scale Redox Plants, will receive the Section's main attention during the coming months. R. S. Bell was appointed Contact Engineer for the Main Plants and R. H. Beaton, Technical Department, was appointed Contact Engineer for the Test Unit, Demonstration Unit and Scale-up Equipment.

During January, the Plant Construction Steering Committee established the site locations for the three main plants. Plants No. 1 and No. 3 are to be located in the 200 East Area and Plant No. 2 is to be situated in the 200 West Area.

The progress of the Redox development program is covered in the Technical Department Monthly Report. R. S. Bell, in company with representatives from the Technical and Design Engineering Departments, inspected solvent extraction study facilities at the Argonne National Laboratory and at Clinton Laboratories. In a series of meetings held with Kellex personnel in their New York office, agreement was reached that design work for certain phases of the Test Unit could get underway immediately and that a process engineering flowsheet would be available by April 15, 1948, or shortly thereafter.

Area Laundry

On January 29, 1948, a directive was issued to the Design and Construction Division requesting a design study to be made of proposed additional protective clothing laundry facilities. R. S. Bell was appointed Contact Engineer.

TECHNICAL DEPARTMENT

JANUARY 1948

GENERAL

D. G. Reid of C inton Laboratories visited here from January 8 to 15 to arrange for a special irradiation of aluminum-uranium alloys, and to arrange for the exchange of Redox samples between here and Oak Ridge.

V. C. Hamister, H. G. McPherson and H. T. Reid of the National Carbon Co. spent January 8 - 10 here in consultation on the graphite procurement program.

Martin Studier and E. K. Hyde of Argonne National Laboratory arrived on January 27 to arrange for and observe a special irradiation of U^{238} for the purpose of obtaining higher isotopes.

W. W. Harris and F. S. Voss of Carbide and Carbon at Oak Ridge (K-25) arrived on January 27 for a 2-week study of radiochemical techniques in the analytical laboratories.

Chemical Research and Chemical Development personnel made trips in connection with a number of Redox program meetings, as follows:

R. H. Beaton visited the Standard Oil Development Company at Bayway, N. J. on January 14 to discuss the mixer-settler development program; on January 15-16 he participated in a series of technical conferences on Redox design at the New York offices of the Kellex Corporation; and on January 19-20 he attended in Chicago a joint meeting of Hanford Works, Schenectady Research Laboratory, Kellex Corporation, Clinton Laboratories, and Argonne National Laboratory technical representatives. J. M. Frame, in company with R. S. Bell of the S Department and O. H. Pilkey of the Design Engineering Department, visited Clinton Laboratories on January 14 for solvent extraction conferences, and then attended the New York and Chicago meetings above. Other members of the Technical Department at the Chicago meeting were O. H. Greager, F. W. Albaugh and R. B. Richards, the latter two going on to Schenectady January 21-23 to discuss Redox process chemistry problems with members of the Knolls Atomic Power Laboratory. H. H. Hubble, V. R. Cooper and J. O. Ludlow also visited Clinton Laboratories January 14-16 for discussions of solvent extraction developments there. E. J. Reber visited Schenectady January 15-16 to discuss the KAPL Redox pilot-plant program.

Other business trips of Technical Department people during January were as follows:

W. K. Woods spent the week of January 12-17 in Schenectady in consultation on the pile development program.

C. P. Cabell spoke before the Spokane Section of the AIEE at Spokane on January 16. His subject was, "Hanford Works from an Engineer's Viewpoint".

R. Ward spent January 14-16 at Schenectady participating in an uranium metallurgy conference called by the A.E.C., and in metallurgical discussions with Research Laboratory people.

R. E. Curtis spent the week of January 12-17 in the middle-west, where he interviewed Ph.D. candidates in analytical chemistry at the Universities of Minnesota, Michigan, and Illinois. He also spent one day in a laboratory design conference at Argonne National Laboratory.

D. W. Haught attended the laboratory design conference at Argonne National Laboratory on January 15-16.

W. W. Marshall was in Schenectady January 19-23, attending a spectrophotometer service course and discussing analytical problems with Research Laboratory personnel.

C. W. Botsford visited the Morganton, N. C. plant of the National Carbon Company during the week of January 26 to observe the first runs of the full-scale graphite purification furnaces.

P. E. Collins and R. E. Curtis spent January 28-30 at Los Alamos, in discussions of DP West operations and analytical control.

C. E. Shafer visited the Northern Pacific R.R.'s oil reclamation laboratory at Auburn, Washington, on January 29-30, to observe the analytical methods employed.

The requirements for additional permanent laboratory facilities were reviewed, with the conclusion that a Hot Metallurgy Laboratory and a Radiochemistry Building are the most pressing needs. Requests for Work Authorities to cover both of these buildings were initiated.

ORGANIZATION AND PERSONNEL

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

	Dec. 31, 1947	Jan. 31, 1948
Pile Physics	19	19
Pile Engineering	12	12
200 Area Plant Assistance	16	17
Chemical Development	70	75
Chemical Research	11	12
300 Area Plant Assistance (Bldg. 313)	4	5
300 Area Plant Assistance (Bldg. 314)	3	4
Metallurgy Laboratory	10	10
Laboratories Division	248	301
Statistics Division	9	10
Information Division	6	10
Clerical	19	*
Administration	4	8
	431	483

* The general caption "clerical" is being dropped from this tabulation in order that these people may be included in the groups to which they are assigned, and thus make the group totals more significant. This change accounts for all of the increase shown for Chemical Development, and for all of the gain in Administration.

1208025

The increase of 52 in total personnel resulted from additions of 10 and 42, respectively, to the monthly and weekly rolls.

The 200 Area Plant Assistance group added two new chemical engineers, but lost one such man by termination. Chemical Research employed one chemist, and one metallurgist reported for work in 300 Plant Assistance. The three supervisors involved in the library and 300 Files transfer from the Service Department were taken into the Information Division on January 1. Two weekly chemists in the Laboratories Division were transferred to the monthly roll, and one such chemist was made a shift supervisor. One metallurgist in the Metallurgy Laboratory was changed from non-exempt to exempt.

Virtually all of the 42 non-exempt additions were laboratorians, laborers, and office help hired for the expanding Redox analytical control program in the Laboratories Division. Nine of the people formerly shown separately as "clerical" also are included in the January 31 total for this Division.

At month-end there were 2 exempt and 104 non-exempt personnel on the Technical rolls awaiting security clearance for classified work. Most of the latter were laboratorians.

PILE PHYSICS

General

Functional testing of graphite for the new piles continued throughout the month. An outstanding feature of this testing was the discovery of graphite of very low neutron absorption cross section. Thirty bars of graphite which had been purified in the unmachined state at Bay City had an average dih of 0.76 and a maximum dih of 0.91 in functional testing. This indicates a reactivity gain in excess of that previously expected for pure graphite, and, correspondingly, an absorption cross section in the range of 4.0 to 4.1 millibarns, substantially below the value of 4.4 millibarns which is currently accepted for pure graphite. This effect is tentatively ascribed to the removal of an impurity of moderate cross section. Further work on this possibility is in progress. A pile with a central core of this purified graphite amounting to one-eighth of its entire volume would have 300 inhours more reactivity than the present piles had at startup, and slightly more than they now have.

Late in the month, the first tests of a full-scale purification-furnace were made at National Carbon's Morganton plant. Samples from the first runs are to be tested functionally as soon as possible. National Carbon is setting up four additional furnaces to provide a core of high-quality graphite for the DR pile.

In a meeting with representatives of the National Carbon Company it was decided that all future graphite heats will be divided into two groups. One fraction, marked N, will consist of the three columns on each end and the three bottom layers of the heat. From the results of functional testing, this material is expected to be of lower quality than the remainder of the heat. The remainder will be designated the "O" grade. Thus, Cleves-Standard graphite from the top center of the furnace will be "CSO" grade.

The testing of all the bars in one complete heat has begun. Initial results on a few bars from each layer indicate that only the bottom layer is of low

quality. The Test Pile results vary from + 0.235 dih to + 0.151 dih on the top six layers, while the average in the bottom layer is - 0.076. Testing of the remaining bars of the heat is continuing.

The quality of the regular production graphite heats tested during the month remained high.

The addition of 10% carbon dioxide to the gas system of the D Pile produced a reactivity gain of 10 inhours. This gain is in good agreement with a computation based on an observed temperature rise which averaged 9° C. for the central graphite thermocouples.

Advances have been made in the theoretical methods for calculating the strengths of control rod systems in order to facilitate the design of a horizontal rod system for H Pile. A system which will allow a shutdown of indefinite length following operation at 400 MW is desired. Such a system should have a strength of 1200 inhours. Shadowing between the vertical safety rods and this much control, whether in horizontal rods or temporary P columns, is expected to seriously reduce the total control available in an emergency. Calculations are in progress on this problem.

A new test hole facility, similar to the ones in the B Test Holes, has been installed in the D Test Hole of the F Pile. This new facility is currently operating at ambient pile temperature but it can be water-cooled at any time.

An estimate has been made of the reactivity losses which would result from the reuse of uranium metal recovered from the separation process. A pile entirely loaded with metal reclaimed after an exposure of 200 MD/ton would have 560 inhours less reactivity than the present units. Such a pile could operate at a reduced power level. A pile loaded with metal reclaimed after 600 MD/ton exposure would be short 1700 inhours and would not be chain reacting. These losses are due almost entirely to depletion of 235.

Miscellaneous calculations of shielding requirements were made in connection with the pile design program.

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

	D Pile	F Pile
In rods	52 inhours	52 inhours
In Special Requests		
within poison pattern	200	122
outside poison pattern	10	0
In Plant Assistance irradiations	20	3
In lead-cadmium columns	0	0
In bismuth columns	101	104
In dummy columns (including empty fringe tubes)	3	39
In xenon	512	530
In overall coefficient	- 110	- 113
Total cold, clean reactivity	788	732

The D Pile gained 3 inhours and the F Pile lost 9 inhours during the month.

Production Test 105-85-P, Exposure of Expanded Graphite

Graphite samples exposed in the pile in oxygen and carbon dioxide atmospheres at the higher temperatures resulting from the increased power level did not lose mechanical strength. This confirms results obtained previously at lower temperatures. Samples with previous exposure continued to lose part of their expansion.

Problem Assignment 8-P and Production Test 105-159-P, Neutron Flux

A cadmium shielded sample of phosphorus was exposed in the E Hole facility. A high specific beta activity was obtained of which 94% was due to Si^{31} produced by an n, p reaction whose threshold is 1.4 Mev. Phosphorus thus shows great promise as a monitor for neutrons of this energy.

A theoretical method for calculating the spatial distribution in the piles of neutrons of high energy has been developed and a report will be issued in the near future (HW-8743).

Production Test 105-122-P, Reactivity Coefficients

The reactivity power coefficients of both piles were measured during the month. The results are in good agreement with each other and with expected values based on previous trends and on the decrease produced by the additional xenon present at the new operating levels.

The measurements at the D Pile did not confirm the low value of the graphite coefficient reported last month.

Production Test 105-172-P, Exposure of Carbon Dioxide

Six samples of carbon dioxide were loaded into the D Test Hole of the F Pile in order to determine the decomposition rate under pile conditions. Two of the sample tubes contain new graphite, two contain previously exposed graphite, and two contain no graphite. Following an exposure of one month, the gas will be analysed for carbon monoxide and oxygen.

Status of Special Irradiations

The status of the Special Request program on January 31 is given below. Those items which were active during the month are marked with an asterisk. Items listed as completed last month will receive no further mention. The number under P.T. indicates the Production Test, series 105-P and "Final" indicates that a final report has been issued. 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 subscript T will denote that this date which is in the future at the time the report is written is tentative. The abbreviations CL and ANL after the request number refer to Clinton Labora-

tories and Argonne National Laboratories respectively; KAPL refers to the Knolls Atomic Power Laboratory, UCRL refers to the Radiation Laboratories at the University of California.

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Discharged	Shipped	P.T.	ih absorbed
3-3 (CL)	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	1/8/48	--	49-F	
*		20 pcs.	120 da.	8/10/47	3274F	1/11/48	--	49-F	
*		22 pcs.	120 da.	9/2/47	2666D	1/8/48	--	49-F	
*		27 pcs.	120 da.	9/2/47	2682D	1/8/48	--	49-F	
		32 pcs.	120 da.	9/16/47	3179D	--	--	49-F	27
		27 pcs.	120 da.	9/9/47	2082D	--	--	49-F	25
		18 pcs.	120 da.	10/21/47	1579D	--	--	49-F	19
		18 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	14
*		11 pcs.	120 da.	1/8/48	2666D	--	--	49-F	14
*		27 pcs.	120 da.	1/8/48	2682D	--	--	49-F	25
*		16 pcs.	120 da.	1/8/48	3169D	--	--	49-F	17
*11-1	(ANL)$RaCl_2$	1 casing (1 g. $RaCl_2$)	4 mo.	7/29/47	BTHD	12/19/47	1/23/48	77-A	
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 (CL)	Be_3N_2	250-	6 mo.					70-B	
*		40	6 mo.	2/4/47	1474D	8/5/47	-- 38 pcs. shipped 1/19/48		
		40	6 mo.	2/4/47	2066D	8/5/47	--		
		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	3274-F	8/10/47	--		
		45	6 mo.	2/12/47	2666-F	8/10/47	--		
13-4 (CL)	Be_3N_2	35	6 mo.	2/12/47	1474F	8/10/47	--	70-C	
13-5 (CL)	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
*13-5 (CL)		19 pcs.	6 mo.	1/18/48	2374D	--	--		12

[redacted]

DECLASSIFIED

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Dis-Charged	Shipped	P.T.	ih absorted
*14-3 (CL)	Al-U alloy		12 mo.	1/22/47	2977F	1/27/48	--	84	
*15-13(ANL)	LiF	26		8/12/47	3179D	9/16/47	1/19/48		
*		23		8/5/47	2082D	9/9/47	1/19/48		
*		23		8/10/47	2666F	9/17/47	1/19/48		
*		23		8/10/47	1474F	9/17/47	1/19/48		
*		29		9/3/47	1569F	10/15/47	1/19/48		
*		29		9/3/47	2374F	10/15/47	1/19/48		
*		23		9/3/47	3169F	10/15/47	1/19/48		
*15-14(ANL)	LiF	23		9/17/47	1474F	10/22/47	1/19/48		
*		23		9/17/47	2666-F	10/22/47	1/19/48		
*		2		9/3/47	3169F	10/15/47	1/19/48		
*		29		10/15/47	1569F	11/4/47	1/19/48		
*		29		10/15/47	2374F	11/4/47	1/19/48		
*		2		11/3/47	1569D	12/15/47	1/19/48		
*		25		10/15/47	3169F	12/2/47	1/19/48		
*15-15(ANL)	LiF	7		11/3/47	1569D	12/15/47	1/19/48		
*		8		11/22/47	3179F	12/23/47	1/19/48		
*		23		11/9/47	2374D	12/15/47	1/19/48		
*		8		11/22/47	2682F	12/23/47	1/19/48		
		19		12/24/47	1569D	2/3/48-T	--		24
*		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	--	--		16
*		11		1/27/48	3169F	--	--		16
*		11		1/27/48	2682F	--	--		16
*27-3 (CL)	CaO	1 slug	5-6 mo.	6/25/47	2066F	1/6/48	--	93	
28-2 (CL)	Iron	1 casing	2 mos.	--	--	--	--		
28-3 (CL)	Iron	1 casing	2 mos.	--	--	--	--		
28-4 (CL)	Iron	1 casing	2 mos.	--	--	--	--		
32A	(ANL) $Np^{237}Ox$. 50 mg.								
B	Cb met. 2 g.		6 mo.	7/29/47	BTHD	2/3/48-T	--	112	0
C	$Pu^{238}Ox$, 2 ugm.)								
40	Preliminary (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

1208030

[redacted]

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Dis-Charged	Shipped	P.T.	ih absorbed
*43 (CL)	Stainless Steel&Monel	1 papoose sample	5-6 mo.	7/29/47	2684D	1/6/48	--	111	
		1 papoose sample	3 mo.	12/23/47	2666F***	-	--	111	10
44 (ANL)	U^{238}	1 casing	1 da.	2/8/48-T	BTHF	2/8/48-T	--	169	
45 (CL)	Gold	4 slugs	90 da.	12/23/47	2666F	--	--	131	
46 (ANL)	Bi^{209}	10 g.	4 mo.	12/23/47	2271F	--	--	126	0
*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	--	--		
			1-180da.	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					
49 (ANL)	Graphite-U Oxide	4 slugs	1-15 da.	12/21/47	3169D	1/6/48	--	129	
			1-30 da.	Has not been received					
			1-90 da.	12/23/47	2666F	--	--		
			1-180 da.	Has not been received					
50 (UCRL)	Tissue Ash	24 casings	<1 da.	2/8/48-T	BTHF	--	--	132	
*51 (ANL)	Be	1 receptacle	2-3 mo.	1/6/48	1474D	--	--	133	5
52 (CL)	Al-U Alloy	Details of shipping and exposure being worked out							
*53 (ANL)	Te	1 casing	4 mo.	1/27/48	BTHF	--	--	134	
*54 (CL)	Cu-Be Alloy	1 slug	2 mo.	1/6/48	1474D	--	--	135	
55 (CL)	Stainless Steel	4 slugs	2-3 mo.	2/10/48-T					
			2-6 mo.						
*56 (CL)	Be-Cu Alloy	2 slugs	6 mo.	1/27/48	1368F	--	--	136	0
*57 (CL)	$CaCO_3$	3 casings	6 mo.	1/27/48	BTHF	--	--	137	0

*** Tube 2666F also contains 4 SR-45, 1 SR-47, 1 SR-48 and 1 SR-49.
**** Tube 3169D also contains 1 SR-48 and 1 SR-49.

Technical Department

Req. No. & Source	Material	Quantity	Exposure	Charged	Tube & Pile	Dis-Charged	Shipped	P.T.	ih absorbed
*58 (CL)	Zinc	1 casing	6 mo.	1/27/48	BTHF	--	--	138	0
*59 (CL)	Antimony	1 casing	6 mo.	1/27/48	BTHF	--	--	139	0
60 (CL)	KCl	3 casings	1 yr.	2/10/48-T					
*61 (CL)	Co_3O_4	1 casing	6 mo.	1/27/48	BTHF	--	--	141	0
62 (CL)	Al-U^{235} Stainless, Be,U,Al			2/17/48-T				145	
64 (CL)	Cu-Au Alloy	5 slugs	1-15 da. 1-30 1-60 1-150 1-300	2/16/48-T				142	
65 (ANL)	Li-Al alloy	2 slugs	5 wks.	2/17/48-T				143	
77 (ANL)	Radium			Sample received latter part of January					
78 (ANL)	Radium			Sample received latter part of January					
79 (KAPL)	U^{235}			Mockup work being done.					

The following requests have been approved but the samples have not been received. 63, 64, 66 to 76, 80 to 84, ANL-100 and ANL-101.

PILE ENGINEERING

Corrosion and Blistering of Slugs

Twelve tubes containing pairs of extruded slugs made from virgin metal and from TX metal (reclaimed from turning scrap) were discharged at normal product concentration. Eight per cent of the virgin slugs were moderately blistered; five per cent of the TX slugs were at least moderately blistered and one slug was extensively blistered, though the blisters were small and the slug was free of warp. In a thirteenth tube containing pairs of TX slugs made from ends and centers of extruded rod all slugs were slightly blistered. It is concluded that the blistering tendencies of TX metal and virgin metal are comparable.

One tube containing twenty extruded lead-dipped slugs contained four moderately blistered slugs after an exposure only 68% of normal. These initial data suggest that the lead-dip canning may even enhance the blistering tendency of gamma-extruded slugs. No difference resulting from outgassing was detectable.

One tube containing 27 4-inch slugs and three tubes containing capsule samples

were discharged after exposures 195% to 220% of normal; 27% of all slugs were at least moderately blistered and one of the capsule slugs was extensively blistered. Corrosion rates on the short slugs were normal.

Two corrosion tubes and four tubes selected from the normal discharges each contained two moderately blistered slugs. In addition, one of the corrosion tubes contained an extensively blistered slug.

Twenty-seven tubes of 4-inch slugs were discharged at normal concentration without incident.

Preliminary results on a split mold containing parting leaves and intended for use in obtaining complete replicas of blistered slugs are promising.

Corrosion of Van Stone Flanges

The hot flow laboratory was operated during the month with pile effluent water at a temperature of 50° C. and heated effluent water at a temperature of 90° C.

Current measurements obtained from a flow cup cell which simulates the Van Stone flange arrangement indicate that a magnesium washer will protect 2S aluminum in the presence of stainless steel at temperatures as high as 60° C. Tests in the flow laboratory show that magnesium washers, annealed at 800° F., are mechanically satisfactory for use on pile tubes. However, silicone gaskets (No. 12602) sheared when the bolts were tightened, and Koroseal gaskets (No. 116) were too slippery to use on wet flanges.

Experimental installations involving newly formed Van Stone flanges at the F Pile included six cast aluminum-alloy (5% silicon) outlet nozzles, seven neoprene gaskets on the front face, and ten instances where a shortened stainless steel slug permitted a special zinc slug to overlap the rear Van Stone flange.

No correlation between Van Stone corrosion and the condition of gaskets removed from the F Pile was detected; this corroborates results previously obtained from the D Pile.

Corrosion studies in the flow laboratory, based on eight months' exposure, indicate that pitting of Van Stone flanges is encountered in stagnant process water and in a stagnant aqueous solution containing 0.05% sodium dichromate. No sign of corrosion was observed on Van Stone flanges exposed to stagnant aqueous solutions of the following compositions: (a) 0.5% sodium chromate, (b) 0.5% sodium dichromate, (c) 5% sodium dichromate, and (d) 50% calol.

Graphite Expansion

A crucial experiment which confirmed previous indirect evidence and opened the way to major reductions in the expansion of new piles was completed during the month. The D Test Hole Thimble in the F Pile was removed and measurements were made of the vertical distance between the tube-bearing graphite layers above and below the test hole (Production Test 105-147-P). The vertical height between tube-bearing blocks is unchanged from the nominal original height, 4-3/16 inches, suggesting that there has been no expansion of the filler blocks. The faces of the tube blocks had bulged out of plane by about 20 mils, and the vertical height

between filler blocks was about 40 mils. These measurements support the recommendation that under-sized process tube blocks should be used in new pile designs. They also indicate that if the vertical sides of the tube blocks are made concave or "hollow ground", a significant portion of the gains obtainable from narrow tube blocks will be achieved.

Considerable experimenting has been done with the use of dowels as a means for holding filler blocks in place when used in conjunction with narrow tube blocks. Experiments indicate that dowels usually shear in such a fashion that the adjacent blocks are forced apart. Hence, when narrow tube blocks expand and ultimately start shearing dowels in the filler blocks there may result an abnormal apparent vertical expansion. The use of "hollow ground" tube blocks eliminates the need for doweling in the DR Pile.

The helium purity in the circulating gas in the D Pile was reduced from 99% to 90% by the addition of carbon dioxide (Production Test 105-168-P). Reductions in purity were made in steps of about 2% per day over a five day period. No significant shield distortion was encountered, and no evidence of recovery of graphite expansion has appeared. The carbon dioxide consumption has been unexpectedly high.

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

The temperature of the special slug in Tube 2679-F was 150° C. on January 23.

Underwater Laboratory

Reproducible hardness readings have not been obtained in tests on a steel bar. Various corrective measures are being attempted. Load and deflection gages for the bend test machine have been received from Schenectady.

Can Opening Facilities

Tests indicate that adequate shielding has been incorporated into the design of these casks.

Segmented Discharge

Tests at the B Pile using the long-stroke hydraulic ram have indicated the necessity for a number of design changes.

Encouraging results have been obtained from tests on three process tubes from which the upstream dummies have been replaced by a short aluminum rod anchored to the end cap. Radiation leakage during operation is no greater than the leakage from tubes which are loaded in the standard manner. The special rods have shown no induced activity or contamination. The beam which emerges from the tube when the rod is removed is small and well defined, with intensities in the range of 1400 - 2100 mr/hr when no water is applied to the tube and 800 - 1750 mr/hr when 20 inches water pressure is applied.

Work on loading procedures for segmented charging is also in progress. Promising results have been obtained on the use of a retrievable stringer of perforated slugs for seating the charge from the front face of the pile.

Technical Department

200 AREA PLANT ASSISTANCE

Canyon Buildings

Higher than usual B Plant by-product losses (13-4-BP and 16-4-BP) which were discussed in the December monthly report were avoided during January by using a modified procedure for removing the cake from the centrifuge. Addition of the cake-dissolving acid directly to the centrifuge bowl instead of via the precipitator avoided the pick-up of variable amounts of product-containing heel. Factors controlling the heel volume in the 13-1 and 16-1 Tanks have not yet been established. Some decrease in overall decontamination factor through the Canyon Building appeared to accompany the lower losses obtained by direct cake removal.

The BX Tank farm was put into service for metal waste storage during the month. Considerable time was spent gathering information about the contents of the various metal waste tanks; a memorandum was prepared to summarize these findings.

Concentration Buildings

During previous months Production Test 224-T-11 had demonstrated that appreciable reduction of the amount of acid used in bismuth phosphate by-product (A-4-BP) cake removal by substitution of water could not be made. Although cake removal was satisfactory under the test conditions, accurate analysis of the slurry could not be achieved at as much as 500 pounds reduction in the standard 1400 pounds of 60% HNO_3 used for cake dissolution. Attention was therefore directed during January to straight reduction in the amount of acid without an attendant substitution of water for cake removal. Promise of a saving of 500 to 700 pounds of acid per run was given when satisfactory analytical results were achieved on a number of runs. The test will be continued.

One bismuth phosphate (A-4-BP) and several lanthanum fluoride by-product (D-4-BP) wastes were reworked during the month. The former occurred on a run which had a cloudy second product cake (17-4P) solution that did not respond completely to settling in 17-4 Tank and the addition of extra HNO_3 in C-4 Tank. The high D-4-BP results were due to leakage of HF into the D-1 Tank prior to the oxidation step. Considerable maintenance work was done to replace leaking valves on the HF weigh tank.

REDOX DEVELOPMENT

Demonstration Apparatus

During the month of January, eleven uranium runs were carried out on the Demonstration Apparatus columns. Seven of these runs were IA Column runs, involving the 1/2, 1 and 2-inch columns, and four were 3-inch IC Column runs. The runs varied in length from 15 to 155 hours. Except for the service function of the IC Column runs, the major purpose of which is to strip uranium from the accumulated IAU hexone solutions, primary attention was devoted to a study of limiting throughput in the IA Columns, with H.E.T.S. studies carried out at the highest stable throughputs.

A 50-hour run on the 1/2-inch IA Column was varied all the way from 20% to 70% of flow sheet throughput. At the lower end of the flow rate range, it was found impossible to obtain satisfactory control of the extremely low flow rates involved, with existing auxiliary equipment. Stable operation without flooding could not be

obtained where flow rate control was feasible. Since this run and one earlier run demonstrated the impracticability of operation of such extremely small columns in this system without highly specialized pumping systems, the 1/2-inch column has been dismantled in preparation for replacement by a 5-inch IC Column.

The first of four runs on the 1-inch IA Column attained a throughput of 130% of flow sheet conditions before gross flooding occurred. The measured H.E.T.S. value for 100% flow sheet throughput during a portion of this run was 0.8 ft. The next three runs, however, when carefully observed for mechanical performance during a throughput variation of 35 to 80% of flow sheet, showed cyclic variation or incipient flooding at local points at all throughputs above 55% of flow sheet. H.E.T.S. calculations are being carried out for selected parts of these runs involving stable operation.

The first of two runs on the 2-inch IA Column was carried out at flow sheet throughput and produced consistent flooding. The second run, carried out with varying throughput, established 65% of flow sheet throughput as the highest possible below the production of flooding. H.E.T.S. calculations for these runs are also in progress.

The four IC Column service extraction runs were carried out without incident, with extremely stable operation obtainable even at throughputs as high as 190% of flow sheet.

The results of the IA Column runs described above have made it highly desirable to carry out certain design revisions of the experimental columns, in order to study the performance under more closely controlled operating conditions. For example, solvent feed entry, packing support design, column side-stream samples, and column wall restrictions are at present all suspected of causing low-throughput flooding. All are to be changed or eliminated, together with replacement of suspected dirty packing with new or clean Fenske packing. In addition, new high porosity sintered stainless steel filters will be installed on all primary sources of column feed introduction and every effort made to keep oil or suspended solids from entering the system.

Plans for the installation of the 3-inch IA Column and the 5-inch IC Column have been completed and procurement of nearly all additional materials and equipment initiated. It is planned to shut down during the latter part of the month of February to make these and the other revisions described above, with a goal of returning to operation early in March.

Clarification tests carried out on the centrifugation of dissolver metal solution at a gravitational acceleration of 1100 G's with a 10 minute bowl hold-up in the 26-inch centrifuge have not produced satisfactory clarity. Since some of the suspended solids leak-through is of lower density than the metal solution, the necessity of filtration as well as centrifugation is apparent and such studies are to be accelerated.

Equipment Development

During the month of January, equipment development services for the Demonstration Apparatus were continued on a limited scale. Needs for instrumentation revisions and additions for the new 3-inch and 5-inch columns were surveyed and written up. Continued observation of the column static pressure and interface locating instrumentation has verified earlier satisfactory performance. The Fischer and

Porter recording-controlling rotameter has produced ± 1.5% flow control within a range of 15 to 80 cc./min., when coupled with a Hammel-Dahl control valve. Rotameter performance studies indicate greater dependability possible with more careful calibration. The M.S.A. recording explosimeter has been recalibrated for greater accuracy.

Redesign of the test model of the Scale-Up mixer-settler decanter was carried out and a series of phase separation studies performed. Using a centrifugal pump for a co-current mixer, a Column IA system (without uranium) produced rapid and highly satisfactory phase separation. A Column IC system (also without uranium), however, failed to produce any phase separation. Previous laboratory studies which failed to uncover this behavior are being extended and additional design modifications of the decanter carried out, in an effort to correct this failure.

Uranium transfer studies in the 1-inch, 3-stage horizontal extractor were started during the month. Four identical runs carried out with all three stages agitated at 1600 RPM have produced 80% stage efficiencies at solvent/aqueous flow ratios of 1.5 and total throughputs of 200 cc./min. Reproducibility measurements were within ± 1%. A magnetically coupled, transversely agitated, single-stage model has been run through preliminary mechanical testing. The magnetic couple was lost at speeds above 500 RPM, however, with poor agitation below this speed. The unit is being referred back to the Instrument Department for suitable design changes.

The General Engineering Laboratory "hot" service turbine pump has been received from Schenectady and is being connected into the test stand previously constructed for its service testing. This pump is supposed to be capable of deliveries from 0 - 3.0 g.p.m. at heads up to 180 Psi. and speeds up to 4500 RPM. Glass-filled Teflon bearings were supplied with the pump, after previous tests with Stellite bearings resulted in shaft seizures. A Thymotrol unit for D. C. current supply to a variable-speed drive for the pump has been installed.

The Tabor submerged pump has been re-tested with a new straight radial-vane impellor and now meets the manufacturer's original claim of 15 g.p.m. delivery at a 25 ft. head. Ferrule-O-Ring tubing connectors have been tested for joint make-up by means of an Ingersoll-Rand impact wrench. The 1/4-inch connectors passed an 85 Psi. air test satisfactorily, but tight seals could not be obtained on the 3/8-inch connectors because of imperfect expansion of tubing into the ferrule fittings. A new expander tool is being designed.

Corrosion testing of welded coupons of various stainless steels in Redox process solutions has been completed and a progress report is being prepared by the Metallurgy Laboratory. Solvent-HNO_3 resistance testing of the Laboratories Division's Shell Varnish protective coating has shown poor resistance. "Phenoline" surface coatings, previously shown to be satisfactorily resistant to weak HNO_3 and hexone solution, were seriously attacked in recent tests with 60% HNO_3. Samples of leaded X-ray glass exposed to high-level gamma radiation in one of the 200-North storage basins have noticeably darkened after two weeks of exposure.

Scale-Up Studies

No additional Specifications Letters for Scale-Up Apparatus design were issued during the month, but several Technical Data Letters were issued to answer minor questions raised by the Design Engineering Department. Checking and approval of construction prints, as issued by the Design Engineering Department at an accelerated pace, have been given primary attention. Concrete work on the outside

tank farm sump has been completed except for tank dunnage pads and preliminary construction has been started within Bldg. 321.

Extensive consideration has been given to the problems of NH_4NO_3 dry storage, desired reduced consumption, and disposal. Preliminary arrangements have been made to obtain the use of ammunition storage igloos at the Umatilla Ordnance Depot for bulk storage of large amounts of NH_4NO_3, if required. Detailed equilibrium calculations have indicated the possibility of cutting NH_4NO_3 consumption to 5500 lbs. per test cycle. The possibility of cribbing this amount of NH_4NO_3 in several thousand gallons of solution, also containing ca. 10 lbs. of UNH, is being investigated. A new "cold" crib in the vicinity of the 200 Area would have to be constructed to carry this out.

Preparation of a Scale-Up Operating Manual is continuing, with sections on pre-start-up checking and flushing being emphasized. The most recent prediction of the completion of construction by the Design Engineering Department is May 15.

Process Design

Redox Specifications Letter No. 16 (HW-8447) was issued on January 6. This letter outlined the tentative operating procedures and estimated time cycles for all parts of the process operations of the Test Plant. A series of technical conferences was held at the New York City offices of the Kellex Corporation on January 15-16. These conferences were primarily concerned with the detailed examination of Specifications Letters No. 15 and 16 and resulted in a series of minor changes to the process flow sheets being agreed upon. These changes are being attended to by revision of the original flow sheet tracings, copies of which are expected to be distributed to all holders of Letter No. 15 by February 6. The Kellex Corporation has agreed that all major process design specifications for the Test Plant are complete or missing parts scheduled for early completion and has agreed to prepare a detailed design schedule by February 15.

Preliminary flow sheets for the use of both $Al(NO_3)_3$ and NH_4NO_3 salting agents have been completed for the Production Plant. Preparation of the first Specifications Letter for the Production Plant has been started. This letter will include, in addition to the preliminary process flow sheets, an outline of proposed operating procedures, material balance calculations, and a reference file of all source data on which design specifications are being based.

Process Chemistry

All analytical data from the recently completed IA Column batch equilibria study have been received and correlated. An excellent straight-line "equilibrium curve" has been obtained for what is now believed to be the best correlation yet obtained.

Laboratory centrifugation studies with dissolver metal solutions indicate that maximum clarity is attained at a gravitational acceleration of 1600 G's with a hold-up time of 20 minutes and with 0.7% of Fuller's Earth present as a scavenger. Close cooperation of the laboratory studies with pending semi-works centrifugation tests will be maintained.

Preliminary spectrographic analyses of column "cruds" obtained from the Demonstration Apparatus columns revealed a surprisingly large amount (>1%) of Ti present. This has suggested the possibility of welding rod and flux scale from tank and piping construction being a large contributor to the cruds formation. Samples of

these column cruds have been sent to Schenectady Research Laboratory for a more detailed analysis and examination.

Freezing point studies with NH_4NO_3 - HNO_3 - UNH systems have nearly been completed. Dissolving studies with UO_2 and UO_3 are being planned for possible substitution of these uranium compounds for uranium metal or UNH salt in the preparation of Scale-Up metal feed solutions. Hydrazine solubility in hexone is being determined for establishment of IBS solution make-up procedures.

REDOX RESEARCH

The Chemical Research Division was organized in the latter part of 1947. During the months of August, September and October very little experimental work was possible because of delays in clearance of personnel and construction of laboratories. Since about November 1, increasing amounts of research have been initiated. However, owing to the newness of the organization, much of the available effort has necessarily been devoted to "tooling-up" operations, including training of new personnel, procurement and calibration of equipment, and establishment of working relationships with other parts of the Hanford Works organization.

Development of Analytical Methods

A method has been developed for the analysis of HNO_3 in Column IA HNO_3 -$Al(NO_3)_3$-UNH systems which is believed to be more accurate than existing methods. A large number of aqueous and hexone spike samples have shown an average deviation of 0.11 g HNO_3/l and an average error of ± 0.05 g HNO_3/l. The method involves suppression of aluminum and uranyl ion hydrolysis by addition of a large excess of KF prior to electrometric titration using a glass electrode. Dichromate ion does not interfere, although the amount of dichromate present must be known.

Several possible methods of analysis for HNO_3 in IA systems containing NH_4NO_3 have been tested. The fluoride method just described is not applicable because of hydrolysis of ammonium ion at the pH of the end point, about 9.0. A "double-electrode" method, involving titration to zero potential difference when the potential of a glass electrode immersed in a test solution is balanced against that of another glass electrode immersed in an identical solution except for the absence of HNO_3, was found promising but could not be thoroughly studied because of limitations of the available instruments. An unsuccessful attempt was made to utilize the sensitivity of the absorption spectra of isopolyvanadates to changes in HNO_3 concentration. Considerable work has been done on resin column methods for the separation of HNO_3 from UNH. Near-quantitative separations have been obtained but conditions suitable for an analytical method have not yet been found.

Stripping of Hexone from Aqueous Redox Wastes

Per cent hexone overhead vs. per cent total overhead has been determined in batch distillations of hexone-saturated water, 1M HNO_3 - 4M NH_4NO_3 solution and 1M HNO_3 - 8M NH_4NO_3 solution. Each system was run at 50, 300 and 760 mm. In all cases essentially all of the hexone was stripped after 5% or less of the charge had been distilled.

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

Both freezing and melting points have been determined for 60 of a total of about 80 of the above cited systems. Smooth curves drawn through the curves indicate an

uncertainty of 0.5°C. Effects of addition of dichromate salt and saturation with hexone are approximately as expected from molar freezing point lowering considerations.

Equipment Design

In cooperation with the Instrument Department an experimental agitator assembly for a horizontal extractor has been constructed. A stainless steel-clad Cunico rotor fitted with agitator blades is magnetically coupled through the extractor tube wall to a pair of external Cunico magnets rotated by air or pulley drive. Undesirable dead space and propeller shaft openings are eliminated by this design.

Investigation of methods and equipment for sampling of plant dissolver (#5) tanks is in progress.

Use of the Kirk-type capillary absorption cells with the Beckman spectrophotometer has been inaccurate due to the non-parallel character of the monochromatic light beam. This difficulty has been eliminated by a collimating system located immediately behind the standard exit slit and consisting of a small achromatic lens of about 1" focal length flanked on one side by a small circular aperture located at the focal length and on the other by a second aperture designed to eliminate stray light from the edges of the exit beam.

STACK GAS DISPOSAL

Previous reports have discussed the problem of evolution of particles of radioactive material from the Separation Plant stacks and have recorded the results of the studies which ascertained that the specks were contributed by corrosion of the iron duct-work associated with the ventilation fans. After one fan and its adjacent ducts at the East Area had been replaced with stainless steel, continuation of the sampling program revealed a marked decrease in the size and number of radioactive particles stopped by the filters. Exchange of the corresponding fan and ducts was also started at T Plant. While it appears reasonably certain that this equipment change will end the present difficulties caused by the large "hot" particles, there is as yet no means for removing from the Canyon Building ventilation air the extremely fine radioactive mist and dust which it contains. A demonstration of the quantity of activity and size of particles in air entering the fan ducts was obtained by filtering samples taken ahead of the fans; in addition to the high level of background activity over the entire filter paper surfaces, the presence of discrete, very fine, active dust particles was demonstrated by the Health Instrument Department using an improved radio-autographic technique.

Also of interest during the month was the finding that considerable amounts of mixed fission products are entrained in the dissolver off-gases. When samples of this gas were passed through filter papers on two different occasions, surface activity dosage rates of 3 and 33 rep/hr. were found. Radio-chemical examination of these papers revealed the fact that over half of the activity on each paper was contributed by fission products other than iodine. This indicates that removal of just the radio-iodine from dissolver off-gases will not render them innocuous, but that the entrained material must also be removed.

The hot silver reactor mentioned in previous reports was removed from the system and set aside for the I^{131} to decay sufficiently to permit the reactor to be opened and the pellets of silver examined. A new reactor and gas pre-heater were then

[redacted]

installed and one run made. In this run, one pound of the special catalyst (containing approximately nine grams of silver) removed in excess of 99% of the radio-iodine from the dissolver off-gas passed through it; about 7% of the total iodine evolved from the dissolver was contained in the off-gas sample and only one millicurie passed through to the trichlorobenzene scrubber in series with the reactor. These results have verified earlier indications of the efficiency of hot silver for iodine adsorption. Further experiments will be made to check these results.

To complete the collection of data for rates of evolution of iodine and oxides of nitrogen during normal dissolvings, a third cut was traversed with portions of alkaline scrub solutions. Radio-iodine and basicity analyses have been completed and nitrate determinations are under way.

Design work on the semi-works scale bubble cap tower and 292 Building extension have been started by Project Engineering, based on the sketches furnished by members of the Stack Gas Disposal Group.

300 AREA PLANT ASSISTANCE

Uranium Extrusion

Alpha phase extrusion of bare and copper jacketed uranium billets with the 300 Area press was attempted again on January 22 under P.T. 314-51-M, Supplement B, using a lead bath for billet preheating. Two jacketed billets preheated to 609°C (1130°F) were extruded successfully through 1.750" and 1.525" diameter dies with conditions and results as follows:

Billet No.	1	2
Copper sheath thickness	0.032"	0.032"
Billet diameter	4-1/4"	4-1/4"
Container diameter	4.650"	4.650"
Die diameter	1.750"	1.525"
Lead bath preheat temperature	609°C (1130°F)	609°C (1130°F)
Die container, cone, and insert temp's.	538°C (1000°F) to 565°C (1050°F)	538°C (1000°F) to 565°C (1050°F)
Extrusion pressure, initial	525-550 tons	900 tons
Extrusion pressure, final	525-550 tons	650 tons
Rod diameter	1.747"-1.757"	1.515"-1.520"
Rod diameter reduction to obtain slug surface clean-up, maximum	Not determined	0.158"

However, with a preheat temperature of only 576°C (1070°F), a jacketed billet failed to extrude through the 1.525" diameter die at 1000 tons pressure.

Two bare billets preheated to 609°C (1130°F) in lead were only partially extruded (2" to 5" of rod formed) through the 1.750" diameter die, with 1000-1050 tons pressure.

This successful extrusion of jacketed billets with lower pressures than were required in the trials made on December 12 is attributed to the lubricating effect of molten lead which was retained on the copper surface, which had leaked into the billet jacket. So small an amount of lead was retained on the uranium surface of the bare billets that it did not materially affect the friction between the billet

[redacted]

and the container, and the results agree with those obtained in trials with bare billets on December 12 using the rotary furnace for preheating.

At present, there are sufficient rod sections of alpha extruded uranium on hand from trials in the 300 Area and at Detroit for the machining of 53 standard 8-inch MZ slugs. Twenty of these slugs would have a uniformly fine grained structure comparable to alpha rolled material. The remainder would have a variable structure consisting of fine grained metal and a coarse grained outer layer, and/or a duplex core of un-recrystallized metal. Production Test 314-53-M is being prepared to cover the lead-dip canning of these slugs, as well as the alpha extrusion and canning of sufficient additional material to afford a significant pile test.

Billets No. Y-5167, Y-4980, Y-4998, Y-5013, Y-5077, Y-5113, Y-5119, and Y-5062 from the special "bank" of virgin uranium billets held by the Technical Department for high purity sample material were gamma-phase extruded. A 4-foot section from the center of rod Y-5167 was sent to Battelle. Four-foot sections have been cut from the centers of the remainder of the rods for Schenectady.

Gamma phase extrusion trials were made on January 16 under P.T. 314-51-M using a graphite insert between the dummy block and the billet in an attempt to eliminate extrusion butt scrap. In each of six trials, the extrusion butt was not eliminated, and the overall rod yield was lowered approximately 10% (to 84.8%) due to increased rod scrap caused by the extrusion of graphite into the butt end of the rod. However, the use of inserts showed two advantages: (1) the butt shearing operation was not required, and (2) the dummy block did not adhere to the extrusion butt.

Virgin metal uranium billets identified as Type C were received from the Electro-Metallurgical Company in the January shipment. Reported hydrogen analyses as high as 46 ppm are being investigated.

Billet No. UM-9749 from the November shipment was analyzed and found to contain 50 ppm of copper instead of the reported 200 ppm. Accordingly, the billet was released for 300 Area fabrication.

Uranium Melting and Casting

A temporary Operating Process for the Building 314 melt plant start-up was agreed upon between the Technical and P Departments.

Determinations of the crushing strength of the Type AGR graphite to be used in the melt plant operations indicated that there was no serious loss in strength when the graphite was subjected to temperatures as low as -18°C (0°F). The average crushing strength of the graphite as received is 4,160 psi. It is not anticipated that any difficulty will be encountered if this graphite is stored in unheated 300 Area warehouses.

Determination of the rate of oxidation of briquetted turnings stored in sealed cans has shown an increase in oxide content from 1.6%, as briquetted, to 2.2% after storing for 3 weeks.

Chemical and spectrographic analyses of materials to be used in melt plant operations have been made by the Laboratories Division for use in establishing Essential Material Specifications.

Slug Machining

The evaluation of substitute cutting oils, covered by P.T. 313-98-M, is nearing completion. Results to date indicate that either of the two proposed substitutes (Texaco Soluble Oil C and new-formula Calol) will be satisfactory for replacing the old-formula Calol. In comparing the qualities of 1:40 water emulsions of the three oils, both by laboratory tests and under actual lathe use in production, with the exceptions noted below, little difference among them is apparent.

With respect to tool life, the Texaco oil and new Calol are approximately equivalent, both showing consistently better week-by-week results than the old Calol. More oxide was reported on Texaco chips than on those from the two types of Calol, but the difference may be due to operator technique rather than to the nature of the oils. Other features evaluated include coolant properties, cutting properties, slug surface finish, quenching properties, corrosive tendencies, effect on chips during wet storage, and ease of removal from chips in recovery process.

Twelve eight-inch canned slugs were prepared for Schenectady's use in connection with studies on the blistering problem. These slugs were cut from the mid-portion of rods extruded from the special "bank" of virgin billets recently set aside for such purposes. The rods from which the slugs were made were outgassed under controlled conditions to avoid transformation into the beta phase, and the slugs were machined to MZ diameter. The canned slugs were identified as to parent rod and position therein, and were given standard 300 Area inspection, including pile testing. These canned slugs are now ready for shipment.

Slug Canning

Work was begun on P.T. 313-99-M, "Lead-Dip Canning of Four-Inch 'A' Diameter Uranium Slugs", using the Development canning line and P Department operators. Designed to apply the lead-dip process to four-inch slug canning, and taking account of modifications in procedures necessary to permit maximum efficiency in operation and quality in production, this work included a preliminary period of revision of equipment and techniques in which scrap slugs were experimentally canned. As a result of information gained during this experimental work, the following changes were made in the canning system:

(1) Dipping and canning fixtures arranged to accommodate two four-inch slugs at once.

(2) Al-Si dip bath eliminated, the necessary contact of slug with molten Al-Si being afforded by a dip in the Al-Si canning bath.

(3) Reduction of dipping time in lead bath from

(4) Reduction of lead bath temperature from

(5) Increase of canning bath temperature from

About 450 slugs had been processed when the lead bath crucible broke, causing loss of the bath. Repairs to this furnace, and a temporary shortage of P Department manpower resulting from the start of 2-shift operations, forced the suspension of work on this test. Meanwhile, tests are being made to evaluate the quality of slugs produced by the modified procedure described above.

1208043

A testing device was designed and constructed to measure the degree of bond adherence between the aluminum can and the slug in canned material. This device will be used in evaluating the quality of bond on both four- and eight-inch slugs canned by lead-dip and other possible processes, in comparison with triple-dipped slugs. Evaluation of bonding quality on lead-dip recovered slugs is also contemplated.

Tests to determine the feasibility of eliminating the machining of a shoulder at the cap end of canned slugs prior to welding indicated that satisfactory welds can be obtained without this shoulder. In the interest of saving time at the facing operation, shoulders are no longer being turned on canned slugs.

Slug Inspection

Twelve 4-inch "A" frost test pilot slugs were evaluated by self-radiographs. The melted areas corresponded satisfactorily to the voids indicated by the self-radiographs, and these slugs were set up as standard for frost test pilot use.

When it became apparent that the constant temperature air bath used for bringing canned slugs to temperature equilibrium prior to frost testing was no longer capable of control within the specified range of $25^{\circ} \pm 0.5^{\circ}C$, a test was run to determine the feasibility of relaxing process tolerances for temperature control in this bath. It was found that slugs brought to temperature equilibrium near the upper or lower limits of the range $25^{\circ} \pm 2^{\circ}C$ were variable with respect to size and appearance of melted areas developed in subsequent frost testing. The P Department is taking steps to improve the control facilities for this air bath.

Miscellaneous

Nine slugs for Special Request 62 were crimped at both ends. These slugs were too short to test in the standard bubble tester, and it was necessary to construct a bubble tester to accommodate slugs of this length. With the new testing device, the request pieces were found satisfactorily crimped. Owing to the presence of leaks in four of the six cartridge pieces comprising a part of Special Request 62, it was impossible to can them to meet the scheduled shipment to the 100 Areas on January 16. However, two of the four leakers were canned for returning to the supplier, together with three of the crimp-closed pieces. The two non-leaking cartridges were also successfully canned. All of the 15 pieces covered by this request are being held pending decision as to their disposal.

The X-ray radiographs of 104 gamma extruded and 96 alpha rolled Hanford slugs were received from the Research Laboratory at Schenectady and are being used to select a significant number of the radiographed slugs for a pile exposure test (PT-105-171-P) designed to evaluate the effect of internal voids on dimensional stability.

Six capsules were fitted to capsule slugs, were loaded, crimp-sealed, bubble tested and sent to 100-F Area for charging. Difficulties encountered in crimping these caps, presumably because of the use of a softer grade of aluminum in their manufacture, made necessary some changes in the design and construction of the crimping equipment.

[redacted]

METALLURGY LABORATORY

Alpha Extruded Uranium Rod

Examination of the microstructures of the rods which were alpha extruded in the 300 Area on December 12, 1947 revealed un-recrystallized material present in the leading 14 inches in each of the rods. The remainder of each rod is recrystallized and is fine grained except for a coarse grain layer on the surface. The small grain size of each rod is as follows:

	Average Grain Diameter		
	Lead End	Middle	Butt End
Bare rod	0.030 mm(1)	0.035 mm(2)	0.035 mm
Copper-clad rod	0.025 mm(3)	0.030 mm	0.035 mm

(1) Average grain diameter of 0.030 mm = 1110 grains/mm^2
(2) Average grain diameter of 0.035 mm = 820 grains/mm^2
(3) Average grain diameter of 0.025 mm = 1600 grains/mm^2

Examination of the macrostructures of the two copper jacketed rods which were alpha extruded in the 300 Area on January 22 was made by taking wafer samples at nine-inch intervals, starting at a point two inches from the lead end (wafer #1). The macroetch revealed structures as follows:

Small rod (diameter = 1.5+") — The lead end of the rod contains small areas of unrecrystallized material for at least the first 12 inches. The remainder of the rod is completely recrystallized and is composed of small alpha grains.

Large rod (diameter = 1.7+") — Wafer #1 contains a small patch (1/2" x 3/16") of medium grains at the edge. Wafer #2 has a very small lead inclusion 3/16" from the edge. Wafer #3 has a crack extending inward from the surface for 1/8" and a few medium grains around a very small lead inclusion 1/4" from the surface. The remainder of the rod is fine grain except for a small amount of unrecrystallized metal scattered throughout the entire length of the rod.

Microscopic examination confirmed the results obtained by macroscopic studies. The amount of unrecrystallized metal was estimated to be approximately 5 per cent in the large and approximately 1 per cent in the small rod. The coarse-grained surface which has characterized most alpha extruded rods was absent from both of these rods.

Grain size measurements made on samples removed from the lead, middle, and butt end of the 1.52" rod showed an average grain diameter in each sample of 0.020 mm. The average grain diameter in the 1.75" rod varied from 0.025 mm. in the lead and middle sections to 0.020 mm. in the butt end.

22

1200045

[redacted]

Examination of Irradiated Uranium

Operational tests on the slug cut-off box, using a steel bar of approximately slug dimensions, have shown the necessity of making several design changes. A 7-1/2 H.P. motor has been attached, and a 0.030" misalignment of the cut-off wheel support is being corrected. All miscellaneous equipment has been obtained for the sectioning operation. Trial runs on a "cold" uranium slug are anticipated in the very near future. Blueprints showing the "tentative-unapproved" design of these cut-off boxes were supplied the A.E.C. for forwarding to Dr. S. Siegel at Clinton Laboratories.

Work is in progress to standardize the laboratory procedure to be used for the preparation and examination of the sections removed from the "hot" slug.

An investigation of the possibility of using the replica technique for evaluating the microstructure of irradiated uranium was begun. Samples of steel and uranium were polished and polystyrene replicas obtained. The replicas were then covered with a thin coat of sputtered aluminum. Microscopic examination of these coatings shows that, although the technique is very satisfactory for steel, it is unsatisfactory, at the present, for observing the structure of uranium.

Lead-Dip Slug Recovery

The results of the investigation of the compound layers of lead-dipped slugs recovered and recanned by a simple redipping method was issued as Document HW-8368, dated December 26, 1947.

A further study of a comparison and the definition of the compound layers on lead- and triple-dipped slugs is continuing.

Dilatometric Studies of Uranium

Results of additional test runs on the preliminary dilatometer have been obtained using copper and tin as standards. Calculations show an average coefficient of expansion for copper in the range of 20° to 400°C to be 18.1×10^{-6} per °C. This coefficient agrees with the value of 18.3×10^{-6} per °C given in the Metals Handbook. Calculations show the coefficient of expansion for tin, in the range of 20° to 230°C, to be 23.61×10^{-5} per °C. This value agrees with that of Cohen and Olie ("Das Atomvolumen Allotroper Modifikationen bei sehr. Tiefen Temperaturen" Z. Physik Chem. 1910, v. 71, p. 385), which is 23.0 to 24.3×10^{-6} per °C. Studies on uranium will begin as soon as a suitable protective atmosphere is obtained.

Uranium Billet Studies

Studies of the micro- and macro-structures of uranium billets have been started as an aid in understanding some of the structural variations observed in the rods after fabrication, and also as an aid in evaluating billets produced by the new 300 Area casting plant. The possibility of obtaining a pseudo single crystal of alpha uranium from one of the large grains will also be investigated.

Redox Corrosion Tests

Stainless steels T-347, T-316, T-309, La Bour Alloy B-55, ESCO Alloy 45, Ingersoll-Rand alloy 372, Worthite, monel, nickel, and inconel metals were inspected after immersion from 1-1/2 to 5 months in Redox solutions. No excessive corrosion was observed.

Investigation of five 2S aluminum test coupons, the material tentatively planned for flame checks above NH_4NO_3 and HNO_3 solutions, showed this metal to be preferentially attacked with an increase in weight after two-week exposure to NH_4NO_3 vapors. The aluminum coupons exposed to HNO_3 vapors do not indicate any visible attach nor any significant weight change.

Miscellaneous

Specimens of each of the two pieces of the pile process tube which was fractured longitudinally on removal from the 100-F Pile were micro- and macro-examined. It was concluded from these examinations that the failure was caused by the method of removal, and that the material was not defective as received at Hanford Works.

LABORATORIES DIVISION

Work Volume Statistics

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

	December 1947		January 1948	
	Samples	Determinations	Samples	Determinations
Routine Control, 200	1666	2607	1858	2559
Routine Control, 300	755	3321	792	3001
Water Control, 100, 700	9853	17483	9833	17438
Redox Control	1048	2245	1391	4576
Process Reagents	788	1391	811	1462
Essential Materials	139	759	113	606
Special Samples	1030	2606	1707	2532
Totals	15289	30417	16231	32754

200 Area Process Control

Dr. M. Studier and Dr. E. K. Hyde, from Argonne National Laboratory are assisting in the setting up of equipment in the 200-E Control Laboratory (222-B) for analytical work pertinent to their Special Request #44. Operational details and special hazards control methods are being worked out.

Routine measurements of the geometry of the methane proportional alpha counting instruments (accepted value 50.5%) in the 200 Area Control Laboratories were as follow:

Laboratory	Ave. Geometry	No. of Tests
B & T Plant	50.53 %	84
Isolation Bldg.	50.48 %	89

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:

	December 1947		January 1948	
Sample	Precision (±%)	No. out of Control	Precision (±%)	No. out of Control
8-1-MR	1.30	8	1.30	10
P-1	1.46	3	1.57	5
AT	1.34	2	1.29	1

The average range for the last 49 AT titrations was 0.84%, as compared to 0.75% for 32 results in December.

The standard iron solution used in the Isolation Laboratory to check the chemical titration of plutonium was analyzed a total of 118 times during the month. There were 75, 26, and 17 results inside ± 1%, ± 2%, and outside ± 2% of the assay value, respectively. The average precision for duplicate titrations was ± 2.83% as compared to ± 3.77% for December. A summary of the results follows:

Assay Value	Group Ave.	% Diff.	No. Determinations	Precision Single	Precision Duplicate
11.51	11.54	+ 0.3	24	3.68	2.60
12.68	12.66	- 0.2	26	4.62	3.25
13.57	13.49	- 0.6	20	4.67	3.31
11.51	11.56	+ 0.5	22	2.31	1.65
14.84	14.78	- 0.4	26	4.71	3.33

The synthetic 8-1-MR solution was analyzed 16 times in the B & T Plant Control Laboratory. The standard precipitation procedure CA-2a was used, with percent recovery based on 2.077 x 10^6 c/m/ml. The results may be tabulated as follow (expressed as c/m/ml):

Month	Maximum	Minimum	Group Ave.	% Recovery
December 1947	2.036	1.931	1.994	96.1
January 1948	2.047	1.883	1.977	95.3

Since the percent recovery seems to be decreasing, the assay value on the standard solution will be checked during February.

300 Area and Essential Material Control

Routine analytical control in these laboratories was placed on a two-shift basis, effective January 26. This change was made to accommodate two-shift production in the 300 Area.

Graphite Analysis

A sample of graphite whose reactivity value indicated a boron concentration of approximately 0.7 ppm. was analyzed and found to contain 0.74 ppm. of boron. Fifty pounds of this sample was prepared for transmittal to the National Carbon Company for use as a standard (designated Std. Sample #6). Analysis of a series of forty graphite, coke, and pitch samples received from the National Carbon Company is in progress.

Analytical Development - Redox

During January satisfactory methods were developed for the determination of aluminum in Redox solutions. High concentrations of aluminum were determined by the simultaneous precipitation of uranium and aluminum as the oxine. The total precipitate is ignited and weighed as the oxide. The uranium, determined on a separate sample by a volumetric procedure, is subtracted and the aluminum is obtained by difference. This method is satisfactory as long as the ratio of

[redacted]

uranium to aluminum is not above 10 to 1. As the ratio increases it becomes necessary to dilute the sample to about 300 ml., and to complex the uranium with ammonium carbonate and sodium tartrate. The aluminum is then precipitated alone by adding an alkaline solution of 8-hydroxyquinoline. When the aluminum concentration is extremely small, a colorimetric method employing hematoxyline is used with good results.

A micro-volumetric method for the determination of uranium was issued as a tentative control procedure. This method consists of the following steps: The nitrate-free uranyl solution is reduced with chromous sulfate in an inert atmosphere, and the excess chromous ion is destroyed by air oxidation. The oxidation of U^{+4} is prevented by displacing the air with carbon dioxide immediately after the potential rise which indicates the absence of Cr^{+2}. The resulting U^{+4} solution is heated above 90°C and titrated potentiometrically with ferric sulfate. The following table gives the accuracy of the method for various amounts of uranium in nitric acid solution:

Burette ml.	mg. U	Number of Titrations	Average % Recovery	Range %	Standard % Deviation
1.0	7.14	5	99.4	1.0	0.35
0.5	3.57	7	99.7	2.8	0.76
0.1	0.893	6	99.8	4.7	1.83
0.1	0.713	3	99.9	3.7	1.56
0.1	0.357	6	103.3	5.0	2.35

Since this method gave reasonable accuracy and precision with pure uranium solutions, it was used on synthetic LAW samples. This sample was used since it contains the highest ratio of other compounds to UNH in the LA system.

To use the ferric sulfate titration, it is necessary to eliminate all ions capable of oxidizing the Fe^{+2} or reducing the Fe^{+3}. The hexone is removed by simple boiling. The nitrate ion is removed and chromium is reduced to the +3 state by boiling the sample with concentrated HCl. With this preliminary treatment samples as large as 5 ml. can be used. Using synthetic LAW samples, containing known amounts of UNH, the following results were obtained:

Burette ml.	g/l UNH	Number of Titrations	Average % Recovery	Range %	Standard % Deviation
1.0	5.0	3	99.0	1.1	0.39
1.0	3.0	3	98.3	2.3	0.95
0.5	1.88	4	102.1	2.1	0.72
0.1	0.63	6	99.9	3.9	0.17

During the investigation of various methods for the reductions of U^{+6}, an extensive study of air oxidation of uranium solutions was made. Aerations were carried out at room temperature in a laboratory illuminated with fluorescent lights. The data obtained indicated that fluorescent illumination had a considerable catalytic effect upon the air oxidation of U^{+4} to the U^{+6} state. To confirm this, additional samples were aerated in the dark and in the direct illumination of a fluorescent lamp. These data confirmed the catalytic effect. Evidence was obtained to show that, upon aeration, the potential of a mixed U^{+3} and U^{+4} solution rises immediately to above the U^{+4} potential as soon as aeration is begun. This indicates that control of the oxidation of uranium to the +4 state by air would be difficult when the uranium concentration is low.

The development of analytical methods for the 1B system has been started. A complete forecast of the methods needed and of the ranges in which they must operate is being prepared. Meanwhile, two basic procedures, iron and hydrazine, are being worked on. Present results indicate that ortho-phenanthroline will be a satisfactory reagent for the determination of iron. Several colorimetric methods for hydrazine are being investigated.

Routine determinations of UNH in both aqueous and hexone samples was started on the X-ray Photometer during this period. Interpretation of the data available at this time indicates that the analytical time for this determination is approximately six minutes per sample (versus 60 minutes by the best wet chemical method). The precision of the method has been greater than was expected and tests have shown that the interferences present are considerably less than were originally predicted. This generalization holds true for aluminum, ammonium, and chromium salts. When this instrument was first used for routine analysis, an apparent discrepancy of approximately 2% between operators was found. Upon investigation this irregularity was found to be caused by variations in the attenuator blocks furnished with the instrument. Blocks machined to optical dimension have been ordered to eliminate this difficulty. Pending their receipt, positioning clips are being used with the present blocks to obtain reproducible results.

Shortly thereafter, a difference of as much as 16% was noted between determinations made on the same sample at different dilutions. This phenomenon indicates that in some regions the working curves being used are in error. These errors may be caused by several factors, among which can be listed the following:

(1) Non-linearity of the scales.
(2) Non-linearity of the attenuator disk.
(3) Failure to use material for balancing the attenuation which is similar to the material being analyzed.
(4) Inefficiency of the phosphor. A possibility exists of obtaining a much better phosphor, by using a polynuclear aromatic compound similar to napthalene.

While these points are under investigation, these errors are being minimized by determining a large number of standard points for the construction of a more precise working curve.

Special Hazard Control

Redesign on the new model of the stainless steel hood is nearly complete, and several significant modifications have been made. The overall height of the hood has been reduced to 58", and by re-arranging the support rods the entire

gloves during analytical manipulations would be beneficial in preventing hand contamination. Some increase was noted in the number of non-regulated pieces of equipment found contaminated. As a check on the validity of these results, a second test is in progress to cover the period from January 12 to February 13.

STATISTICAL STUDIES

Graphite Quality

The most recent KS heats had an average dih significantly higher than those tested previously. The variation between heat averages is decreasing for both CS and KS material, indicating that quality is becoming more consistent from heat to heat. However, the differences due to bar position in the heat treatment furnace continue to be of the same type and magnitude as in the previous heats tested.

Weekly graphite quality reports now are being issued routinely. The form of these reports was worked out jointly with the Pile Physics Division.

300 Area Quality Control

Statistical quality control charts have been installed in four locations in the 300 Area metal fabrication buildings. These charts pertain to each inspection reject cause, and to the yield of "Class III" slugs. They are being maintained jointly by the P Department and the Statistics Division.

Slug Reactivity Control

At a meeting of representatives of Pile Physics, 300 Area Plant Assistance, and Statistics, recommendations were devised for revisions in slug inspection which would increase the in-hours in the 100 Area piles, and at the same time reduce the amount of solid uranium scrap and lessen the amount of 300 Area slug diameter inspection required.

Can Wall Thickness

An experiment was designed at the request of the P Department to determine the variations in slug can wall thickness around, along, and between standard 4" aluminum cans as a preliminary step in setting up a control for can wall thickness. There were eight measurements taken around the can at each of nine positions along the can. In the 30 cans measured, the wall thickness around the can was not uniform. In general, the maximum and minimum thicknesses were 180° apart. The average difference between these two positions varied from 2.5 mils to 6.0 mils. Along the can the wall had a consistent, though slight, tendency to be thinner near the base end. The average difference in wall thickness between the open and the closed ends was 1 mil. The average wall thicknesses of the 30 cans differed significantly from each other. Work is continuing on this problem.

Coolants in Slug Machining

In a Graeco-Latin Square experiment designed to test differences between coolants in slug machining in the presence of possible lathe and operator differences, it was determined that two new coolants drew a maximum amperage during cut-off slightly less (of questionable significance) than that required by the coolant now in use. From this viewpoint, either of the new coolants could be recommended as a satisfactory substitute for that now in use. Highly significant differences in maximum amperage were found between different lathes and different operators.

Diameter Measurements of Slugs Before and After Prolonged Heat Treatment

The diameters of 25 slugs (PT-314-45-M) were measured in two index positions 90° apart, and at 15 equally spaced intervals along the slug, before and after prolonged heat treatment at 300°C. An analysis of variance was performed to determine whether evidences of slug blistering could be found. Such evidence would be in the form of an interaction between positions and treatments. No significant interaction between positions and treatments was found. However, a significant interaction was found between slugs and treatments, indicating that the effect of the heat treatment on the slug diameter varied for different slugs. No other significant differences due to the heat treatment were found.

Neither t nor F-tests showed any significant difference in the weight, diameter, length, or warp of the slugs before and after the heat treatment.

Uranium Hardness Measurements

A statistical analysis was made of uranium hardness data submitted by the Metallurgy Laboratory. Rockwell D and K readings were taken at 4 positions around the slug at each end and the center on each of 16 caustic-stripped slugs before and after an acid strip. An analysis of variance on the Rockwell K readings showed a significant difference between slugs, and a significantly greater hardness after acid stripping. A similar analysis on the Rockwell D readings showed significant differences between slugs, but no difference due to acid stripping.

No correlation was found to exist between the Rockwell D and K readings ($r = +.004$). A correlation coefficient this low indicates the two hardness readings are measuring different characteristics of the metal.

The average slug hardness and the 99% confidence limits (the range within which 99% of the individual measurements would be expected to fall) were computed for Rockwell D and K scales before and after acid stripping. These will be compared with the results of similar readings on exposed slugs.

Van Stone Flange Corrosion

At the request of the Pile Engineering Division, correlations are being run between the amount of Van Stone flange corrosion and the horizontal positions of the tubes in 100-D pile. In the 0.175" zone a significant correlation coefficient (+0.2340) with minimum thickness for the front face was found. In the 0.140" zone there was a coefficient of questionable significance (+0.1420) for the front face. The correlation coefficients for the two individual zones of the rear face were not significant. Further correlations are in progress.

Effect of Blistering on Weight Loss Due to Corrosion

Data on the extent of blistering and the weight loss in water of 5 tubes of highly exposed slugs were submitted by the Pile Engineering Division. No evidence of a relationship between slug blistering and slug corrosion could be found.

Liquid-Vapor Equilibrium Curves for Hexane-Aqueous Systems

From data submitted by the Chemical Research Division, nine liquid-vapor equilibrium curves were fitted by the moving average method. The problem now has been extended to include the calculation of kettle composition curves, and the thermodynamic activity coefficients. Activity coefficients have been computed for three of the nine runs where the components were hexane and water only. The next procedure will be to find whether these computed activity coefficients satisfy the Van Laar equation.

Health Instrument Data

An attempt to fit a Pearson Type III distribution curve to spike recoveries in radio assay urine analysis was unsuccessful. Upon breaking the data into monthly groups, the averages and standard deviations were found to follow a trend. This accounted for the poor fit obtained for the cumulative distribution curve. The Health Instrument Department is making an investigation to determine the reason for the observed trend.

The probability of a contaminated individual falling outside the control limits for the present urine analysis test was computed for various contamination levels. Of importance, it was found that the probability of failing to detect contamination in an individual contaminated beyond the present tolerance limit is less than 1 chance in a million.

The design of an experiment to determine the absorption of radioactivity of various types of vegetation was worked out with a member of the Health Instrument Department.

Other Problems

The following problems, not reported upon, are still in progress: (1) Essential Materials, (2) Blood Count Data, (3) Precision of Redox Analyses, and (4) Control of Radio Assay Counting Instruments.

INFORMATION DIVISION

Plant Library

Work on the acquisition, cataloging, and circulation of books is gathering momentum. The Plant Library pamphlet file was set up, using standard library subject headings. This will serve to organize a large collection of miscellaneous but valuable pamphlets which have collected and backlogged over a long period, and will be the nucleus for a useful and standard reference tool. In addition, a specifications and standards file, greatly needed by the construction groups here, is well underway and when complete will contain an almost complete file of engineering standards and specifications promulgated by the various trade and professional associations of the United States.

The new reading room in Bldg. 3702, although crowded most of the time, will probably be spacious enough when the allocated quarters are again fully available. One need coming to the fore, however, is the necessity for two or three study rooms to which individuals can retire for solitary reading and work.

The acquisitions and book processing procedures have been considerably streamlined by the concentration of these functions, formerly scattered, in a single unit in the W-10 building. In this building, also, a reading and study room is being opened in conjunction with the School of Nuclear Engineering.

A tentative final draft of a staff "Manual of Procedure" was fully completed and is being proof-read. This manual, based on standardized library techniques, will set up acceptable clerical routines for the library staff in the Division, and will attempt to clarify the library's circulation policies. In connection with this, and in effort to simplify some procedures, a time study was made of the clerical staff. This study indicates that supervision is spending too large a proportion of time in clerical routines, and corrective measures are planned.

A beginning was made on a publication to be called the "Information Bulletin". Title and format have been decided upon, the covers are being printed, and the first inserts have been prepared. The new publication will include new books added to the library's collection, call attention to articles in the current literature of interest to technical groups, and list all unclassified documents added to the Files. Plans are eventually to limit the present bi-monthly list to classified materials only, so that the "Bulletin" can be more widely distributed and used throughout the plant.

Library statistics for January were as follows:

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

300 Area Classified Files

Work on the receipt, issuance, and routing of documents proceeded routinely. The setting up of a catalog index for the MDDC reports was completed, checked against the known documents, and a beginning made on checking the MDDC document holdings against this catalog. It is planned, when all discrepancies between catalog and holdings have been taken care of (this will involve securing the index cards which are lacking, and any MDDC documents which are not here) to move this unit out into the library proper in order to acquaint patrons with its potentialities, and to encourage more widespread use of this valuable reference tool.

A tentative plan is being drafted which will suggest a division of function between the 700 Area Classified Files (Service Department) and the 300 Area Classified File unit of the Information Division. A detailed study, which breaks down the routines now being performed by both units into some 35 separate procedures, has been completed and allocation of these individual routines will form the basis of the proposed division.

1208054

Technical Department

Document statistics follow:

Documents routed	3286
Documents issued	742
Reference services rendered	2045

POWER DEPARTMENT

JANUARY 1948

GENERAL

Inspection and osmoplastic preservative treatment of all wood steam line poles was completed during the month. A relatively small percentage of poles was decayed beyond repair and will be replaced.

ORGANIZATION AND PERSONNEL

The Power Department force was reduced by four members during the month.

100 AREAS

On January 1 a break occurred in the south process water line in the B Area between the filtration plant and the deaerator building. During the outage process water was supplied through the north line until repairs were completed and the south line was returned to service on January 20.

Re-enforcement of barricades in all process water pipe tunnels between process water pump rooms and pile valve pit buildings was completed on January 24. This work was done at the request of the Security Division.

On January 12 the west clearwell in F Area was drained to repair expansion joints in influent flume, suction slume, and overflow weir. Upon refilling the clearwell on January 14 it was determined that leakage in the overflow sewer still existed when water level was above 6½ feet. Further repairs are planned on future scheduled shutdowns.

Steam-air jets have been installed on one boiler in each area. Accurate test results are not yet available, but progress in the elimination of heavy smoke and improved combustion efficiency is indicated.

200 AREAS

Numerous unsuccessful attempts have been made to stop leakage from the B Area elevated water storage tank. This tank will remain out of service during the winter months.

300 AREA

The installation of the new 25,000 pound per hour boiler at the steam plant is proceeding in a satisfactory manner. It was necessary to relocate the chemical feed equipment during this installation.

700 AREA

The No. 1 boiler was inspected during the month and measurements taken on the depth of the circumferential groove in the east boiler drum. This measurement was 3/16 of an inch, the same measurement which was obtained in November 1945, indicating that no additional penetration has occurred.

Power Department

1100 AREA

Excavation work for a new Village water supply pumping station north of John Dam Park was started on January 16.

It was necessary to relocate an eight-inch water main near Columbia High School to permit building expansion in that area.

MISCELLANEOUS POWER OPERATIONS

Repairs have been successfully completed to the Worthington refrigeration compressor at the White Bluffs Ice Plant. This unit has been out of service since September 1947 on account of a cracked water jacket.

A 1000 gpm pump was temporerily installed at the 3000 Area booster station as a replacement for the original emergency pump unit which was taken out for repairs.

POWER DEPARTMENT STATISTICS

From: January 1, 1946
Thru: January 31, 1946

			100-B	100-D	100-F
River Pump House (Building 181)					
River stage	Feet above sea level	(max)	387.9	379.9	385.6
		(min)	386.4	378.6	385.0
		(avg)	386.6	379.2	385.2
River temperature	avg. ° F.		41.7	41.2	41.0
Water pumped to Reservoir	gpm avg. rate		11934	39524	35903
Water pumped to refg. condensers	gpm avg. rate			0	0
Reservoir (Building 182)					
Water pumped to filter plant	gpm avg. rate		11277	33095	30870
Water pumped to condenser system	gpm avg. rate		535	3927	3860
Water pumped to export system	gpm avg. rate		22	2502	1173
	gpm normal rate		3697	3697	3697
Chlorine added at No. 1 inlet	pounds		4126	7757	4000
Filter Plant (Building 183)					
Filtered water to power house	gpm avg. rate		107	322	272
Filtered water to Process	gpm avg. rate		10540	28511	27705
Filtered water to Fire & Sanitary	gpm avg. rate		56	77	167
Chlorine used in water treatment	pounds		316	2243	6000
	ppm avg.		1.2	.71	.82
Lime used in water treatment	pounds		4596	28540	42000
	ppm avg.		1.1	2.3	3.7
Coagulant used in water treatment	pounds		42915	142992	170000
	ppm avg.		10.2	11.6	14.8
Raw water pH	pH avg.		7.81	8.01	8.0
Finished water pH	pH avg.		No Anal.	7.42	7.45
Alkalinity, M. O. - Raw	ppm avg.		57	57	58
Finished	ppm avg.		54	53	53
Residual chlorine - Settled	ppm avg.		.26	.18	.29
Finished	ppm avg.		.13	.14	.17
Iron - Raw	ppm avg.		.04	.04	.04
North Clearwell	ppm avg.		No Anal.	.02	.01
South Clearwell	ppm avg.		No Anal.	.02	.01
Hardness - Finished	ppm avg.		62	72	74
Turbidity - Raw	ppm avg.		2.1	2.1	2.0
Filtered	ppm avg.		No Anal.	0	0
Refrigeration (Building 189)					
Refrigeration produced	tons per day			0	0
Temperature, Process water in	avg. ° F.			-	-
Temperature, Process water out	avg. ° F.			-	-

Power Department

		100-B	100-D	100-F
Power House (Building 164)				
Steam generated - total	M pounds	36739	113511	102520
avg. rate	lbs./hr.	49381	152569	137795
235 psi steam to plant (est.)	M pounds	32180	98713	89453
15 psi steam to plant (est.)	M pounds	150	1176	765
Coal consumed	tons	2313	8599	8950
Coal in storage (est.)	tons	21022	49491	47069
Degenerator Plant (Building 185)				
Water flow	gpm avg. rate	10295	28223	27455
Chemicals consumed:				
Dichromate	pounds	2800	19800	21700
Sodium silicate	pounds	94536	241277	219100
Chemical Analysis:				
pH	pH avg.	7.62	7.66	7.68
Dichromate	ppm avg.	No Anal.	1.94	2.0
Silica	ppm avg.	No Anal.	5.82	5.8
Dissolved iron	ppm avg.	.02	.015	.01
Free chlorine	ppm avg.	.06	.16	.15
Process Pump Room (Building 190)				
Total water pumped	gpm avg. rate	10255	28046	27280
	gpm normal rate	10255	31540	31050
Water temperature	avg. ° F.	43.3	43.5	43.4
Valve Pit (Building 105)				
Chemicals consumed:				
Solids	pounds	0	2250	800
Chemical analysis:				
A, B, C & D Headers				
Standard limits				
pH 7.6 - 7.8	pH	(max) 7.70	7.70	7.70
		(min) 7.60	7.60	7.60
		(avg) 7.63	7.68	7.65
SiO_2	ppm	(max) 6.0	6.0	6.5
		(min) 5.5	5.0	5.0
		(avg) 5.7	5.8	5.9
$Na_2Cr_2O_7$ 1.8 - 2.2	ppm	(max) 2.1	2.0	2.2
		(min) 1.8	1.9	1.9
		(avg) 1.9	1.93	2.0
Iron	ppm	(max) .03	.02	.02
		(min) .01	.01	.005
		(avg) .02	.018	.01
Chlorides	ppm avg.	1.9	1.2	1.0

Power Department

		200-E	200-W
Reservoir (Building 282)			
Raw water pumped	gpm avg. rate	1,988	1,878
Filter Plant (Building 283)			
Filtered water pumped	gpm avg. rate	435	405
Chlorine consumed	lbs.	206	150
Alum consumed	lbs.	1,700	2,500
Chlorine residual - sanitary water	ppm	.80	.65
Power House (Building 284)			
Steam generated - total	M lbs.	25,735	31,011
Steam generated - avg. rate	lbs./hr.	31,969	41,907
Coal consumed (est)	tons	1,415.5	1,981
Coal in storage (est)	tons	13,103	16,188.5

		300	700	1100
Power House (Buildings 354 and 784)				
Steam generated - total	M lbs.	14,609	29,360	
Steam generated - avg. rate	lbs./hr.	19,636	40,134	
Coal consumed - total (est)	tons	842.5	2,122	
Coal in storage (est)	tons	2,220.5	6,012.5	
Sanitary and Fire System (1100)				
Well water pumped - total	gal.			72,977,000
Well water per day	gal./day			2,321,800
Well water	gpm avg. rate			1,612
Chlorine residual	ppm			0.2
Sewage Treatment Plant (1100 Area)				
Total sewage treated	gals.			61,100,000
Sewage treated per day	gals./day			1,970,970
Sewage flow	gpm avg. rate			1,369

January, 1948

GENERAL:

There was one major injury in the Maintenance Department which occurred on January 21st. There were two sub-major injuries in the department during the month and one minor injury which occurred November 24th was classified as a sub-major this month. The second month of the Maintenance Safety Derby was completed with the 300,700, and 1100 Areas leading at the end of the period.

The pouring of concrete foundations for the Tank Farm Basin on the scale-up unit of the Redox program was completed January 30th. The addition to the 3707 Change House is now being occupied by the operating department and the built-up asphalt roof will be installed as soon as the weather permits.

One of the exhaust fans at 291-T in the 200 Area was replaced with a stainless steel one and good progress is being made on the fabrication of the third fan. Work is progressing very well, in spite of the cold weather, on the 241 TX Tank Farm Project.

In the 700 Area excavation was started for the addition to Building 702, project for increase of telephone facilities.

The Radio Communication Building on Cable Mountain was completed and occupied on January 12th.

ORGANIZATION AND PERSONNEL:

The total personnel of the Maintenance Department increased from 1073 to 1074. Nine were added to the rolls as follows:

3 Office Helpers	1 Typist
1 Painter	1 Pipefitter
1 Mechanic	2 Helpers

Three of the above were transferred in from other departments and the remainder were hired from outside. Three transferred out to other departments. Five men terminated and one man was removed from the payroll. One man was reactivated.

WORK ORDER SUMMARY:

FIELD FORCES

Area	Work on Hand 12/25 No. of Orders	Work on Hand 12/25 Estimated Man Days	Work Completed in Jan. No. of Orders	Work Completed in Jan. Estimated Man Days	Work on Hand 1/25 No. of Orders	Work on Hand 1/25 Estimated Man Days
100-B	93	272	141	259	78	239
100-D	53	315	281	329	59	484
100-F	129	438	239	586	118	268
Central Shops	220	2071	230	1210	231	3365

Area	Work on Hand 12/25 No. of Orders	Work on Hand 12/25 Estimated Man Days	Work Completed in Jan. No. of Orders	Work Completed in Jan. Estimated Man Days	Work on Hand 1/25 No. of Orders	Work on Hand 1/25 Estimated Man Days
200-E	295	2039	376	2092	335	2588
200-W	1013	4041	539	3912	1033	5185
300	342	1855	350	1662	375	2093
700/1100	1673	11644	1245	6919	1641	12449
Minor Const.	220	4217	86	891	190	7782
Total	4038	26925	3491	17864	4060	34245

ENGINEERING SECTION

	Work on Hand 12/31 Estimated Man Days	Work Completed in Jan. Estimated Man Days	Work on Hand 1/31 Estimated Man Days
Studies	214	121	242
Projects	6529	1907	7564
Total	6743	1828	7806

The above work order summary indicates the following changes in the backlog of work during the month:

100 Areas increased 40%
200 Areas decreased 9%
300 Area increased 12%
700/1100 Areas increased 24%
Minor Construction increased 85%
Engineering Section increased 16%

100 AREAS:

In 100-B Area the west loop of the filtered water line from Building 183 to Building 185 developed a leak due to the longitudinal splitting of a length of thirty-six inch cast iron pipe. A full length of B.&S. pipe was installed by cutting the steel line close to the 183 pump room (at an angle) and removing a short length of steel line and a full length of cast iron.

In the 105-B unit four hundred and fifty-two Van Stone flanges were inspected and eighty were repaired. In the 105-F unit four hundred and fifty-three were inspected and two hundred and fifty-five repaired.

A three and one-half inch steam supply line was run approximately two hundred and sixty feet from the 115 Building in 100-D Area to the construction fence of the 105 DR Area in order to supply this area with steam.

A seven cylinder CO_2 manifold was installed in the fan room end of the 115-F

Building. This gas will be fed into the two inch low pressure Helium make-up line and also into the sixteen inch returner header in the pipe tunnel.

Eighteen one-inch vent pipes were installed on the two forty-two inch steel effluent lines at 100-F Area for a distance of two hundred feet where these lines cross an island in the river. This installation was necessary because the trapped air in these lines did not escape through the one-half inch diameter holes originally drilled in the pipe.

In the 105-F Area, tube 1682 was replaced with 2-S aluminum tube and tube 1686 was replaced with a tube purchased for the "DR" unit.

The step plug of #38 vertical safety rod in the 105-F Area was realigned.

In the 105-F Area a new thimble, step plug and the spare "B" test hole assembly was installed in the "D" test hole position. A lead discharge line was run into the tunnel from "B" hole. The thimble was tested hydrostatically at 60 p.s.i. for one hour.

200 AREAS:

The removal of No. 2 fan at the "T" Canyon ventilation Building, and installation of a replacement fan with stainless steel ducts has been completed. This is the first replacement fan installed at this site. The area shops have completed fabrication of the third fan, and are running it in at the "U" site, in preparation for installation at "T" plant.

The replacement of the HF transfer system from the tank farm to the concentration building is completed. Installation was made of one and one-half inch seamless 80 iron pipe with welded flange and teflon gasket construction. The manifold piping at the concentration storage tank and distribution piping within the building were also replaced.

After removal from an extended period of service, #1 boiler in the Power House in 200-West Area is being overhauled in preparation for stand-by condition. No major replacements are found to be necessary but minor repairs include refractory repair, repacking all valves, boiler inspection and general inspection of all auxiliary devices.

In order to provide cathodic protection to the underground lines in the "U" waste storage area a series of anodes have been installed. These anodes are made of railroad rails and placed underground in cooperation with the Electrical Department.

At the request of the Atomic Energy Commission three tract houses in the Vernita Area are being readied for occupancy by the orchard cultivation sub-contractor. This work includes restoration of water systems, installing water heater, electric range, refrigerator and furnace repair, general repair and replacement of structure and sanitary facilities. One house was completed January 26th.

In 200-East Area the scheduled quarterly inspection of the 75 ton crane was completed. It was necessary to replace the friction discs in the mechanical

load break to the 13 ton hoist to insure safe operation.

It was necessary to replace the 17-2 centrifuge in the canyon. This was necessary when the skimmers became inoperative. The skimmers will be repaired but due to short time limit progress will be slow.

Due to excessive corrosion the E-1 and E-4 tank vent lines were replaced in the Concentration Building. Original vent line was made of 18-8 stainless steel and was replaced with 25-12 stainless pipe.

In the regular inspection of the North Area cranes it was found necessary to replace the friction disc in the "R" Building unit.

In order to provide facilities for burial of contaminated items from the canyon a fenced enclosure was built along a railroad spur.

300 AREA:

The extrusion press in Building 314 was changed over so that extrusion can be made in the alpha- phase of the metal when required.

Final dry run tests have been satisfactory on the south melt plant furnace in Building 314 and it is planned that a first run of metal will be made on Monday, February 2nd. The north melt plant will be completely assembled and ready for initial testing on February 4th.

An additional dark room was installed in the 3701 Building. This work was completed along with the necessary building alterations required to make this installation.

The Maintenance shop located in the basement of the 321 Building was moved into the pipe gallery of the canyon in order to provide more office space for the Technical Department.

700 AREA:

The Weather - Stat control on the heating system in 760 Building was revised and is operating satisfactorily.

Work has been started for the installation of a freight elevator in the 703 Building and the contractor should be able to start installation of the ele-vator by February 16th.

Four hundred and seventy-five pairs of graphite bars were machined to proper dimensions for the Technical Department.

1100 AREA:

A total of seventeen "S" type kitchens were remodeled during the month of January. There are thirty-four yet to be altered.

1208054

The interior painting program is still ahead of schedule with one hundred and thirty-nine units completed this month. In addition, fourteen prefabs, seven permanent units, and forty-six bathrooms were completed.

A mechanical rotary seal was installed on the solvent pump at the Commercial Laundry to eliminate fire hazard caused by leakage of solvents at the packing gland. The seal is proving to be very satisfactory.

Revisions were made to the Kadlec Hospital incinerator so that it could be fired by oil. This gives a more positive type of flame which eliminates a safety and health hazard.

Miscellaneous repairs to exteriors of permanent house units in Division VII, preparatory to spring painting, are eighty-five percent complete. Repairs are now being started on houses in Division IV.

The plastic weather stripping around the windows of one hundred and forty-two prefabs was replaced with metal stripping during the month of January. The metal replacement is seventy percent complete.

Two rooms in Building 92-K were remodeled according to state specifications to accommodate the State Liquor Store.

The installation of new heating ducts in the Richland theater is complete. The new cooling system will be installed as soon as the weather moderates.

[redacted]

Maintenance Department

ORGANIZATION AND PERSONNEL:

Number of employees on payroll:	January
Beginning of month	1073
End of month	1074
Net increase	1

The very slight increase in personnel was caused by the necessity for increasing the night shifts in the blueprint room to meet the demands for reproduction work by the Design Engineering Department. It is necessary to increase the manpower on the night shifts in order to reduce the number of day shift personnel working a six-day week.

[redacted]

Maintenance Department

DECLASSIFIED

Engineering Section

PROJECT GROUP

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.
Susp. C.	Can Opening Facilities	75	- - - -	- - - -
Susp. C.	Dismantling Unoperated Material in 105 Valve Pits	0	12-23-47	2,530.
	TOTAL Estimated Cost 100 Areas Projects			$488,530.

200 AREAS

C-100	Portable Fan Shielding and Replacement Equipment 291 T-U-B. Part II Authorized for Additional $5,400. (Work Completed Insofar as This Project is Concerned)	100	10-22-46	15,000.
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.	98	11-25-46	267,790.
C-120	Divert Second Cycle Waste from X-120. (Now Awaiting Results of H.I. Studies on Soil Sampling)	90	1-13-47	134,200.
C-126	Install Control Lint Catcher for 2723-W Laundry	70	1-9-47	2,525.
C-133	Special Test Wells 200 E & W.	86	1-30-47	133,000.
C-160	H. I. Shaft at 241 B	94	7-14-47	19,000.
C-163	Additional Waste Storage and Tie Lines - 200 W (G.E. Portion Only - Subcontract Not Included)	13	7-25-47	503,000.

1208067

Project Number	200 AREAS (Cont'd)	% Phys. Complete	Date Au'h.	Est. Cost
C-166	Additional Nitric Acid Storage Facilities	8	7-2-47	$ 57,000.
C-171	Alterations to Six Periscope Assemblies	35	8-6-47	7,200.
C-193	Alterations to Existing Lighting System 272-E-W	30	9-20-47	6,000.
Susp. C.	Physical Testing Equipment	87	- - - -	- - - -
Susp. C.	Stack Filtration Facilities - 200 E & W	25	- - - -	- - - -
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.
	TOTAL Estimated Cost 200 AREAS Projects			$1,176,685.
	300 AREAS			
C-122	Additional E. I Instruments	92	1-15-47	105,200.
C-141	Addition to 3717 Instrument Shop	98	3-24-47	90,000.
C-142	Metal Casting Facilities (Parts I & II)	91	4-7-47	188,000.
C-188	Technical Library and Office Building 3702	98	9-24-47	66,000.
C-189	Building 3745-A X-Ray Facilities	17	8-20-47	22,000.
C-207	Fire Alarm System for Buildings 3706 & 3717	0	11-19-47	5,450.
C-208	Change House Enlargements Building 3707-A	88	11-20-47	3,600.
C-215	Move Propane Tank - 300 Area	0	1-23-48	2,650.
C-219	Development of Additional E. I. Instruments	0	1-27-48	97,200.
C-220	Project for Optical Building 3708 - 300 Area	0	1-30-48	81,900.
	TOTAL Estimated Cost 300 AREAS Projects			$662,000.

700-1100 AREAS

Project Number		% Phys. Complete	Date Auth	Est. Cost
C-111	Sewage Lift Station - Revise Pumps	100	11-4-46	$ 2,200.
C-115	Dorms - Install Fire Alarms	100	12-19-46	11,100.
C-127	300 Area - Increased Capacity of Telephone Exchange (Elect. Dept. will Procure & Install Equipment)	0	5-12-47	30,000.
C-134	Richland Village Dust Control & Landscape Program 1947 to June 1948	48	12-19-46	250,000
C-138	Bldg. 702-Automatic Dial Exchange (Elect. Dept. will procure and install Equip)	1	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-146	Irrigation Extensions - Village	86	3-28-47	90,000.
C-147	Engineering Bldg. No. 760 (Field Work)	97	5-13-47	253,000.
C-148	Combined Maintenance Shop - 700 Area	50	6-25-47	170,700.
C-149	Expansion of Printing Shop - Bldg. 717	45	7-23-47	16,600.
C-157	Revisions to Kitchens - All "E" Type Houses	59	6-12-47	15,960.
C-158	Air Conditioning All Dormitories Except W-4 and W-13	5	7-28-47	136,800.
C-159	Re-Coating Prefab Roofs	100	6-17-47	69,200.
C-164	Construction and Expansion of Parking Compounds - Village	0	6-27-47	50,900.
C-167	Commercial Laundry Additions to Equipment Room	76	7-1-47	8,000.
C-175	Building 703 - Freight Elevator	1	7-29-47	9,400.
C-177	115 KV Power Line Through Richland	0	8-14-47	913,000.
C-182	Install Sidewalks, Curb and Cutter, West Side Geo. Washington Way, Gillespie to Abbot Sts.	0	8-19-47	26,800.
C-184	Experimental Animal Farm	0	10-27-47	286,000.
C-186	Overhead Doors - 1131 Garage	0	8-26-47	5,500.

1200069

[redacted]

DECLASSIFIED

Project Number	700-1100 AREAS (Cont'd)	% Phys. Complete	Date Auth	Est. Cost
C-194	Air Conditioning Richland Theater	50	10-1-47	7,000.
C-195	Radio Communications for R.R. Dispatching	30	10-15-47	34,000.
C-196	Electrical Distribution Headquarters Building and Conversion of 2713 E. To Garage	0	10-10-47	162,400.
C-200	Toilet Facilities and Air Conditioning for B-Y Telephone Exchange	60	10-16-47	9,700.
C-202	Gate House and Parking Area - 700 Area at Stevens Drive and on Swift Blvd.	37	11-7-47	31,500.
C-209	Two Story Addition to Building; 703	22	12-3-47	140,000.
	TOTAL Estimated Cost 700-1100 AREAS Projects			$3,244,600.
	TOTAL Estimated Cost for Active Approved Projects ALL AREAS			$5,571,075.

E. R. No.		Estimated Cost
A-412	(C-210) Automatic Traffic Signals - Richland (Being Rewritten)	$ 5,200
A-416	(C-213) Village Streets - (Returned for Additions and ReEstimate)	23,600.
A-420	(C-214) Rehabilitation of Plant Railroad - Revised and Re-Submitted	3,214,000.
A-432	C-217) Addition to Building 760 (Being Revised)	113,300.
963	(C-192) Biology Laboratory (Still Before Committee in Washington, D .C.)	590,000.
A-2049	( ) Project for Office Building 3703 - 300 Area	93,000.
A-1051	Removal of 105 Valve Pit Equipment	55,000.

1208070

[redacted]

PROJECT GROUP - AREA REPORTS

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	95
A-1039	Design & Fabricate Gun Barrel Extension Sleeve	100
A-1040	Handling Device - Discharge Lube Trough	100
A-1044	Outlet Charging Device	40
A-1046	Spectrometer	60
A-1048	Revise Gas Circulating System Building 105	20
A-1049	Revise Charging Machine to Hydraulic System	100
A-1050	Revise Oil System for Steam Turbine Fan - Building 105 (Canceled)	90
A-1051	Prepare Project to Remove Equipment in Valve Pits - Buildings 105 B, D and F. (To be Removed as Required)	30
A-1052	Study 2nd Effluent Sewer Line 105 F to 107 F and Recommend New Installation	15

200 AREAS

E. R. No.		% Engineering Complete
2279	Prepare Project for Regasketing Facilities 221-T and B	70
2285	"B" Jet Assembly	70
2287	Study Rail Alignment of 200-W Cranes	70
2299	Stack Alignment Survey 291-T-L (Long Term)	90
2305	Study & Recommend Facilities and Procedure for Working Diversion Boxes	90
2326	Mark Grade on Steam Line Supports 200-W	0

E. R. No.	200 AREAS (Cont'd)	% Engineering Complete
2327	Study Possibility and Redesigning Connector Head to Simplify Gasket Changing	70
2329	Study Air Cooling Conditions and Make Recommendations 221-T-B Operating Gallery	100
2333	Study and Recommend Outer Roller Bearing for 30 Ton Crane	75
2339	Design Bracing for Stand Pipes - High Water Tanks	95
2340	Design Exhaust Fan & Duct 222-U	100
2343	Design Equipment Decontamination Station for Small Items 221B	90
2344	Design Equipment Decontamination Station for Small Items 221 T	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 222-U	80
A-2361	Specify Catwalks Replacement for High Water Tanks (H-1-539 to be Used)	80
A-2362	Design Air Jets to Replace Water Jets in Process Hoods 231	100
A-2363	Revise Trombone Type Sampler 221-B	0
A-2364	Temporary Sump Crib Near Septic Tank 221-T-B	100
A-2366	Diversion of Uncontaminated Waste Water to Effluent Sewers	100
A-2368	Study and Recommend a Means of Preventing Steam Cell Piping From Creeping Through a Concrete Wall	30
A-2369	Prepare Project to Install Manifold Outle Piping Tank Baffles to Permit Future Use of Remaining 3-200 Series Tanks for 224-T and B Waste	2
A-2371	Design Decontamination Sink and Piping 221-T and B	85

E. R. No.	200 AREAS (Cont'd)	% Engineering Complete
A-2372	292-B Annex to Scrubber Facilities	10
A-2373	Design Safety Shower for G Cell 224-T	0
A-2374	Estimate Cost of Providing Parallel Operation of "D" and "E" and of "G" and "F" Cells, 224-T	0
A-2375	Adapt "Q" Smith Sampler Principles to 221 Building Sampler Compartments	0
A-2376	Cathodic Protection to Underground Waste Lines (Survey Work and As-Built Drawings)	65
A-2377	Design Air Filters in Exhaust System 291-T-B	35
A-2378	Design Precipitator Tanks with Longer Life Jackets 221-T-B	5
A-2379	Design Single Dip Tubes for F-1 and Piping to F-2, N-1, WR-1, Building 231 Cell No. 1	90
A-2380	Study Sanitary Spetic Tank and Tile Field Overload Conditions at 200 E and W Process Areas	0
A 2381	Design Acid Supply Tanks and Piping for 222-B	0
A-2383	Crib and Tile Field for Disposal of 5-6 Waste Near 361-B Tank	80
A-2384	Study and Recommend Design Changes to Anchor Bolts in Centrifuge Block	100
2385	Steel Stock Handling Equipment	80
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	20
2391	Skimmer Revisions - 26" Centrifuge	100
2392	Laundry Equipment Rearrangement	0
2393	Steam Jet with Remotely Removable Features	0

E. R. No.	200 AREAS (Cont'd)	% Engineering Complete
2394	Check 291-C Stack Condition	100
2395	Bismuth Subnitrate Preparation Facilities	0
	300 AREAS	
A-3003	Stump Shear	47
A-3019	Housing for X-Ray Machine	95
A-3027	Water Softeners - 3706 Building	100
A-3032	Metal Punch Press Design	45
A-3036	Prepare Project for Construction Optical Instrument Bldg. 300 Area	30
A-3037	Design Marking Device for Building 313	90
A-3040	Prepare Drawings and Estimate Cost of Electrical Hoist on Metal Truck	100
A-3041	Prepare New Tracing for Telephone Lines	100
A-3042	Design Air Filters for Building 3706	30
A-3044	Prepare Project to Convert Building 3706 Offices to Labs.	30
A-3046	Study Procurement of New Chip Recovery Press	25
A-3047	Design Tube Mock-Up	15
A-3048	Study & Recommend Additional Ventilation for Oxide Burner Room. Bldg. 314	5
A-3049	Prepare Project for Building 3703	10
A-3050	Make a Design Study of Rolling Mill for 300 Area	0

STUDY GROUP

700 & MISC. PLANT AREAS

E. R. No.		% Engineering Complete
628	Building 702 - Automatic Dial Exchange	90

E. R. No.	700 & MISC. PLANT AREAS (Cont'd)	% Engineering Complete
861	Stores Warehouse Hanger	8
923	Improvement of Air Conditioning System Building 703	30
925	Combined Maintenance Shops - Building 722	87
941	Experimental Animal Farm	40
962	115 KV Power Line Through Richland	37
963	Biology Laboratory	5
973	Elect. Dist. Hdqts. Building Substation 251 and Conversion of Building 2713 E to Garage	28
981	Special Danger Zone Fences	0
985	Dust Collecting System Building 3713	100
989	Two Story Addition to 703 Building	100
995	Marking Device - 313 Building	100
997	Deodorizer for Building 706	5
A-401	Telephone Cable Layout - Building 720	20
A-408	Lighting Design for Hutment Addition to Building 2707-E	100
A-409	Telephone Cable Layouts for Buildings 703, 705, 760 and 770	0
A-414	Fire Alarm and Detector System for Building 705	0
A-420	Rehabilitation of Plant Railroad	20
A-428	Design and Estimate for Office Machine Repair Shop - Hutment 722-H	20
A-429	Electrical Work - Building 3708	5
A-430	Design and Estimate for Stairway to Attic - 717-A Building	100
A-432	Addition to Building 760	25
A-434	Study of Lighting - Building 3713	75

E. R. No.	700 & MISC. PLANT AREAS (Cont'd)	%Engineering Complete
A-435	Study and Estimate for (1) Fire Detector System and (2) Automatic Sprinkler System for 7 Warehouses - Pasco Depot	80
A-433	Design for Badge Assembly Marker for Construction Security	0
A-413	Check floor Loads in Buildings 703 - Rooms 324 and 2326 for Equipment	100
	1100 AREAS	
765	Cafeteria - Air Conditioning	55
822	Pop Up Sprinkler System - Village Public Grounds	35
841	Richland Dust Control and Landscape Program	70
896	Construction and Expansion of Parking Compounds - Village	52
920	Air Conditioning All Dorms Except W-4 and W-13	75
956	Design for 5 Ton Overhead Crane - 1131 Garage	0
A-407	Survey and Map at Borrow Pit Area South of C.P.A. Airport	100
A-412	Automatic Traffic Signals - Richland	20
A-416	Patching & Seal Coating of Village Streets	90
A-418	Study of Lighting - Commercial Laundry	70
A-421	Additional Equipment - Commercial Laundry	100
A-422	Air Conditioning - Transient Quarters	6
A-425	Electric Heating - Redeemer Lutheran Church	100
A-426	Electric Heating - Wiring - M. S. Warehouse	25
A-427	Study of Lighting - Lewis and Clark School	100
A-433	Design for Clothes Line Pole	100
A-436	Revise Village Map to Show All New Houses	20
A-437	Design Steel Columns in Basement - Richland Lutheran	

E. R. No.	LLCO AEMS (Cont'd)	% Engineering Complete
A-439	Design for Vestibule and Taxi Stand - Commercial Bus Depot	0
A-441	Design and Estimate for Heater Platforms - Lewis & Clark School	0
A-442	Design and Estimate for Walk In Refrigerator - Recreation Hall Kitchen	0

ENGINEERING STUDIES GROUP REPORT

Studies Completed This Month

E. R. No.		Date
4323	Floor Repairs - Building 703	1-7-48
4328	Lumber Yard Layout	1-14-48

Studies Added This Month

4328	Lumber Yard Layout	12-9-47
4330	J. I. Penn. and Worthington Compressors	1-8-48
4331	J. I. Boiler Pumps and Turbines	1-8-48
4332	J. I. Ruggles Klingeman Control Valves	1-19-48

Active Studies		% Complete
2311	Examination of "C" Crane	98
2323	Spare Parts - Whiting & Northern Crane	95
4295	Pressure Relief Valve Standardization	98
4296	Oil Reclamation Survey	85
4305	Work Space Under Floors	95
4306	Concrete Standard Practices	98
4308	PreCut Gaskets	10
4310	J. I. Use of Abrasive Equipment	90
4316	Revise Paint Standards	90

M. R. No.	Active Studies (Cont'd)	% Complete
4318	Revise Packing & Gasket Standards	5
4320	Waterproofing of Basements	80
4321	Mutment Weatherproofing	60
4322	Non Slip Floor Finishes	80
4324	Lubrication Survey - 300 Area	55
4325	Lubrication Survey - 3000 Area	0
4326	Inhibited Oil In Turbines	50
4327	Maintenance of Pitched Roofs	70
4330	J. I. Penn. and Worthington Compressor	0
4331	J. I. Boiler Pumps and Turbines	0
4332	J. I. Ruggles Klingeman Control Valve	0

BLUEPRINT CONTROL GROUP REPORT

	This Month	Last Month
"SK" and "H" Drawing Numbers Issued	511	552
Black and White	15,216	12,708
Blueprint	20,464	17,131
Ozalid	20,042	16,020
Photostat	40,819	48,313
Reproducibles		
Ozalid	1,302	3,646
Portagraph	49	210
Prints Temporarily Out Carded and Returned for Filing	2,398	2,594
Prints Carded Out on a Permanent Basis	38,918	27,883
Permanently Charged Prints Returned for Disposal	8,155	8,671

ELECTRICAL DEPARTMENT

JANUARY, 1948

GENERAL

Work Order Summary:

Area	Work on Hand Dec. 25 No. of Orders	Work on Hand Dec. 25 Estimated Man Days	Work Completed to Jan. 25 No. of Orders	Work Completed to Jan. 25 Estimated Man Days	Work on Hand Jan. 25 No. of Orders	Work on Hand Jan. 25 Estimated Man Days
100-B	20	51.5	45	134.4	14	31.3
100-D	16	57.9	34	227.5	14	20.8
100-F	50	62.0	101	385.5	34	13.4
200-E	61	242.1	78	323.0	60	231.8
200-W	54	160.5	78	294.6	64	197.3
300	25	298.8	73	269.5	43	330.5
700-1100	113	381.7	157	613.8	99	334.5
Distribution	204	5322.3	189	3450.4	207	1254.7
Telephone	19	2264.1	22	166.7	19	2451.5
Minor Const.	39	822.8	25	204.2	32	1696.7
Total	606	9579.7	802	6191.6	589	17751.7

The backlog of work orders continues to increase moderately except in the Distributio Division where the increase has been pronounced. Of a total backlog increase of 8072.0 MH, 7018.4 concerns the Distribution Division. A study of this increase indicates that it is partially due to maintenance backlog accumulated during December concentration of work in DR Area, additional requirements for housing construction in Richland, and the inclusion of part of the new 115 KV construction. The increase of minor construction backlog is mainly due to 300 Area construction.

The attached load chart for the peak day of the month, January 28, shows a total of 49.7 MWH for the entire project including coincidental 21.7 MWH demand for the 66 KV system. The total peak is very slightly less than last month but the 66 KV demand is the highest experienced to date, undoubtedly resulting from increasing activity especially in North Richland.

On Project C-177, 115 KV system, further studies are being made in response to request of Consulting Engineers responsible for the Master Plan to reconsider routing of the 115 KV lines through the Village. It is hoped that this subject will be finalized early in February, and meanwhile, efforts are being directed towards expediting materials now on order.

Work continues by special labor crews with Line Maintenance supervision Osmose treating of pole butts. The following work was accomplished during the month

149 Poles, 230 KV Line A-1 (Midway to 100-B Area)
118 Poles, 100 B Area (100-B Area essentially complete)

Efforts to relieve the normal line crews of some of the heavy backlog now scheduled have not yet materialized. Plans for bringing in Bonneville Power Administration

crews to assist have been abandoned because of several obstacles, but another possible Subcontractor has been contacted, and it is hoped that definite action will develop before March 1. Meanwhile, requisitioning of six additional Linemen has been authorized, but this alone cannot appreciably relieve the present situation.

The Electrical Standards Committee continues to meet weekly. A number of distribution standards have been approved after thorough discussion. Transformer vaults and RO stations are under study. The subject of 440 volt system grounding has been deferred, while the complete Hanford Works "Electrical Design and Installation Standards" are being reviewed. This work is 50 percent complete. A preliminary monthly summary of accepted standards will be mailed to interested persons until such time as sufficient approved prints and specifications have accumulated to warrant issue of the first part of a Standards Handbook.

For the 700 Area, a study has been completed for the tie-in of a loop feeder system with isolating switches. Such system will enable maintenance and construction work to proceed with outages only for small groups of buildings rather than the entire area as at present. The first step towards realization of this plan would occur when it will be necessary to move the present transfer station for possible extension to 760 Building.

It has been decided that two of the five line crews will make their headquarters in Richland, and three in the work areas, in line with the present (and possibly future) distribution of work order backlog for these crews. In order to expedite this work, and in order to create a more efficient organization, one Shift Engineer will be responsible for the two Richland crews, and another for the three Area crews after February 1. Richland crews will also cover North Richland and the 300 Area. There will be interchangeability among the crews as may be necessary, and it is hoped that this general division into two general areas, located relatively far from each other, will accomplish the desired results.

Two Linemen and one Groundman were sent to Farragut, Idaho to remove transformers from service, these having been purchased from W.A.A.

Because of the present distribution transformer shortage, a central control has been created through the Construction Department. During the month, the following transformers were tested and serviced, and delivered to the Construction Department for this pool.

45 from Electrical Department spares (Minimum spares were retained.)
39 from Stores
50 from Operations Stores

ORGANIZATION AND PERSONNEL

Because of general plant restrictions, hiring was limited during the month. One Helper was transferred in from another department, one Electrician was hired and one Helper terminated voluntarily. (See Page 13 for tabulation.)

AREA ACTIVITIES

1. 100 Areas

A. General 1206080

2 On January 30 at 8:50 A.M., a severe surge occurred on the power lines,

caused by failure of an air break switch on the BPA system. No loss of equipment or production was reported in the 100 Areas.

B. 100-B Area

Riverland

A foot operated switch was connected on the Dispatcher's phone so the transmitter can be disconnected while the Dispatcher is listening.

An electric heater was installed in Diesel Locomotive 39-3721.

Vernita

Tract House JJ-641 was rewired and an electric range and water heater were installed. This work was completed January 22.

Tract House JJ-649 is being rewired for occupancy and is approximately 85 percent complete.

Services to three tract houses in this area were connected, as well as for one tract house at Midway.

On January 1, 1948, the 20 inch water main from the 183 Clearwell ruptured and flooded the ground in the vicinity of 02-03 substation. The ground sank around several poles in the substation, but no further damage occurred to the electrical equipment.

No. 2 brush motor in the Coal Handling Building 184 failed in service and had to be rewound. The overload coil in its starter switch also had to be replaced.

Electrical service and a welding receptacle were installed in Building 111 for the Technical Department.

Due to unsafe condition of the Coyote Pumping Station, poles and lines to this station were dismantled as well as the 2300 volt transformer bank.

Four spans of secondary were constructed and service was connected to the 111 and 115 Buildings in the 100-B Area.

C. 100-D Area

Excessive thrust was detected on the outboard bearing of No. 1 process pump 700 HP motor in Filter Plant Building 183. The inner edge of the bearing was trued up and the motor was realigned. Evidently the motor foundation had settled somewhat at the outboard end and the motor had to be shimmed up to align it properly.

Soil heating cable was installed on the piping to three chlorinators in the 183 Head House chlorinator room.

Pile Building 105-D

(a) Work was continued on the wiring for movement indicators on the back face of the pile. Work is approximately 95 percent complete.
(b) Wiring was started for the strain gage installation on the rear face of the pile and is 95 percent complete.
(c) Vertical safety rod No. 36 was found to have a sticking brush. It was cleaned and returned to service.
(d) The Milton Roy Acid pump motors in the valve pit were disconnected for transfer to the 300 Area.
(e) A broken wire was found in the solenoid brake circuit of the SR2-0 relay in the shim rod control circuit. This had been allowing the rods to creep. The wire was repaired and correct operation was restored.

Fluorescent lighting fixtures were installed in Rooms 22, 30 and 32 in Building 1704.

Service was reconnected and interior wiring was restored in Building 1709 after it was removed from the 230 KV right-of-way.

D. 100-F Area

Pile Building 105-F

(a) A telephone extension on 6613 was installed on top of the unit.
(b) A sticking push button in the No. 2 safety circuit was repaired.
(c) Recording ammeter tests were made on the vertical safety rod motors.

A call bell system was installed between the vault and Technical office in Building 1704.

A new switch mechanism was designed and built for the charging machines in the 105 Pile Building to accommodate a change in operating requirements. The new design is working very well and four assemblies will be made up.

Incandescent lights in the Pistol Range hut were replaced with fluorescent lamps. Lighting was increased from five foot candles to fifteen foot candles with a reduced transformer load. Part of the increase was due to increased supply voltage.

E. 100-DR Area

The 13.8 KV line and two substations for DR construction power have been completed and energized.

Additional transformer bank for service to Gate House was installed.

Primary circuit, fence light circuit and phone cable was raised to provide adequate clearance for construction equipment entering the area.

Overhead clearance guys at road crossing under the 230 KV line were installed.

Since our work in this area has now been completed (with exception of installation of counterpoise on new section of 230 KV line), an operational agreement for the 13.8 KV supplied was made with the Subcontractor through the Construction Department.

F. White Bluffs

Erection of the 3000 KVA 66/6.9 KV substation removed from the 100-B Area has been completed with exception of installation of lightning arresters. The bank will be energized during the first days of February for general service to Central Shops area.

Services were connected to the Fire Station, Gas Station and 105 Warehouse in White Bluffs.

White Bluffs Ice Plant

(a) The inboard bearing on the 75 HP compressor motor was replaced. Indications were that someone had used grease instead of oil for lubrication.
(b) The old lighting panel was removed and replaced with a modern panel of better design.

G. Hanford

Line crews continued dismantling various overhead lines, transformer settings, and disconnect switches to be used for general construction.

Sectionalizing switches were installed in the three lines to 101 Building, and agreement was made with Subcontractor through the Construction Department relative to operation of the switches controlling power to this area. Future inside maintenance in 101 Building will be done by the Subcontractor.

Prior to this two lighting distribution panels were rebuilt for the 101 Building in Hanford. They were changed from 400 amp to 700 amp capacity and switch sections were added.

H. Status of Major Work Orders

Project	Location	Item	Comments
Design Ch. 56	1709-B (Fire Dept. Bldg.)	Electric Heating	95% complete - In service but awaiting final materials
WO D-33846 37381	Riverland locomotives	Oil and water heaters	90% complete - balance held for materials
Design Ch. 58	105-D	High radiation level alarm	95% complete

2. 200 Areas

A. General

The temporary construction transformer station located at the Tank Farm in 200 East Area was moved and installed at the new Tank Farm in the 200-W Area. A 2300 volt line was constructed and energized to serve construction power at the 200 West Tank Farm.

In continuation of the efforts to provide cathodic protection to stainless steel pipe, the following notations indicate developments.

(a) Temporary protection has been completed for the stainless steel pipe in the "B" Area.
(b) Additional anodes and cathode connections were applied in the "U" Area and temporary protection will be completed as soon as additional rectifiers are received.
(c) The protected and unprotected pipes buried in the 200-E Area on November 20, 1947 for experimental purposes were dug up for examination on January 7, 1948. Results were very satisfactory as the protected pipe showed no pitting while the unprotected pipe was pitted badly. Tests will be continued with different applied voltages and with various protective coatings. A separate report has been made.

B. 200-W Area

Conduit and thermocouple wires were installed from the 291-T Process Stack Fan House to the temperature measuring points at the stack fans and motors. This was done in connection with the fan changing project and was performed under considerable difficulties because of the special hazards involved.

Thirty-four fluorescent lighting fixtures were installed in the Project Engineering offices in 2704 Building to provide adequate lighting facilities for drafting and similar work.

The temporary Bar Bending Building, set up by the Maintenance Department for use in connection with the 241-TX project, was wired for lights and 440 V. power, and connections made to outside lines.

Considerable work was made necessary in the 221-T Building area to allow for excavation for a waste tank between 221-T and 222-T. An eleven pair area telephone cable and the 2300 volt emergency power feeder were re-routed temporarily.

Two additional magneto phones were installed in the 231 Area, one in the Senior Supervisor's office and one in the 231 Badge House.

On January 9, a cell blower motor in the 224-T Concentration Building was saturated with steam due to a leak in the steam line. The motor was removed, dried out and replaced after the steam leak had been repaired.

On January 22, a control wire for No. 2 pen air compressor in the 271-T Canyon Building grounded out in a conduit and burned an interlock

contact. Repairs were made and the equipment was returned to service.

On January 29, the jack in a Rowan controller in the 212-U Canyon Tank Farm grounded out due to water which had somehow accumulated around the blades. Further investigation showed other switches with water in them. Steps will be taken to correct this condition. It might be advisable to replace the Rowan switches with standard weatherproof switches.

C. 200-E Area

At the request of the Fire Department, the dial was removed from phone 8801 so this phone cannot be used for outgoing calls and is therefore always available for incoming calls.

Conduit and thermocouple wires were installed from the 291-B Process Stack Fan House to the fan and motor bearings for temperature measurements. This was made necessary by the changes on the stack fans.

A preheat furnace was installed in the 291-B Process Stack Fan House for the Technical Department.

Fourteen motors ranging in size from 1/20 to 10 HP were rewound in the Motor Shop. Most of them were from 700-1100 Areas and Columbia Camp. Three fractional horsepower motors were from the 200-W Area.

D. Status of Major Work Orders

Project	Location	Item	Comments
C-126	200-W	Installation of filters in laundry dryers	30% complete - Work held up pending changes
C-133	Record Bldg. Annex	Electrical fixtures (electric heat to be added)	40% complete
C-160	241-B	H.I. Shaft Second cycle waste crib	Not yet ready for electrical work - Scheduled for Feb.
	224-B	Plug in connector centrifuge	100% complete
C-193	200 E & W	Alterations to lighting	65% complete - 272-E 8% complete - 272-W

3. 300 Area

A. On January 10, a bearing became overheated on the Tesco Junior Frost Test 9600 cycle generator. Bearings were fairly loose and friction developed between the shaft and the oil seal. Trouble developed about 5:30 PM and repairs were completed without loss of production.

B. On January 10, slight trouble developed on the marking fluoroscope due to flashing. The transformer oil was replaced with special "Marco" X-ray oil which had been on order, and the trouble was corrected.

C. At the request of the Dispatcher, telephone service was installed to spur track switch north of the 300 Area.

D. Extended primaries and the 440 volt service at the minor construction area in the northwest corner of the 300 Area. Also, constructed transformer bank to service 115/230 volt service in this are.

E. Status of Major Work Orders

Project	Bldg.	Item	Comments
C-142	314	Metal Furnace	70% complete
C-187	321	Scale-up Tank Farm	Not yet ready for electrical work
C-188	3702	Technical Library and office	90% complete - Balance held up for delivery of fire alarm equipment
C-189	3745-A	X-ray Building	5% complete
C-207	3706 3717	Fire Alarm	0% complete - Awaiting materials
C-208	3707-A	Addition - Change House	85% complete

Project C-142 (314 Building induction furnace) noted as 70% complete. The south furnace has been tested and bake-out was completed before the end of the month. First melt was made immediately and furnace is in successful operation. The induction furnace coils would be better with one more turn in order to increase voltage, and decrease amperage about 8% on the generator. A set of test coils with one additional turn will be ordered for test purposes; although the generator runs cool at slight overload, it is believed that a better margin will be afforded in warm weather with less amperage for the same power.

The north furnace lacks a small amount of electrical work but will be ready for trial run and bake-out by February 5.

4. North Richland

Radio transmitter was removed from the 770 Building in Richland and reinstated in the 3000 Area Patrol Headquarters.

Four spans of telephone trunk cable were raised in the lumber yard to provide clearance for crane movement.

5. Cable Mountain Communications Building

Electrical work is 99 percent complete, awaiting receipt of two thermostats only. The new installation is now in service.

6. 700-1100 Areas

A. A summary has been made of service calls made by Patrol Order Electricians in Richland Village during 1947. A brief summary is:

Total patrol orders received	23,313
Total repairs made	26,126
Average labor cost per patrol order	$1.01

B. A 440 volt line was extended to the combined shops in the 700 Area, and transformer bank was constructed for a 115/230 KV service to the combined shops.

C. Permanent service was run to one hundred thirty precut houses during the month.

D. Service to the 703 Building addition was installed.

E. Transformer bank and lines for service to the old Signal Corps Warehouse was constructed.

F. Fire alarm circuit in mens dormitory area and to the 770 Building was completed.

G. Size of transformer supplying Municipal Building was increased.

H. Two spans of telephone cable were removed at the end of Lee Blvd. to provide clearance for excavation for the River Pump site.

I. Radio antenna was removed from the rear of the 720 Building, and the equipment was transferred to North Richland.

J. At the request of Housing, additional lighting was installed at the intersection of George Washington Way and Van Giesen and the intersection of Hunt and Van Giesen.

K. Transformer bank and secondary to No. 6 Warehouse in Richland was constructed.

L. At the request of Stores, overhead lines and poles at Warehouses No's. 2, 3, 4, and 5 were relocated.

M. Secondary and service wires were raised at Heavy Equipment Yard to provide for road clearance.

N. Poles were raised and cable was removed in low area of Pole Yard, located at the intersection of Lee and Stevens. This work was necessary in order to allow Tertling Company to grade area.

O. A three-phase transformer bank was constructed at the corner of Welsian

Way and Lee Blvd. for Tertling Construction Company. Also, a three-phase bank was constructed at the east end of Lee Blvd. for the Tertling Company.

P. Installation of recording load meters on each of four 6.9 KV feeders in Substation B1-S2 was completed.

Q. Transformer voltage taps and phase connections were changed in order to correct both high and low voltage conditions at the Columbia Camp. This is only a partial remedy for the conditions as the voltage regulations on the REA line are too great to correct both conditions.

R. Status of Major Work Orders

Project	Item	Comments
C-111-E	Sewage Lift Station equipment change	100% complete
C-115	Fire alarm extension in all dormitories	99% complete (Small amount of work to be done in M-8)
C-147	760 Bldg. (Engineering)	90% complete (Fire alarm equipment has not been received.)
C-148	Electrical work in 722 Bldg.	35% complete (Electrical work progressing with construction of building.)
C-149	Conversion of 717 Bldg. to Print Shop	60% complete
C-153	Flood lighting - soft ball park	0% complete (Materials have been received.)
C-157	Revisions to "E" house kitchens	35% complete
C-158	Air conditioning in all dorms	25% complete
C-175	Installation of freight elevator in 703 Bldg.	0% complete (Installation to be scheduled by Maintenance Dept.)
C-186	Installation of electrically operated garage doors at 113 Garage Bldg.	0% complete (Installation to be scheduled by Maintenance Dept.)
C-194	Revisions to heating and air conditioning of Richland Theater	45% complete
C-202	Electrical work for Gate Houses, 701-A and 701-B	50% complete (West gate house building not constructed - North gate house complete.)

Status of Major Work Orders (Cont'd.)

Project	Item	Comments
C-209 Sus. Code 10,205	Two story addition to 703 Bldg.	0% complete - Not yet ready for electrical work.
WO 24551	Clean and inspect electric heaters and cords in prefab houses	0% complete - Awaiting materials.
WO 25210	Installation of electric heat in Lutheran Church (Old Grange Hall)	60% complete - Will be completed when balance of equipment is received - temporarily installed now.
WO 25584	Alterations to U.P. Church lighting	60% complete
WO 25976	Alterations to dining room lighting fixtures and inspection of service panel in prefab houses	0% complete - Awaiting materials.
WO 25977	Inspection of service panel and grounding of laundry tub receptacle in all conventional type houses	0% complete - Awaiting materials

7. Telephone Group

A. Installation of telephone cable and terminals was completed in the 761 and 762 Buildings. It was later necessary to revise this work from requirements originally submitted owing to the planned drafting rooms being converted to office space.

B. One hundred and eight resident telephone numbers were changed to the newly installed "2200" and "2300" number group in order to provide additional service for office use. Including the new "2200" and "2300" numbering group, there were 172 vacant lines on the Richland exchange as of midnight, January 29, 1948.

C. Work on the installation of the 300 Line North Richland dial exchange was begun on January 14, 1948. One man reported from the North Electric Co. to work on this equipment on January 16, and a second man on January 21. To date, 160 manhours work has been performed by the Hanford Works personnel to assist on this installation. Specifications were submitted to the Design Department on January 27 for the purchase of the necessary equipment to increase this exchange to 600 lines. These specifications also covered certain modifications being made on the present board, which had been originally designed for another customer.

D. Installation was started on the Richland exchange board of equipment for trunk terminations from the North Richland dial exchange. Completion of

this work depends on arrival of additional equipment from the North Electric Company. Delivery has been promised in time to complete this work by the time the North Richland exchange is placed in service.

E. Work on the addition to the Richland Exchange Building was begun on January 6, with completion expected about April 1, 1948. The North Electric Company plans to begin shipment of the new dial equipment in April or May with completion still planned for November, 1948.

F. Approval was received from the Security Department for consolidating several area telephone exchanges (in a building located outside of any working area) on future installations where this would effect an economy.

G. Plans were completed for installation of a manual telephone switchboard at White Bluffs by February 15, 1948.

H. Eight thousand feet of lead covered telephone cable was released to the A. & J. Construction Co. for installation at White Bluffs to provide service into and out of the above White Bluffs board. This was necessary in order to furnish service as the A. & J. Company has no cable.

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

	Installed	Removed
All Work Areas	42	22
Richland	269	181
North Richland	12	4
Hanford	0	0
Total	323	207

3. Power Supply Interruptions

Date	Area	Circuit Affected	Duration	Remarks
		230 KV		
There were no unscheduled interruptions during the month.				
		66 KV		
Jan. 3	Richland	700 Area Fence Light Circuit	53 min.	Burned off load
Jan. 5	Hanford	OCB 175 and Taunton line	27 min.	Fuse blown at Euphrata
Jan. 5	Hanford	1Ø from D5-X5 to end of line	1 hr. 20 min.	Blown fuse
Jan. 6	Richland	1Ø from D1-10X89	1 hr. 45 min.	Cutout, 1-phase D1-10X89 burned out

12 1200090

Power Supply Interruptions (Cont'd.)

Date	Area	Circuit Affected	Duration	Remarks
Jan. 11	Richland	D1-L3	13 min.	D1-X3 line disc., A phase, blew up
Jan. 12	Richland	1Ø, D1-L1 from D1-1X27	24 min.	Fuse blown, 1Ø, disc. D1-1X27
Jan. 22	Richland	Transformer fuse on D1-L3 feeding 200 block, Cullum and Delafield	45 min.	Blown fuse

ORGANIZATION AND PERSONNEL (CONT'D. FROM PAGE 2)

	January	
	Exempt	Non-Exempt
Number of employees on payroll:		
Beginning of month	44	241
End of month	44	242
Net increase	0	1

POWER STATISTICS - ELECTRICAL DEPARTMENT

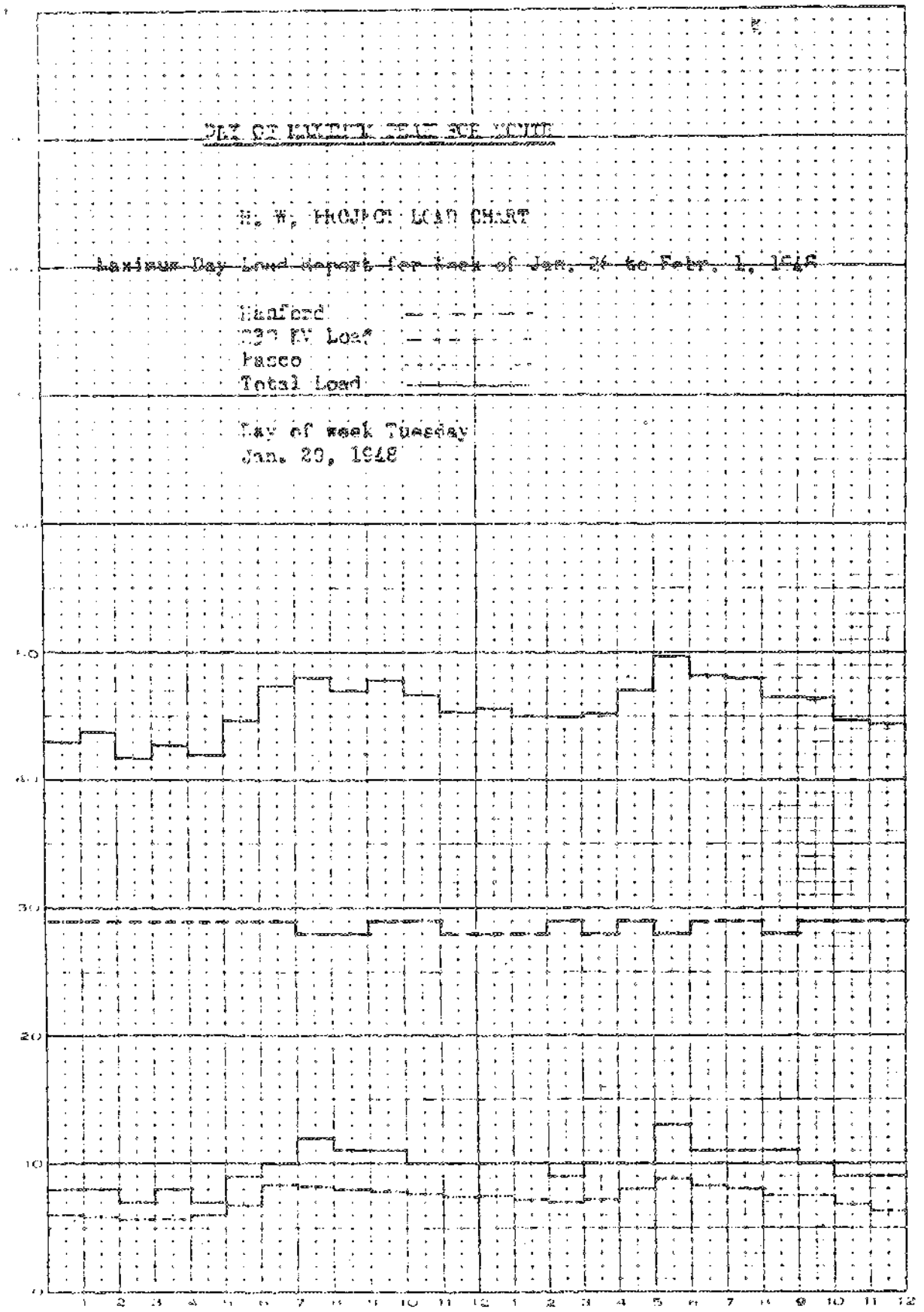
FOR MONTH ENDING JANUARY 31, 1948

ITEM	ENERGY - MWHRS Dec.	ENERGY - MWHRS Jan.	MAX. DEMAND - KW Dec.	MAX. DEMAND - KW Jan.	LOAD FACTOR - % Dec.	LOAD FACTOR - % Jan.
230 KV SYSTEM						
A-2 Out (100 B)	2,990	3,050	4,800	4,500	83.7	91.1
A-4 Out (100 D)	6,670	7,290	12,200	12,000	73.5	81.7
A-6 Out (100 F)	6,470	6,450	11,500	11,300	75.6	76.7
A-8 Out (200 Areas)	2,380	2,390	3,800	4,000	84.2	80.3
TOTAL OUT	18,510	19,180	32,300**	31,800**	-	-
MIDWAY IN	18,810	19,396	30,800*	30,800*	82.1	84.6
Transm. Loss	300	216	-	-	-	-
Per Cent Loss	1.6	1.1	-	-	-	-
66 KV SYSTEM						
B1-S1 Out (Richland)	3,399	3,697	6,200	7,000	73.7	71.0
B1-S3 Out "	2,904	3,078	6,200	6,400	63.0	64.6
B1-S2 Out "	2,842	3,034	5,664	5,780	67.4	70.6
B3-S4 Out (300 Area)	442	453	636	636	93.4	95.7
B3-S5 Out "	252	270	920	1,320	36.8	27.5
B1-S4 Out (North Richland)	384	590	634	1,152	81.4	68.8
Hanford Out	322	349	500	500	86.6	93.8
TOTAL OUT	10,545	11,471	20,754**	22,788**	-	-
Hanford In	4,300	4,773	8,300*	8,800*	69.6	72.9
Pasco In	6,294	6,738	12,800*	13,200*	66.1	68.6
TOTAL IN	10,594	11,511	21,100**	22,000**	67.5	70.3
Transm. Loss	49	40	-	-	-	-
Per Cent Loss	0.5	0.3	-	-	-	-
PROJECT TOTAL						
230 KV (Item 5)	18,510	19,180	32,300**	31,800**	-	-
66 KV (Item 15)	10,545	11,471	20,754**	22,788**	-	-
TOTAL OUT	29,055	30,651	53,054**	54,588**	-	-
230 KV (Item 6)	18,810	19,396	30,800*	30,800*	82.1	84.6
66 KV (Item 18)	10,594	11,511	21,100**	22,000**	67.5	70.3
TOTAL IN	29,404	30,907	49,900*	49,800*	79.2	83.4
Transm. Loss	349	256	-	-	-	-
Per Cent Loss	1.2	0.8	-	-	-	-

*Coincidental Demand
**Non-Coincidental Demand

Average Power Factor - 230 KV System--99.7
Average Power Factor - 66 KV System--97.3

[redacted]



1206093

[redacted]

GENERAL

The Department is making an effort to supply Instrument Mechanics to essential Area Operations and Construction by reallocation of its present man power. This is possible through more extensive contracting of shop work and a reduction in certain special services, i.e., Development and Standards.

By mutual agreement, the Instrument Department will function as a subcontractor to the Design and Construction Department and will be so listed on their organization chart. The Instrument Project Engineers, who report to the Instrument Superintendent, are responsible for all Instrument design, procurement initiation, and construction. Their efforts are coordinated by the various Project Engineers of Design and Construction.

Work Order Summary:

	Work on Hand Jan. 1		Work Completed in Jan.		Work on Hand Jan. 31	
Area	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days	No. of Orders	Estimated Man Days
100-B	26	19.4	63	110.3	17	10.6
100-D	44	47.4	93	314.7	53	72.3
100-F	21	31.3	67	309.8	43	33.8
200-E	40	43.8	211	332.4	47	45.7
200-W	45	45.3	239	405.4	63	72.1
300	120	2655.0	174	1221.1	100	2315.5
700	62	145.0	76	223.5	75	146.4
Totals	358	2987.5	917	2917.2	398	2696.4

100 AREAS (Reference Report No. HW-8722)

Project C-172 - Dismantling of Demineralization and Deaeration Facilities

Completed 185 Building "R" panel revision, and report has been submitted to Project Engineering. A work order has been issued to cover costs of making alterations to a single panel. After this has been completed, an estimate will be made on the job of making a similar change to the remaining twenty-nine panels.

A preliminary estimate has been submitted covering the man days required to make the necessary alterations and additions to the 182, 183, and 190 instrument panels paralleling the 105-DR construction.

Strain gages are being installed at various locations on the rear face under direction of the Technical Department. The Electrical Department has run in sufficient leads from the vicinity of the Brown Motion Indicator on the far zero foot level to the rear face for 25 gages. Leads from the gages will be terminated on a panel used as a cover for the wiring duct located below the indicator. This will allow all rear face strain gages readings to be made from the far zero foot level.

The operating experience with the new Safety Circuit Controllers has been most satisfactory. Since August 20, 1947 there has been no shutdown in the 100 Areas caused by instrument failures.

200 AREAS (Reference Report No. HW-8723)

A portable indicating manometer with self contained air supply was fabricated for use in determining liquid in waste disposal cribs for 241-T and 361-T Areas.

Taylor dial indicating thermometers were installed in twelve storage tanks in 241-BX waste storage area. This installation allows replacement of defective thermometers since the stainless steel capillary tubing eliminates the necessity of a protective well used in previous installations.

The continuous integration unit on Gable Mountain was moved to the recently completed permanent type building.

300 AREA (Reference Report No. HW-8724)

Project C-141 - Addition to 3717 Instrument Shop

Four of the eleven work benches were received and installed. A light survey of the shop was completed, and results show that the present lighting is inadequate.

Project C-122 - Additional Health Instruments

Work on this project has been delayed owing to the lack of relay racks. Every effort is being made to expedite their shipment. The new estimated completion date is March 1, 1948.

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

This project is approximately 32% completed. Outside vendors are being sought to fabricate the shaft details.

Design Division

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

1. A gage to measure remotely the inside dimensions of the test holes in the pile.

2. A device for making underwater molds of blistered slugs.

3. A carbon electrode sharpening and cut-off device has been completed

Optical Section

J. M. Holeman, Engineer in charge of the Optical Section, attended a special training course on the theory, operation, and maintenance of the General Electric Spectrophotometer at Schenectady.

The trip afforded an opportunity to review the progress of 100 Area work with the various optical vendors. It also provided an opportunity to review with leading optical designers the possibility of constructing a binocular periscope for application to the Redox process.

Two Fluorophotometers of a modified design are being constructed. Suggestions have been submitted to improve the measuring techniques which are being investigated by the Development Division.

700 AREA (Reference Report No. HW-8725)

Tube Division

Production Report - 5 Mica Window Tubes
84 Thin Walled Glass Tubes
6 Cutie Pie Chambers

Four metal to glass to mica windows have been received from the Research Laboratory at Schenectady. These are currently undergoing tests.

Standards Section

The standard cells used in the Type K-2 potentiometers in all the process areas were exchanged and certified during the month.

One standard cell was sent to the National Bureau of Standards for a periodic check.

Secondary standards of resistance and capacitance were sent to the Bureau of Standards for certification.

Design and Construction - Instrument Activity

100 Areas (Reference Report No. HW-8726)

Preliminary specifications, for quotation purposes, on the Combustion Control - 184 Building, the Flow and pH Control - 185 Building, and the Main Pump House Control - 190 Building were issued July 1947, and quotations were received early in September. A number of studies are under way for changes in Area design which may affect these specifications. Decisions on the proposals resulting from these studies are expected in the near future, at which time the Flow diagram can be completed and instrumentation design begun.

Approval has been received to change the color scheme of instrument panels in the 105-DR Building to a grey-green rather than a black finish. Paint specifications are being obtained which will be included in all panel specifications.

3

1208096

[redacted]

The Instrument Warehouse and Shop Facility at White Bluffs has been completed with the exception of pipe and electrical work. As no heat is available, equipment cannot be moved in. A modification to door opening was made to accommodate the Pressure Monitor panel for the 105-DR Building, which in accordance with the present schedule will be received before the building construction is ready to receive it.

The question of who will perform the alteration work in the present 100-D operating area to accommodate the additional instruments required for operation of the 105-DR Building has been raised. An estimate of man power required to do this work has been submitted with the expectation that the operating group will perform same.

Arrangements have been made with the General Engineering and Consulting Laboratory to build all the required ionization chambers.

The study of pile motion indicators is progressing satisfactorily. The design for measurement of vertical expansion of graphite at six points on top of pile is complete. A prototype unit for measurement of dishing of rear face is under construction using a tight wire reference and a nozzle and flapper arrangement, which will apply a varying air pressure to a bellows which, in turn, will position a core in a Bailey transmitter coil. A prototype of a transmitter for rear shield movements will also be made and these, too, will use Bailey transmitter coils. It is planned to use a Bailey Indicator and transfer switch calibrated in 1/1000 of an inch mounted on the Monitor Room Panel for measuring the output of these coils.

The design of the Main Control Desk has been generally agreed upon in a meeting with the "P" Department and with the Electrical Section of the Design and Construction Department. It is expected that all drilling and cutout details will be completed by February 10, 1948 and sketches available to procure the steel at that time. The two Main Control Desks will be piped and wired in the Instrument Warehouse at White Bluffs by the Construction Contractors' forces.

Redox (Reference Report No. HW-8727)

Shop tests were completed on the liquid seal transmission system for column differential application. Field installation will be made when operating schedules permit. Data collected to date indicate favorable adaptation of this type of transmission to the Scale-Up program.

Installation is complete for test of the mechanical phase indicator. Flow tests to determine the applicability of the unit will be conducted in the near future.

A shop mock-up has been assembled to test the capabilities of feed stream control when using a Fisher-Porter controller, Hammel-Dahl valve and Eastern Air Device air driven pump. The problem to be investigated concerns the effect of change of air pressure supplied to the pump to the flow characteristics of the system.

[redacted]

[redacted]

234-5 Building

Several meetings were held to discuss space requirements for the Instrument Department Shops in the fully regulated and regulated zones. A floor plan of 30 x 35 feet for each of the two shops was considered a conservative estimate of space required for the work load anticipated by the operating groups.

[redacted]

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	January
Beginning of month	182
End of Month	183
Net Increase	1

Reasons

Four (4) employees were removed from payroll by transfer or termination. Five (5) employees were added to the payroll. Four (4) of the additions were replacements for persons removed, and the fifth person was placed on the Construction Program in the Instrument Department Warehouse at White Bluffs.

SERVICE DEPARTMENT

JANUARY 1948

PERSONNEL

ORGANIZATION AND PERSONNEL

Employment and Investigations

Effective January 1, N. E. Thompson, who has been assigned to the Procurement Group on a loan basis from the Technical Department since August 1, 1947, was officially transferred to the Personnel Division.

Four typists were transferred from the Procurement Group during the month. Effective January 5, one typist was transferred to the Construction Department. Effective January 21, two typists were transferred to the Security Division of the Service Department; and effective January 27, one typist was transferred to the Security Division of the Service Department.

One office helper assigned to the Files Group terminated voluntarily on January 2. Effective January 28, one office helper was transferred to the Realty Division of the Service Department.

Industrial Relations

No organization changes were made in this division during the month of January.

Public Relations

No organization changes were made in this division during the month of January.

Education and Training

One typist assigned to this division terminated voluntarily on January 30.

ACTIVITIES

Employment and Investigation

During the past month the volume of employment interviews increased considerably. A total of 2,220 applicants were interviewed during January, as compared with a total of 1,526 interviewed during the month of December, 1947.

At the beginning of the month there were 661 open requisitions for weekly personnel, of which 471 were covered by interim commitments. At the end of the month there were 497 open requisitions, of which 419 were covered by interim commitments. In addition, at the beginning of the month there was a total of 131 requisitions for monthly personnel; 59 of the individuals requisitioned having accepted offers, 44 having been made offers but no acceptances received, and the balance being in process of investigation. At the end of the month there was a total of 108 requisitions for monthly personnel; 63 of these individuals having accepted our offers, 36 having been made offers but no acceptances received, and the remainder being in process of investigation.

During the past month 46 new requests for inter-departmental transfers were received by the Procurement Group. In addition, 19 requests already on hand were also reviewed, bringing the total of such requests to 65. Of this number 34 were personally interviewed by members of the Personnel Division, and as a result 19 transfers were effected.

During January the technical recruiter of the Procurement Group interviewed 9 prospective applicants at the University of California and 23 at Stanford University. The results of this recruiting trip were rather disappointing, primarily due to the fact that local industry in California is absorbing a large percentage of the graduates from the California schools. Offers of employment, however, were made to 3 analysts, 2 chemists and 3 engineers.

Industrial Relations

During the month of January a total of 1,421 contacts with company employees were made by the Industrial Relations Counselors. These contacts resulted in a total of 1,924 inquiries, summarized as follows:

Policy	194
Military Service	15
Group Life Insurance	268
Group Disability Insurance	282
Pension Plan	115
Suggestion System	19
G. I. Bill of Rights	3
Social Security	58
Recreation	8
Richland Housing	89
Other Housing	16
Municipal (facilities)	14
Municipal (social)	10
Municipal (personal)	11
Personal	127
Miscellaneous	180
Income Tax	515
Total	1,924

A total of 104 exit interviews were given to terminating employees during the month.

Service Department

In January 266 new employees were given orientation. Of this number 70% elected to participate in the Group Life Insurance Plan and 82% elected to participate in the Group Disability Insurance Plan. Six employees who had rejected the Group Disability Insurance Plan at the time of orientation elected to participate on further contact by the Industrial Relations Counselors.

The Industrial Relations Counselors attended three area council meetings with a total of 43 members in attendance. In addition, 15 meetings were conducted by Industrial Relations Counselors during January at the request of the various departments. A total of 327 persons attended these meetings, the purpose for which was to further explain the employee benefit plans and also explain income tax returns.

Five employees retired during January. These employees were as follows:

Adolph N. Clifford, Transportation Department
Albert B. Huntington, Service Department
Fred Jensen, Service Department
Francis E. McCarty, Transportation Department
Mary S. McCarty, Medical Department (voluntary)

Contacts were made with these employees prior to their departure to make certain that they were fully informed regarding the conditions of their retirement under the Pension Plan.

Two employees on leave of absence because of illness were contacted by the Industrial Relations Counselors and information furnished them concerning their Group Disability Insurance. These employees were Kenneth J. Jolley, Service Department, and S. C. Fullenweider, Maintenance Department.

Dewey E. Jones, an employee of the Instrument Department, died during the past month. Inasmuch as there were no relatives residing in this community, it was necessary that the Industrial Relations Division make all necessary arrangements relative to the disposition of this individual's personal effects. Assistance also was rendered in having an administrator appointed for the handling of this employee's estate.

During the month of January, 515 employees were given assistance in the preparation of their income tax returns.

At the end of January the volume of work in the office of the Secretary of the Suggestion System was as follows:

	Dec.	Jan.	Total Since 7-15-47
Suggestions received and acknowledged	275	141	1,611
Investigation reports completed	300	301	1,218
Awards granted by the Suggestion Committee	20	26	69
Cash awards	$125	$295	$780

Service Department

During January a meeting was held with a group of bus drivers in the Transportation Department at which time additional information on the Suggestion System was furnished them and questions clarified.

Effective January 1, Investigation Report forms for suggestions indicate the date the suggestion is written in addition to the actual date of report.

1. Insurance Coverage

The company attorney at this location, as a result of inquiries from the Medical Department, has been requested to ascertain if the Travelers Liability policy in effect at this works extends coverage to the doctors and dentists on this project in the event of mal-practice suits.

2. Life Insurance

Code information for use by insurance companies in issuing insurance to employees on this project was furnished to 24 insurance companies and investigation agencies during January.

3. Compensation

A. An order was received from the Department of Labor and Industries advising that this claimant had been placed on a pension, effective January 20. In view of the information obtained as a result of an investigation conducted in this case, it is felt that objection should be made to this order and, accordingly, the matter was referred to the company attorney.

B. . Information was received from the Department of Labor and Industries indicating that the widow of this former employee would be placed on a pension. In view of the fact that it is the opinion of the Medical Department that death in this instance was a result of natural causes, this matter was referred to the company attorney for further action.

During the past month Mr. Dan Adair and Mr. Robert McFarland of the Department of Labor and Industries, Division of Safety visited the project and inspected the construction area together with a representative of the company Safety Division. It was the opinion of these gentlemen that the construction safety program was quite satisfactory.

A representative of the Insurance Group, together with the company attorney, visited Seattle and Olympia during the past month for the purpose of discussing matters of importance with officials of the Department of Labor and Industries. During this visit, a request was made by the Director of the Department of Labor and Industries to increase by two the number of employees whose duties are primarily concerned with the handling of claims under the present agreement between the company and the Department of Labor and Industries. The Director advised that it was their desire to assign these two additional persons to Pasco for the purpose of advising construction employees of their rights under the Workmen's Compensation Laws of this state. This proposal was discussed with company officials as well as Atomic Energy Commission

personnel. It was agreed that the request should be tabled temporarily until a further study could be made of the costs now being incurred for administrative expenses under the present agreement.

Women's Activities

Due to many requests, plans were arranged during the past month to offer another beginners' shorthand class, providing an enrollment of 20 members could be obtained; registration for this class to begin in February. Classes in advanced shorthand courses are also being extended for another nine weeks because of requests made by those individuals taking this course.

Twenty-six typing tests and 12 shorthand tests were given by the Women Activities Group during January. In addition, 90 new women employees were interviewed. Twelve of this group were stenographers and 13 were typists.

Public Relations

Progress Editions of the SEATTLE DAILY JOURNAL OF COMMERCE and of the Spokane SPOKESMAN-REVIEW were published during the month, containing copy, together with pictures, prepared by this division.

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

1-14	Rotary Club	Seattle, Washington	D. H. Lauder
1-16	American Institute of Electrical Engineers	Spokane, Washington	C. P. Cabell
1-21	Gyro-Club	Yakima, Washington	D. H. Lauder
1-21	Father Joseph Caruana, General Assembly	Yakima, Washington	J. S. McMahon
1-27	Chamber of Commerce	Sunnyside, Washington	J. S. McMahon

A wire recording was made of the talk given by D. H. Lauder before the Gyro-Club in Yakima and subsequently broadcasted over station K.I.T. in Yakima on the evening of January 21.

Inasmuch as the subject for several of these talks concerned the new policy of permitting potential operators to construct their own buildings in Richland on land leased from the government, an increase in the number of applications from potential operators has been reported by the Commercial Facilities Group of the Realty Division. In addition, a representative of the PACIFIC BUILDER AND ENGINEER, a magazine published in Seattle, Washington, visited Richland during the past month to obtain additional information for a feature article in that magazine concerning the construction work in Richland and North Richland.

Numerous requests have been received during the month for reprints of C. P. Cabbel's article entitled "Nuclear Power" printed in the December issue of G-E REVIEW.

Definite arrangements have been made for the showing of a "House of Magic" which will be exhibited here March 15 through March 19. The schedule for evening showings is tentatively set to begin at 8:00 P.M. The show will require approximately two hours for presentation, and off-shift employees at this works will be given an opportunity to see this show during a day-time showing. Two day-time presentations

will be given during the period that the "House of Magic" is here.

During the month of January display cases for the distribution of General Electric information booklets were completed and installed in the reception rooms of the Administration, Personnel and Engineering Buildings.

Thirteen general news releases were made to the Villager and Tri-City Herald during the month of January.

Five issues of the Hanford Works NEWS were published during the month of January. Considerable difficulty has been experienced in having the Works NEWS printed. This difficulty is a result of inadquate equipment, personnel and other shop facilities which the printer doing this work has at the present time. During the month of January it was necessary, because of faulty equipment, to have one issue of the Works NEWS printed in Walla Walla.

Education and Training

A trip was made to the University of Washington, Washington State College and University of Idaho during the month of January for the purpose of arranging further details in connection with the cooperation of these institutions on both the graduate and under graduate level.

The University of Oregon has officially volunteered to join the list of cooperating institutions on the graduate program.

During the past month a special report was prepared concerning the procedure used in effecting cooperation on a graduate level with major institutions of this area. This report was requested by the President of the company.

Official approval has been received from the cooperating institutions to use their names in the near future on the G-E radio program featuring Fred Waring.

STATISTICS

Employment and Investigation

Number of employees on rolls	12-31-47	1-31-48
Exempt	1,410	1,457
Non-Exempt	5,942	6,063
Total	7,352	7,520

Service Department

ADDITIONS

	Exempt	Non-Exempt	Total
New Hires	42	207	249
Reemploys	-	5	5
Reactivations	-	10	10
Transfers from Other Plants	-	1	1
Net Additions	42	223	265
Payroll Exchanges	12*	-	12
Gross Additions	54	223	277

TERMINATIONS

	Exempt	Non-Exempt	Total
Actual Terminations	5	80	85
Removals due to extended leave	2	10	12
Payroll Exchanges	-	12**	12
Gross Terminations	7	102	109

Approximately 91% of all actual terminations were on a voluntary basis and most of these were for the following reasons: (a) another job, (b) personal (Dissatisfied with job, wages, hours, etc.), and (c) housing.

GENERAL

	12-47	1-48
Applicants interviewed	1,526	2,220
Photographs processed	3,446	4,112
Fingerprint impressions taken (in duplicate)	324	517
Procurement letters written	2,129	2,008
Absenteeism Statistics *** (Weekly Salary Roll)		
Male	1.61%	2.09%
Female	2.29%	3.17%
Total Plant Average	1.76%	2.33%

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

7 1200106

Service Department

INVESTIGATION STATISTICS

	12-47	1-48
Cases pending at beginning of month	3,180	2,340
Cases received during the month	509	415
Cases closed	1,349	778
Cases pending at month-end	2,340	1,977
Number found satisfactory for employment	306	305
Number closed before investigation completed	160	9
Number found unsatisfactory for employment	15	9
Special investigations conducted	22	97

Compensation and Insurance

Claims

	Reported in January 1948	Reported in December 1947	Total Since Sept.1,1946
Workmen's Compensation	58	37	234
Liability	7	15	93
Handled for du Pont	0	0	

Compensation Payments Approved (Department of Labor and Industries)

	December 1947		November 1947		Total Since 9-1-47
	No. of Claims	Amount	No. of Claims	Amount	Amount
Medical Aid	3	$ 260.24	10	$ 763.81	$ 7,720.15
Accident Fund	15	2,064.75	12	1,586.41	53,374.73
Pension	24	1,183.07	24	1,184.57	22,044.80

Liability Payments Approved (Travelers Insurance Company)

November 30, 1947	Public Liability	$605.34
	Property Damage	223.49
		828.83
December 31, 1947	Property Damage	$133.18
	Auto Property Damage	538.15
		671.33

Service Department

PERSONNEL DIVISION

ORGANIZATION AND PERSONNEL

Number of Employees on Payroll:	January
Beginning of month	97
End of month	91
Net decrease	6

This decrease in personnel is due to a slight reduction in the employment activities of this division.

Service Department

PROTECTION

SAFETY & FIRE PROTECTION

Safety

Plant Safety Record - 12 days

Injury Statistics

	December	January	Year to Date
Major Injuries	0	1	1
Non-Tabulatable Major Injuries	0	0	0
Sub-Major Injuries	4	3*	2
Minor Injuries	443	453	458

*Injury to F. O. Earl (11-24-47) reclassified from minor to sub-major on 1-8-48.

Major Injury No. 44

January 19, 1948 - , an employee of the Maintenance Department in the 700 Area, sustained a fracture of the left heel and left radio bone at elbow. Injured and another mechanic were hanging aluminum prefabricated ceiling sections to 8-3/8 inch rods hung from the roof of the 722 shop building Injured released the needle beams and started to the ladder to descend when he noticed the turnbuckle on north end of the west beam did not have proper or sufficient thread. He went to the turnbuckle and placed a pipe wrench on rod and used spud wrench to turn buckle. The excessive force used to turn the buckle caused rod to shear approximately 1/2 inch above turnbuckle.

Sub-Major Injury No. 98

November 24, 1947 - , an employee of the Maintenance Department in the 200-E Area, sustained a transverse fracture of proximal phalanx of little toe and middle phalanx of the third toe on left foot. Injured was helping replace a 10 ft. x 22 in. sheet of 1/8 inch stainless steel in a sheet metal rack. He placed his end of the sheet in the rack opening, and the other employee placed his on a 2 inch pipe. Injured stepped back between the two racks preparatory to gaining a new hold on the sheet. While in this position and before he had time to take hold of the sheet, it slipped off the pipe on which it was resting and the edge struck his left foot.

Sub-Major Injury No. 102

January 19, 1948 - , an employee of the Maintenance Department in the 100-B Area, sustained a fracture to tip of right ring finger. Injured was repairing a steam trap on an outside line. While removing a short nipple from a male section of a union, the wrench slipped and caught his finger between it and another wrench, causing the injury.

1208109

Service Department

Sub-Major Injury No. 103

January 26, 1948 - , an employee of the Maintenance Department in the 700 Area, sustained a chip fracture of the right ring finger and contusion of right small finger. Injured went to Stores to secure a cylinder of acetylene gas. Upon arriving at the loading platform of the cylinder storage building, he backed the weapon carrier up to the platform. Injured placed his foot against the bottom of the cylinder preparatory to setting the bottle in an upright position in the carrier. His foot slipped and, at the same time, his fingers were caught between the cylinder cap and the loading platform.

Safety Meetings - There were 760 Safety Meetings held during the month of January, with a total attendance of 9,341.

Safety Spectacles - Orders were placed for 53 pair prescription safety spectacles; 63 pair were received, checked and fitted; and 104 adjustments and repairs were made to all types of safety spectacles.

Exposure Hours - There were 1,263,237 exposure hours from December 31, 1947 to and including January 31, 1948.

Activities

100 Areas

The Safety Engineer in the 100 Areas drew up plans for changes in the 100-D and 100-F Area Safety Reports and submitted them to the Area Safety Council. Plans were also drawn up for changes of the Safety Hazard Inspection Meeting in the 100-D and 100-F Areas.

A special investigation was made of CO_2 gas cylinder handling problem involving cylinders received with no protective covering.

In cooperation with the Maintenance Department, heavy plastic windows are being inserted in nitrometer masks.

A combination foot guard and ice creeper is now being used by employees at the White Bluffs Ice Plant to prevent slipping and ice blocks falling on feet.

The dangerous electrical switching equipment found in use at the White Bluffs Ice Plant has been removed and safe, modern equipment installed.

Steps are being taken in 100-B and 100-D Areas to renew outside safety signs that have not been changed for several years.

200 Areas

The 200-West Area completed two years without a major injury on January 10, 1948. It has been over a year since their last sub-major injury.

700 & 1100 Areas

The 700 Area Council was asked to provide adequate guard post protection for fire hydrants and post indicator valves in the Area. The present 4" x 4" guard posts are rolled off in many cases.

At the January School Safety Council Meeting the principals were urged to make the best possible use of the Safety Education magazines and safety lesson leaflets. A special safety bulletin, drawing attention to outstanding articles in the Safety Education magazine, is prepared for each issue and distributed to the school classrooms.

A recommendation was issued that adequate bicycle stalls be provided at each school.

General

A study was made of the oil burners in the Pasco Warehouses and recommendation made to the Power Department.

The Annual Report of the Safety and Fire Protection Division for 1947 was distributed on January 8, 1948.

An inspection was made of the Kadlec Hospital Dental Clinic for safety hazards, and recommendations were made for the elimination of such hazards.

The Safety Division statistical records have been checked and corrected from the start-up period. These records have been posted on new forms and placed in proper binders, which gives an adequate method and system for future use.

The start-up date for calculating upper and lower limit lines on the Hanford Works Safety Report Charts has been advanced from September 1, 1945 to January 1, 1946.

SAFETY DIVISION - INJURY AND ACTIVITY STATISTICS

	300 Area	100-B Area	100-D Area	100-F Area	200-E Area	200-W Area	700-1100 Area	Hanford Area	3000 Area	Pasco Area
Minor Injuries	82	4	29	31	58	102	118	3	24	7
Sub-Major Injuries	0	1	0	0	1	0	1	0	0	0
Major Injuries	0	0	0	0	0	0	1	0	0	0
Days since last Tabulatable Major Injury	108	1912	366	1012	79	751	12	306	184	184
Days since last Sub-Major Injury	113	12	536	102	52	416	5	306	57	113
Days without a Minor Injury	4	27	13	12	5	6	4	29	17	26
Safety Meetings Conducted	102	43	63	63	61	107	297	5	0	13
Number in Attendance	1146	240	578	583	516	1055	5536	44	0	87
Safety Spectacles Delivered	12	1	6	7	10	9	17	0	1	0
Safety Spectacles Serviced	6	4	17	16	35	25	1	0	0	0

[redacted]

MONTHLY INJURY ANALYSIS

Period - January 1 through January 31, 1943

Minor Injuries

	Misc. Burns	Abrasions	Contusions	Lacerations	Punctures	Splinters	Strains & Sprains	Foreign Body	Blisters	Unclassified	TOTAL JANUARY	TOTAL LAST MONTH
Production P	6	3	2	6	0	1	0	1	2	1	22	36
Production S	2	6	1	3	0	1	0	0	1	0	14	9
Technical	9	14	0	11	5	4	0	1	0	0	44	28
Power	2	3	1	1	0	1	1	4	0	2	15	5
Maintenance	23	31	17	43	8	10	6	7	5	10	160	145
Electrical	4	2	4	4	2	1	1	0	0	0	18	33
Instrument	1	6	1	6	1	2	1	0	2	0	20	14
Service	0	16	5	17	5	1	3	1	1	4	53	54
Transportation	3	14	9	8	1	1	9	2	0	1	48	49
Medical	3	8	4	7	4	4	0	0	0	2	32	42
Accounting	0	6	3	4	5	2	3	0	0	0	23	26
Design & Construction	0	1	1	2	2	0	0	2	1	0	9	2
TOTAL	53	110	48	112	33	28	24	18	12	20	458	
LAST MONTH	29	94	52	125	38	22	6	37	7	33		443

1208113

[redacted]

Fire Protection

Fires

	Number of Fires		Estimated Damage	
	December	January	December	January
Village	16	18	$ 73.70	$230.00
Plant Area	19	3	810.82	268.00
Miscellaneous	1	0	———	———
Total	36	21	$884.52	$498.00

Village

January 1, 1948 — Electric heater too close to bed in home of A. C. Beaver, 801 Stanton. Estimated damage - $5.00.

January 14, 1948 — Kerosene salamander tipped over in basement of new construction home, 1603 Jadwin. Estimated damage - $225.00.

North Richland

January 22, 1948 — Kerosene fire pot turned over in Barracks 197. Estimated damage - $268.00.

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

The total loss from fires in 1948 is $498.00. The loss during the same period in 1947 was $80.00.

Inspection was made of 293 homes and 306 buildings in the Village.

Routine Duties

Fire Extinguishers		Fire Drills & Lectures	
Inspected	3,235	Outside	85
Installed and Relocated	500	Inside (House Drills)	291
Refilled	448	Auxiliary Brigade	25
Repaired	52	Safety Meetings	86

Gas Masks

Inspected	115
Serviced	29

All fire alarm boxes in the Village and Plant Areas were tested.

All fire hose houses, hydrants and lines in Plant Areas were inspected and hydrants flushed.

A new hydrant was installed at Hanford, replacing hydrant No. 11.

GENERAL DIVISION

Laundering volumes were as follows:

Plant Laundry (Building 2723)	December	January
Coveralls - Pieces	19,979	20,069
Towels - "	6,026	5,576
Miscellaneous "	46,595	41,926
Total Pieces	72,600	67,471
Total Dry Weight - Lbs.	102,939	97,073

Richland Laundry (Building 723)	December	January
Flatwork - Pieces	120,958	121,107
Rough Dry- "	28,585	36,033
Finished - "	3,882	4,595
Total Pieces	153,425	161,737
Total Dry Weight - Lbs.	86,690	105,129

CLASSIFIED FILE

During the month of January, work on the Hanford Works Technical Manual has progressed according to schedule. The estimated completion date is for the latter part of March or the first of April.

The inventory of classified correspondence originating on this site and classified correspondence received from off-site continues.

The 300 Area Classified Files and Technical Library were transferred to the Technical Department effective January 1, 1948. The following work report includes only those figures from the 700 Area Classified File.

	January
Classified Documents Received and Issued (Incoming)	1,166
Unclassified and Restricted Documents Received (Incoming)	7,130
Classified Documents Issued (Outgoing)	3,167
Inter-Area Transfer	6,084
Yellow Copy Transfer - Pittsfield	1,424
Documents Routed	4,911
Requests for File Documents	2,048
Documents Transmitted to AEC for Re-transmittal offsite	70
Total	26,000

1206115

Service Department

CONSTRUCTION SAFETY

Atkinson-Jones Construction Company

Injury Statistics

Number of exposure hours for month of January, 1948 - 1,562,599.

	December	January	Frequency	Severity
Major Injuries	11	12	7.68	.333
Sub-Major Injuries	23	41		
Minor Injuries	789	973	6.23	

Accumulative major injury frequency rate.	9.28
Accumulative major injury severity rate	.230
Number of days since last tabulatable major injury	3
Number of days since last sub-major injury	1
Number of days without a minor injury	3

Major Injury No. 32

Injured was grading a ditch and, while shoveling dirt to level up, the wind blew dust in his eye.

Major Injury No. 33

Injured was nailing cross braces in between ceiling joists while kneeling on two 1 inch x 12 inch shiplap lying side by side. He missed the nail, and pull of the hammer caused a back strain.

Major Injury No. 34

Injured climbed a ladder to roof on south side of building for the purpose of removing an old sprinkling system from the attic. He crawled through a small hole (16 inches x 22 inches) where rafters join ceiling joist. Maximum clearance between sheet rock ceiling and roof was 13-1/2 inches. In crawling through, his weight was supported by sheet rock which collapsed, causing injured to fall approximately 10 feet to wooden floor.

Major Injury No. 35

Injured was loading scraps of sheet lead of various sizes and weights which were on the ground and covered with trash from the building construction. As injured picked up a piece of sheet lead to load into the dump truck (loading being done through open tail gate at the rear), he noticed a pain in his back.

Major Injury No. 36

Injured and fellow workman were stacking lumber (2 inch x 8 inch x 16 feet). As a fellow workman attempted to slide a plank into place, the far end slipped off the side of the stack, causing him to lose his grasp. The plank then fell approximately four feet, striking the injured on his right knee, causing a contusion.

1208116

Major Injury No. 37

Injured was feeding a table power saw, ripping strips of wood 2 x 2 x 54 inches, without the use of a push stick. His hand slipped and came in contact with the saw.

Major Injury No. 38

Injured and a fellow worker were loading a four-inch rising steam valve onto an "A" frame truck. Overall length of the valve was approximately 22 inches, and it weighed about 30 pounds. Injured was lifting by the wheel end of the valve, and as it neared the truck bed (wheel part being over and above), the other end slipped from the fellow worker's hands, causing the valve to fall and the wheel to turn and catch injured's finger. His finger struck the metal edge of the truck bed facing upward between it and the valve wheel. Injury was transverse fracture distal phalanx left index finger.

Major Injury No. 39 - Incomplete.

Major Injury No. 40

Injured and a fellow workman were digging a hole in frozen ground, which necessitated the use of a jack hammer. As the dirt was loosened, injured threw it out and away from the hole approximately eight feet. His back gradually began to ache and the pain increased. Injury was a back strain.

Major Injuries Nos. 41, 42, 43 - Incomplete.

Sub-Major Injury No. 47 - Incomplete.

Sub-Major Injury No. 48

Injured was restacking 4" x 4" x 4' timbers which were frosty and slick. They were stacked four high, resting on the ground. Injured took hold of the bottom timber, jerked outward quickly, and balance of the pile fell on his finger.

Sub-Major Injury No. 49

Injured and another workman were loading planks 2" x 12" x 12' (five high) onto a flat bed truck. The planks were heavy and saturated with moisture. Injured noticed pain after he had finished work.

Sub-Major Injury No 50

Injured and a fellow workman were repairing a ready mix cement plant. The fellow workman placed an eight inch pulley on a four inch plate, approximately one-half of the pulley resting on another pulley that was installed at a thirty degree angle. As he was driving out a pulley pin and bushing to make replacement, the vibration caused the first pulley to fall about fifteen feet, striking injured on the left great toe.

Sub-Major Injury No. 51

Injured was carrying box of tools on floor of house in B Area, and when he stepped on the top step of stairs leading to the basement, the step turned, causing him to fall to the bottom of the stairs (a distance of about 15 feet). The step was in place but not nailed. During the fall, he struck a 2 x 2 inch brace with his shoulder.

Sub-Major Injury No. 52

Injured was helping another workman stack lumber (4" x 12", from 10 to 16 feet in length). The stack was from 3 to 4 feet high. The lumber was swung by a man on each end from bottom and side of pile to the top.

Sub-Major Injury No. 53 - Incomplete

Sub-Major Injury No. 54

Injured was removing a gear case (6" x 18" x 3' - weighing approximately 100 pounds) from a crane. As he placed gear case on metal catwalk "on end", it slipped and fell approximately two feet, striking his right foot.

Sub-Major Injury No. 55 - Incomplete

Sub-Major Injury No. 56

Injured and fellow workman were lifting one end of a 6" x 8" x 14' timber into a truck bed. The timber slipped from the fellow workman's grasp, throwing all of the weight on the injured. This caused timber to fall, and injured's fingers were caught between it and the truck bed.

Sub-Major Injury No. 57

Injured was marking bins which contained pipe fittings of various sizes and shapes. Fittings in some bins were packed high and sloping outward. Bins were about 24 inches deep, 12 to 14 inches high, and 20 to 24 inches wide. Injured was working between bins which were about five feet apart when an "L" type fitting, weighing about 2-1/2 to 3 pounds fell from a bin 3 feet x 9 inches high and struck his toe.

Sub-Major Injury No. 58

Injured and fellow workman had completed a jeep door and were holding it in place in order to find the proper location of the hinges. As they moved the door to get proper alignment, the door slipped from their grasp and fell, striking injured's foot.

Sub-Major Injury No. 59

Injured was wheeling bags of cement from cement storage warehouse to a truck. The cement was piled four high in warehouse, and injured was in a crouched position to take top bag of cement to load two-wheeler when he felt a pain in his back.

10

Sub-Major Injury No. 60

Injured was pulling a whaler (2" x 4" x 12' long) off the cement forms on the sewage disposal plant. The whaler was about nine feet above the ground. Injured was left handed, and while pulling the whaler from the forms, it slipped and dropped on his right hand.

Sub-Major Injury No. 61 - Incomplete.

Sub-Major Injury No. 62

Injured was helping six other workmen lift and hang a 12 x 12 foot door on the west side of the automotive repair shop. The door weighed approximately 450 pounds, and it was being hung on a track. While in the act of lifting, injured noticed a pain in his back.

Sub-Major Injury No. 63

Crane had just set a load of lumber on bearers, and difficulty was experienced in moving bearers away from cable. The crane operator raised the load twice, and on the third attempt injured was in the act of moving bearer on his side away from the cable when tension was slackened and load came down on his thumb, catching it between the bearer (approximately 4" x 6" x 4') and one of the timbers of the load containing 10 x 10 inch timbers of various lengths.

Sub-Major Injury No. 64 - Incomplete.

Sub-Major Injury No. 65

Injured was restacking lumber, passing it from top of stack 3 or 4 feet in height to workmen below. The lumber was coated with ice, and as injured was walking on the stack, he slipped and fell to the ground, landing on his feet.

Sub-Major Injury No. 66

Injured and fellow worker were restacking 8" x 8" x 12' timbers which were covered with frost and quite slick. The timber was in stacks four feet in height and was being moved with one man at each end. While moving one of the timbers, injured lost his grasp, and it fell, striking his foot.

Sub-Major Injury No. 67

Injured was tearing forms out of a 4 x 4 foot sump about 5 feet deep. The forms were tight, and moisture had caused the boards to be frozen to the cement. Sump was immediately inside northeast side of building near small window. Injured, working from the outside, placed a 2" x 4" x 5' through the open window against stud on the form. Fellow worker struck the edge of the 2" x 4" with hammer which bounced off, striking injured's hand a glancing blow.

[redacted]

Service Department

DECLASSIFIED

Sub-Major Injury No. 68

Injured was standing in a trench approximately 2 feet wide, 2 feet deep and 40 feet long, using an air-driven sand tamper to pack dirt around a pipe line. As he attempted to step out of the trench with the tamper, which was not shut off, it struck a rock on the side of the trench, causing him to lose his grasp on the tamper. He reached for the tamper, and in doing so his finger was caught under the starting lever.

Sub-Major No. 69

Injured was standing on scaffold, nailing a truss to a joist. He was working near one end of the truss, with left hand resting on truss. While injured was nailing, another truss was being readied for placement by other workers. Truss was lifted to joists and then pushed along them to its position. The truss was upside down, and, in the process of being righted, it slid along the joist, striking another joist, and injured's finger was caught between them.

Sub-Major Injury No. 70

Injured was lifting a piece of sheet iron from the ground when it slipped from his grasp and fell approximately one and one-half feet, striking his right foot.

Sub-Major Injury No. 71 - Incomplete

Sub-Major Injury No. 72 - Incomplete

Sub-Major Injury No. 73

Injured was dismounting from Euclid truck. He slipped from the top step, and the handhold was released simultaneously with slipping, causing him to fall and strike the ground with his arm extended.

Sub-Major Injury No. 74

Injured and two other workmen were taking down a wooden scaffold. The cross braces were removed before the end braces, which caused the scaffold to collapse. The end of one of the 2 x 4 inch braces struck injured on the left foot, causing a chip fracture distal phalanx of left great toe.

Sub-Major Injury No. 75 - Incomplete.

Sub-Major Injury No. 76

Injured was climbing up the rear end of a dump truck to assist the driver in closing the tail gate. As he stepped on reflector at rear of the truck, his foot slipped, and as he fell, he put out his left arm to catch himself, throwing all his weight on it. This resulted in a strain of the left wrist.

Sub-Major Injury No. 77 - Incomplete

1208120

12

[redacted]

Sub-Major Injury No. 78

Injured was driving bolts back with an eight pound sledge hammer. As the bolt went back, his fingers were caught between the handle of the hammer and another projecting bolt, causing a fractured finger.

Sub-Major Injury No. 79

Injured and fellow workman were lowering a scaffold plank. The plank slipped from fellow worker's grasp and fell approximately three feet, striking injured on the right great toe, causing a fracture.

Sub-Major Injury No. 80 - Incomplete.

Sub-Major Injury No. 81 - Incomplete.

Sub-Major Injury No. 82

Injured was standing by the side of a lowboy trailer, while crane operator was swinging a load of ties from the pile to be loaded onto the lowboy. Ties had been set on the trailer, and one of them slid off endways, striking injured in the mouth.

Sub-Major Injury No. 83

Injured was descending a ladder on the dust collector building. He struck his elbow against the top hoop of the ladder, which was a protective device, causing a fracture of right radius of his elbow.

Sub-Major Injury No. 84

Injured was putting a three-inch pipe, twelve feet long, in a chain vise, and part of the chain was over the top of the pipe. As he reached over with left hand and grasped the chain three inches from the end to pull it back over the pipe, the end of the chain struck him in the mouth and loosened a tooth.

Sub-Major Injuries Nos. 85, 86, 87 - Incomplete.

Orientations

There were 137 orientation lectures given, with a total attendance of 2,621.

Safety Meetings

There were 565 safety meetings held, with a total attendance of 9,961. There were 5 safety meetings held for supervision, with a total attendance of 77.

Sub-Contractor Activities

The Central Safety Committee held two meetings during the month. The individual attendance of these meetings is not consistent. No definite assignment of membership on this committee has been made by management of Atkinson-Jones. All of the Atkinson-Jones sub-contractors were not represented at the committee meetings.

A sub-committee of the Central Safety Committee was appointed to formulate a set of master rules for testing and checking pressure vessels used by the Atkinson-Jones Company and their sub-contractors. The committee is to be composed of men well qualified in this field. The present requirements for testing of pressure vessels follows the State law, and the National codes pertaining to pressure vessels. The master rules for the sub-contractor will tend to eliminate any possible confusion.

The accumulative frequency rate continues to improve. Construction activity increased greatly, but the accumulative frequency dropped from 10.10, December 31, 1947, to 9.28 January 31, 1948. This decrease in injury frequency is approximately the same decrease that has occurred each month since the safety program was inaugurated with the sub-contractor on this site in August, 1947.

The safety poster programs and the suggestion system are progressing.

Safety Division Activities

Safety inspections have been made in all areas daily. Cooperation of the sub-contractor supervision in correcting conditions has been good.

The weekly safety news "The Green Cross" has been distributed each week. This publication continues to be received enthusiastically. It is particularly helpful to foremen in making preparation for gang tool box meetings.

J. L. Hudson Company

Injury Statistics

Number of exposure hours for month of January - 67,039.

	December	January	Frequency	Severity
Major Injuries	4	2	29.83	.149
Sub-Major Injuries	0	1		
Minor Injuries	53	30	4.48	

Accumulative major injury frequency rate	21.05
Accumulative major injury severity rate	.260
Number of days since last tabulatable major injury	5
Number of days since last sub-major injury	19
Number of days without a minor injury	16

Major Injury No. 8

Injured was standing on taper's bench approximately two feet in height. In descending from bench, he stepped backward to the floor, and, in doing so, he sustained a fracture of the right ankle.

Major Injury No. 9

Injured was carrying cabinet material and working inside house. He attempted to step over stack of cove molding approximately three feet wide and six inches high, and, in doing so, he stopped on part of the molding, straining his back.

Sub-Major Injury No. 3

Injured was riding on top of lumber on truck. The driver made a sharp right hand turn, throwing off the injured and part of the lumber. Injured was struck by falling lumber.

Activities

The construction activities of J. L. Hudson Company and Associates have decreased, and the hazards in general have largely been eliminated relative to excavations, building, piling and storage of materials, housekeeping and fabrication.

Although the above activities have tapered off sharply, the J. L. Hudson & Associates have had three serious injuries this month.

Morrison-Knudsen Company, Inc.

Injury Statistics

Number of exposure hours for month of January - 57,538.

	December	January	Frequency	Severity
Major Injuries	0	0	0.0	0.0
Sub-Major Injuries	0	0		
Minor Injuries	6	76	13.21	

Number of days without a minor injury - 5.

Safety Meetings

There were four safety meetings held, with a total attendance of 70. Two supervisors safety meetings were held, with an attendance of 39.

Activities

Satisfactory progress has been made in the safety program on the Morrison-Knudsen construction site. Safety meetings are being held and necessary information given to all personnel on the job.

The publicity program is well underway. A record board has been erected on the job site to denote the number of injury-free days, and to date no major or sub-major injuries have occurred; thus covering a period of approximately fifty-one days without serious injury.

Poster publicity, the "Green Cross" and frequent contact with personnel on the site have aided considerably in getting the job off to a good start safety-wise.

Very good cooperation in safety matters has been received, and a mutual feeling of a healthy safety program is the result.

C. C. Moore & Company - Activities

Daily contact and inspection has been made at the job site, and a good basis has been established for safety relations between supervision and the construction safety organization.

Recommendations from safety representatives have been accepted and action taken in a cooperative and willing manner.

Safety and protective equipment needed is in use, and supervision has done well in this respect.

It is anticipated that the program will continue to be satisfactory on this job.

There were 4,027.5 exposure hours during the month.

J. A. Terteling & Sons - Activities

The safety program for J. A. Terteling & Sons has progressed favorably in that good cooperation has been received from supervisory personnel in compliance with recommendations and regulations.

Particular attention has been given to elimination of hazards that may affect residents of the Village. Inspections are made daily and corrective action taken where necessary.

In general, the overall progress has been good.

There were 7,005 exposure hours during the month.

PATROL AND SECURITY

General

Building 761 and 762 were occupied and secured as of January 31, 1948. All doors are sealed, except the entrance which is controlled by a receptionist. Regular patrol checks are made of these buildings.

Effective January 15, 1948, that part of the 101 Building known as the 101 Test Room was made an "exclusion" area. A Kardex File, with a patrolman on duty, was placed in effect, with access limited to authorized "Q" cleared personnel only. To date, 81 employees are cleared for access to this room.

Work was completed in connection with further securing the 105-B, D and F Areas, by placing mesh bars across the tunnels between the 190 and 105 Buildings.

The Security Education Program was stepped up in the Atkinson-Jones Company and their sub-contractor organizations by direct talks with supervisory groups and distribution of an instruction manual on handling "restricted data".

The following evacuation plans went into effect this month: Operations Evacuation Plan for the Transportation Department, Construction Evacuation Plan for the 105-DR Area, and the Construction Evacuation Plan for White Bluffs, Agregate & Patch Plant, 101 Areas - Hanford and Hanford Tie Yard.

Service Department

The Security Slogan Contest, which will run eight weeks, began January 23, 1948. It is open to all General Electric employees on the Hanford Project, and its purpose is to stimulate interest in the "Re-emphasis of Security".

A Master Key and Lock Inventory was requested January 1, 1948, as required. Area patrols are now in process of compiling this inventory.

Effective January 30, 1948, an Adult Drivers Training Program was begun under direction of Division Supervisor, A. A. Layman. A vehicle has been equipped with dual controls for use in giving driving instructions. Classes are being held in Dormitory W-10, with an initial enrollment of 200. Instructors are Sergeant D. F. Metz and Patrolman Del Flint.

The guarding of classified material at the temporary post, 722-C Building, was discontinued January 2. On January 12, 1948, this post was resumed, with the detail lasting approximately 48 accumulated hours.

On January 9, 1948, the practice of sealing the side doors of the 760 Building was discontinued.

From January 1, 1948, to January 13, 1948, inclusive, one patrolman was posted at the Employment Building Monday through Friday, between the hours of 7:00 A.M. and 9:00 A.M. This procedure was changed on January 14, with hours of posting being 7:00 A.M. to 8:00 A.M.

On January 15, 1948, an hourly check was begun of the 720 Building on the swing and graveyard shifts.

On January 28, 1948, a post was established at the 761 Building with one man being posted at the building between the hours of 4:45 P.M. and 8:00 A.M. daily, and 24 hours on Saturdays, Sundays and holidays.

A patrolman and car were assigned to the Realty Division for escort duty whenever they requested the service. This has been effective Monday through Friday on the day shift.

Bus spot checks, conducted twice weekly at the 1131 Bus Lot, totalled 52 for January.

The Central Patrol Supply Section completed moving into permanent quarters in the 770-A Building on January 5, 1948.

The 105-DR Badge House was placed in operation on a 24 hour basis, effective January 19, 1948.

A new Patrol post was established at the 101 Machine Room in Hanford, effective January 14, 1948.

The Hanford Ferry is being manned the first part of the No. 3 shift for the transportation of personnel operating the "P.I." farms across the river.

Lights were installed over all exits of the 231 Building on January 28, 1948, as per recommendations submitted to the Area Chief Supervisor.

17 1288125

On January 27, 1948, procedure was placed in effect at the 3706-321 Badge House allowing the patrolman assigned to this post on the day shift to admit persons to enter the area on a red tag pass, provided such persons meet the requirements pertaining to the issuance of red tag passes. Building supervision is to be contacted when persons fail to have the necessary requirements.

PATROL

The 200-East and 200-West Areas handled 423 special escorts within the 200 Area.

Requests handled totalled 1901, mainly consisting of opening doors and gates for employees of other departments.

A total of 232 unusual incident reports was received, which consisted mainly of traffic violations.

Escorts of personnel into Classified Areas totalled 838 for the month.

Practice evacuations were held in the 100-F Area on January 7, in the 100-D Area on January 16, and in the 100-B Area on January 21, 1948.

Eleven employees were given emergency first aid treatment in areas by Patrol supervision during periods when doctors or nurses were not in the Area.

Training

M-8 training was continued. Training consisted of instruction on the 30 caliber and 50 caliber sub-machine gun and the 37 mm gun. This course of instruction was given to groups from each of the three 100 Areas and the two 200 Areas.

Advanced training at the Patrol Small Arms Range was continued, and qualifications in Army "L" course firing were as follows:

	November		December		January	
	No.	Percent	No.	Percent	No.	Percent
Unqualified	43	8	48	9	77	13
Marksman	155	30	174	32	150	25
Sharpshooter	108	21	110	20	148	25
Expert	212	41	218	39	226	37
Totals	518	100	550	100	601	100

Progress of scores and qualifications on the Sub-Machine gun course are as follows:

	November		December		January	
	No.	Percent	No.	Percent	No.	Percent
Unqualified	6	2	5	1	4	1
Marksman	15	5	7	2	21	4
Sharpshooter	36	11	38	10	98	15
Expert	267	82	320	87	475	80
Totals	324	100	370	100	590	100

18

Health talks were given on Hay Fever.

Security talks were given on "What Atomic Security Means to Me".

Safety talks were given on Safe Operation of Powered tools and Equipment.

Upon completion of area competition for the January period, awards were presented as follows:

High Team Average	273-1/5	Richland
High Area Average	262-51/110	Richland
High Individual Score	297	North Richland

Richland Area (Village)

	November	December	January
Classified escorts	11	6	14
Check on absentees	7	8	5
*Persons assisted	173	303	948
Doors and windows found open in commercial facilities	40	31	14
Lost children found	2	5	4
Ambulance runs	58	56	74
Lost Dogs reported	3	3	0
Dog and cat complaints	29	30	26
Persons injured by dogs	1	3	4
Totals	304	445	1089

*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 telephone; and opening Trailer Parking Lot for individuals.

Richland Area (North)

	November	December	January
Escorts	154	179	127
Bank details	4	0	26
Ambulance runs	11	8	17
*Persons assisted	519	685	854
Complaints investigated	156	124	78
Totals	844	999	1102

*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 (Pasco)

	November	December	January
*Persons assisted	24	42	37
Ambulance Runs	3	5	9
Complaints handled	2	10	2
Escorts	0	0	3
Total	29	57	51

*Includes: Bedding issued; open doors and windows; investigation complaints, and handling of emergency details in general.

Richland Area (Columbia Camp)

	November	December	January
*Persons assisted	313	197	108
Escorts	1	0	1
Ambulance runs	1	4	2
Complaints handled	3	13	4
Open doors and windows	2	4	6
Totals	325	218	121

*Includes: Bedding issued; services rendered to others, and handling of emergency details in general.

Traffic Section

A total of seventeen classified escorts was handled during the month of January.

Traffic and Offense Statistics

These are presented in separate tables at the end of this departmental report. A comparison of Richland Offense Statistics with outside averages also is presented.

SECURITY

Operations Section

There were 329 Security Meetings held, attended by 6,017 employees.

Authorization cards issued: December 26, January - 160.

Re-investigation cases forwarded to date to the Atomic Energy Commission - 3,172.

Class "Q" clearances received on old employees this month	394
Class "Q" clearances received on old employees to date	1,033
Class "Q" clearances received on new employees this month	330
Class "Q" clearances received on new employees to date	2,348
Class "Q" clearances received on both old and new employees since 2/17/47	3,381
Formal Class "S" clearances awaiting change to Class "Q"	6
Interim Class "S" clearances awaiting change to Class "Q"	324
Formal Class "Q" clearances awaiting change to Class "Q"	301

[redacted]

G. E. Security Bulletin No. 17, entitled "Target Number Two", and G. E. Security Bulletin No. 18, entitled "Security Slogan Contest" were issued January 5 and 12, respectively.

One Security Poster on the re-dedication of ourselves to Security, signed by D. H. Lauder and C. Shugg, was posted throughout the project, including Richland Village and project, January 5, 1948.

Statistical Summary of Outstanding Area Badges

Area	A	B	C	Total	Area	A	B	C	Total
100-B	439	1154	663	2256	100-B	437	1210	655	2302
100-D	708	1037	715	2460	100-D	725	1137	732	2534
100-F	728	964	700	2392	100-F	756	996	695	2447
200-E	911	1164	599	2674*	200-E	893	1204	600	2697*
200-W	996	1253	625	2874	200-W	1027	1327	594	2948
200-N	61	701	188	950	200-N	65	708	185	958
300	1211	1017	556	2784	300	1267	1216	539	3022
100-DR	722	185	-	907	100-DR	1640	33	-	1677
300-C	19	-	-	19	300-C	29	99	-	123
241-TX	238	176	-	414	241-TX	555	37	-	592

*Includes 30 "A" badges at Riverland Yards.

Visitors or Temporary Badges

Area	December	January
100-B	14	47
100-D	28	49
100-F	16	45
200-E	113	125
200-W	42	94
200-N	5	5
300	100	73
100-DR	12	33
300-C	--	9
241-TX	16	98
	346	578

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	14	138
Total forwarded to A.E.C. to date	108	1143
Total cleared for restricted data this month	53 (new & old)	241
Total cleared for restricted data last month	29 "	83

Number and type of clearance granted by the AEC this month to vendors:

Emergency "Q"	18
Administrative "Q"	3
Formal "Q"	238
Formal "P"	342

Total number of individual investigations conducted by the Security Section for the purpose of obtaining Emergency Clearance for vendors and consultants: December - 71, January - 10.

One Emergency Clearance was requested for General Electric personnel this month.
Emergency Clearances requested for General Electric personnel to date - 42.
Emergency Clearance received on General Electric personnel to date - 1.
Emergency Clearances received on General Electric personnel to date - 14.

Construction Section

There were 205 Security Meetings held, attended by 4,078 sub-contractor employees.

	December	January	Total to Date
Hires	2,096	3,426	13,652
Terminations	1,126	1,961	4,560

The number on sub-contractor and vendor payrolls as of January 31, 1948 - 9,072.

Summary of Clearances Requested and Received

	Number
Formal "P" clearances requested this month	6
Formal "P" clearances received this month	393
Formal "P" clearances requested to date	13
Formal "P" clearances received to date	675
"P" clearances requested this month	1,849
Formal "Q" clearances requested to date	2,584
Formal "Q" clearances received to date	174
Administrative "Q" clearances requested to date	25
Administrative "Q" clearances received to date	25
Emergency clearances requested to date	12
Emergency clearances received to date	1

Lost Badges:

December	48
January	59
Total to date	199

1208130

22

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

January - 1948

Motor Vehicle Accidents

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Plant	5	2	0	0	0	0	2	0
Richland	16	20	0	0	0	0	1	7
North Richland	8	14	0	0	0	0	3	1
Totals	29	36	0	0	0	0	6	8

Accident Causes

	Negligent Driving		Failure to Yield Right-of-Way		Reckless & Drunken Driving		Other Causes	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Plant	4	1	0	0	0	0	1	1
Richland	6	16	6	5	1	1	3	2
North Richland	5	17	1	0	0	1	2	1
Totals	15	34	7	5	1	2	6	4

Plant Warning Traffic Tickets Issued

	Speeding		"Stop" Sign		Parking		Improper License		Defective Equip.		Other Violations		Totals	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richland	49	22	18	10	271	415	3	1	54	37	5	6	400	491
N. Rich.	3	14	2	3	552	644	4	3	15	31	0	1	576	716
Totals	52	36	20	13	823	1059	7	4	69	68	5	7	976	1207

Court Citation Traffic Tickets Issued

	Speeding		"Stop" Sign		Drunken Driving		Reckless Driving		Neg. Driving		Other Violations		Totals	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Plant	1	5	0	0	0	0	0	0	1	0	0	0	2	11
Richland	28	28	11	9	0	1	3	0	6	9	12	10	60	57
N. Rich.	4	20	2	3	0	0	1	0	5	1	2	7	14	31
Totals	33	53	13	18	0	1	4	0	12	10	14	17	76	99

Traffic Volume: Count taken on 1-8-48, at Yakima River Bridge on George Washington Way - 24 hour period - 9,892 Cars.
Count taken on 1-9-48, north of Yakima R. Bridge on Geo. Washington Way - 24 hour period - 10,173 Cars.

Note: December record is for Month of December, 1947.

1208131

138

PATROL DIVISION - RICHLAND OFFENSES

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses December	Actual Offenses January	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	3	0	2	3 (a)	1	2	4
Attempted Suicide	0	0	0	0	0	0	0
Burglary-Breaking and/or Entering	0	0	0	0	0	0	0
Robbery	0	0	1	0	0	0	0
Larceny-Theft (except auto & bike):							
(a) - $50.00 and over value	6	1	2	5	0	1	1
(b) - Under $50.00 value	20	1	24	19 (b)	1	1	3
Auto Theft	2	0	1	2 (c)	3	0	1
Bicycle Theft	13	1	2	12	0	0	(u)
Carrying Concealed Weapon	0	0	0	0	0	0	0
Destruction of Government Property	3	0	2	3 (d)	0	2	5
Destruction of Personal Property	2	0	1	2 (e)	0	0	3
Destruction of School Property	0	0	0	0	0	0	0
Disorderly Conduct	3	0	1	3	0	2	2
Drunkenness	9	0	7	9	9	0	9
Embezzelment and Fraud	0	0	1	0	0	0	0
Forgery	4	0	0	4	4	0	1
Gambling	0	0	0	0	0	0	0
Missing Persons	0	0	2	0	0	0	0
Offense against family & children	1	0	1	1	0	1	1
Prowlers	2	0	0	2 (f)	0	2	4
Rape	0	0	0	0	0	0	0
Sex offenses	2	0	1	2	0	2	2
Vagrancy	2	0	1	2	2	0	2
Violation State Game Laws	1	0	0	1 (g)	0	1	3
Violation State Liquor Laws	0	0	0	0	0	0	0
Miscellaneous	2	1	4	1	0	1	1
Juveniles (other than reported above)							
Disorderly Conduct	4	0	1	4 (h)	0	3	6
	79	4	54	75	20	18	48

(a) - One of the offenses was perpetrated by two juveniles, of ages 18 years.
(c) - One of the offenses was perpetrated by a person, age 23 years.
(e) - The three offenses cleared by arrest were perpetrated by same person cleared in item 'b'.
(d) - Two of the offenses were perpetrated by five juveniles of ages 14, 16 and 17 years.
(e) - [illegible] of the offenses was perpetrated by same two juveniles, ages 14 and 16 years, cleared in item 'd'.

PATROL DIVISION - RICHLAND OFFENSES

(Continued)

(f) - The two offenses were perpetrated by four juveniles of ages 13, 15 and 16 years.
(g) - The one offense was perpetrated by three juveniles of ages 11 and 15 years.
(H) - Three of the offenses were perpetrated by six juveniles of ages 6, 8, 14, 16 and 17 years. Juveniles of ages 14 and 16 years are same juveniles as cleared in items 'd' and 'e'.
(u) - Represents 'unknown'.

Value of property recovered during month of January was $568.60 (includes nine bicycles).

PATROL DIVISION - NORTH RICHLAND OFFENSES

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses December	Actual Offenses January	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved
Assault	0	0	3	0	0	0	0
Attempted Suicide	0	0	0	0	0	0	0
Burglary-breaking and/or Entering	3	1	2	2	0	0	(u)
Larceny-Theft (except auto & Bike)							
(a) $50.00 and over value	10	0	7	10 (a)	0	3 (a)	3 (a)
(b) Under $50.00 value	9	0	26	9	0	0	(u)
Auto Theft	2	0	3	2	0	0	(u)
Bicycle and Motor Bike Theft	0	0	0	0	0	0	0
Carrying Concealed Weapon	0	0	1	0	0	0	0
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	2	0	0	0	0
Drunkenness	14	0	13	14	14	0	14
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 and 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	1	0	1	1	0	0	(u)
Sex Offenses	0	0	1	0	0	0	0
Vagrancy	4	0	3	4	4	0	4
Violation State Game Laws	0	0	0	0	0	0	0
Violation State Liquor Laws	0	0	0	0	0	0	0
Miscellaneous	3 (b)	2 (b)	8	1	0	1	1
Juveniles (other than reported above)							
Disorderly Conduct	0	0	0	0	0	0	0
	47	3	71	44	18	5	24 (c)

(a) - One Grand Larceny offense, not previously reported, is shown on this report under "Actual Offense", "Cleared by other Action" and "Perpetrators Involved".
(b) - One Miscellaneous Actual Offense reported on December, 1947 report is changed to "Unfounded".
(c) - Eleven of offenses cleared were perpetrated by colored males.
(U) - Represents Unknown.

Value of property recovered during the month of January, 1948 - $912.50.

PATROL DIVISION - COMPARISON CHART OF RICHLAND OFFENSES

Number of offens es known to police per 10,000 inhabitants in cities between 10,000 and 25,000 inhabitants:

Classification	Wash., Oregon & Calif. Six Months (Jan-June 1947)	Wash., Oregon & Calif. One Month Average	Richland Six Months (Jan-June 1947)	Richland December 1947	Richland January 1948
Murder	.688	.114	0	0	0
Robbery	19.57	3.26	0	.66	0
Aggravated Assault	11.23	1.87	.22	1.33	2.0
Burglary	114.53	19.09	1.66	0	0
Larceny	296.10	49.35	12.33	18.66	24.0
Auto Theft	57.73	9.62	.22	.66	1.33

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Classification	State of Washington Six Months (Jan-June 1947)	State of Washington One Month Average	Richland Six Months (Jan-June 1947)	Richland December 1947	Richland January 1948
Murder	.184	.30	0	0	0
Robbery	5.21	.85	0	.66	0
Aggravated Assault	1.62	.27	.22	1.33	2.0
Burglary	36.20	6.03	1.66	0	0
Larceny	91.39	15.23	12.33	18.66	24.0
Auto Theft	19.79	3.30	.22	.66	1.33

The portion of offenses committed by persons under the age of 25 years is shown by the following figures:

Classification	National Average (Jan-June 1947)	Richland Six Months (Jan-June 1947)	Richland December 1947	Richland January 1948
Robbery	56.1%	0	0	0
Burglary	61.0	30%	0	0
Larceny	46.0	19%	3%	28%
Auto Theft	74.1	33%	0	100%

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrest records is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

In Richland every delinquent juvenile is entered in the records.

PATROL DIVISION - COMPARISON CHART OF NORTH RICHLAND OFFENSES

Number of offenses known to police per 10,000 inhabitants in cities between 10,000 and 25,000 inhabitants:

Classification	Wash., Oregon, & Calif. Six Months (Jan-June 1947)	Wash., Oregon, & Calif. One Month Average	North Richland Six Months (Jan-June 1947)	North Richland Dec. 1747	North Richland Jan. 1948
Murder	.688	.114	0	0	0
Robbery	19.57	3.26	0	.66	.66
Aggravated Assault	11.25	1.87	0	2.0	0
Burglary	114.53	19 09	0	1.33	1.33
Larceny	296.10	49.35	0	22.0	12.66
Auto Theft	57.73	9.62	0	2.0	1.33

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts.

Classification	State of Washington Six Months (Jan-June 1947	State of Washington One Month Average	North Richland Six Months (Jan-June 1947	North Richland Dec. 1947	North Richland Jan. 1948
Murder	.134	.30	0	0	0
Robbery	5.11	.85	0	.66	.66
Aggravated Assault	1.62	.27	0	2.0	0
Burglary	36.20	6.03	0	1.33	1.33
Larceny	91.36	15.23	0	22.0	12.66
Autho Theft	19.79	3.30	0	2.0	1.33

The portion of offenses committed by persons under the age of 25 years is shown by the following figures:

Classification	National Average (Jan-June 1947)	North Richland Six Months (Jan-June 1947)	North Richland December 1947	North Richland January 1948
Robbery	56.1%	0	0	0
Burglary	61.0	0	0	0
Larceny	46.0	0	0	0
Autho Theft	74.1	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 youthful offenders."

In North Richland every delinquent juvenile is entered in the records.

[redacted]

DECLASSIFIED

[redacted]

REPORT OF VISITORS FOR PERIOD ENDING JANUARY 31, 1948

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
MEDICAL DEPARTMENT						
Visitors to this Works						
S. T. Cantril, Tumor Institute, Swedish Hospital, Seattle, Washington	Medical consultation	W. D. Norwood, P. A. Fuqua	1-22-48	1-23-48	X	
B. E. Keene, Brookhaven Laboratory, Upton, New York	Training school	M. L. Mickelson	1-16-48	Still Here	X	
C. F. Murphy, Brookhaven Laboratory, Upton, New York	Training School	M. L. Mickelson	1-16-48	Still Here	X	
Harriet Parson, Family Service Agency, St. Louis, Missouri	Welfare planning	R. R. Sachs	1-30-48	1-30-48		X
Visits to Other Installations						
J. W. Healy to: Argonne Laboratory, Chicago, Illinois	Information meeting on and lecture of laboratory design.	H. L. Hull	1-15-48	1-16-48	X	
H. M. Parker to: Argonne Laboratory, Chicago, Illinois	Information meeting and lecture	H. L. Hull	1-26-48	Still gone	X	

Memo - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
CONSTRUCTION DEPARTMENT						
Visitors to this Works						
G. P. Church E. I. du Pont de Nemours Wilmington, Delaware	Consultation on construction program	F. R. Creedon	1-19-48	1-23-48	X	
G. M. Read E. I. du Pont de Nemours Wilmington, Delaware	Consultation on construction program	F. R. Creedon	1-19-48	1-23-48	X	
R. C. Stanton E. I. du Pont de Nemours Wilmington, Delaware	Consultation on construction program	F. R. Creedon	1-19-48	1-23-48	X	
Visits to other Installations						
J. C. Rendant to: Bethlehem Steel Company Bethlehem, Pennsylvania	Inspect material	O. Johnson	1-1-48	Still gone		X
O. Magoohon to: J. H. Anderson Government Engineers Portland, Oregon	Inspect material at War Assets Administration	J. H. Anderson Mr. Hope	1-4-48	1-7-48		X
J. E. Wellnitz to: McCulloch & Sons Portland, Oregon	Inspection at vendor's shop.	Mr. McCulloch	1-6-48	1-7-48		X
B. K. Phillips to: General Casualty Company Seattle, Washington	Conferences on safety and labor relations with officials of Dept. of Labor and Industries.	Mr. Panella	1-11-48	1-14-48		X
University of Washington Seattle, Washington		J. A. Pringle				X
Seattle First National Bank Seattle, Washington		R. M. Smith				X
Peninsula House Movers - Bremerton, Wash.		T. O. Monroe				X
Dept. of Labor & Industries		Earl Anderson				X

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
R. J. Thibaut to: Cole Brothers Seattle, Washington Seattle Transit Company Seattle, Washington						
R. H. Burrell to: Bethlehem Steel Company Bethlehem, Pennsylvania Reed Machine Company Erie, Pennsylvania Standard Stoker Company Erie, Pennsylvania Baltimar Corporation Baltimore, Maryland Vermont Marble Company Proctor, Vermont Patch Wagner Rutland, Vermont Sheffield Corporation Dayton, Ohio Vinco Corporation Detroit, Michigan	Expedite steel to fabricators and check status of B block with fabricators.	O. Johnson L. Fine Mr. Fitts H. L. Chambers H. A. Collin R. Moore L. J. Mohlmeister Mr. Schonbachler	1-13-48	1-26-48		X X X X X X X X
W. Rea to: New Castle, Pennsylvania	Load out shop equipment as selected by Mr. Anderson	-	1-20-48	Still gone		X
A. E. Pitts to: Medford, Oregon	Supervise dismanteling of electrical distributing at Camp White.		1-26-48	Still gone		X
J. T. Wilson to: Bethlehem Steel Company Bethlehem, Pennsylvania	Inspect material	O. Johnson	12-18-47	1-10-48		X

Name Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
DESIGN DEPARTMENT						
Visits to Other Installations						
J. T. Stranix to: Giffels & Vallet, Inc. Detroit, Michigan	Disouss structural drawings for 105-DR	C. J. Steigleder	1-4-48	1-13-48	X	
J. Bonham to: Farragut Naval Training Station - Farragut, Ida.	Expedite removal of transformers to HW from NTS	E. B. Herron	1-5-48	Still gone		X
P. P. Smith to: U. S. Geological Survey Portland, Oregon	Conference with Gov't representatives	A. M. Piper	1-8-48	1-13-48		X
E. E. Coots to: General Electric Company Schoneotady, New York	Disouss engineering details in connection with equipment on order.	R. B. Wall T. R. Rhea	1-12-48	1-17-48	X	
C. H. Pilkey to: Argonne Laboratory Chicago, Illinois	Technical consultations and inspections	W. M. Manning	1-12-48	1-20-48	X	
Clinton Laboratory Oak Ridge, Tennessee		M. C. Leverett	1-13-48	1-14-48	X	
Carbide & Carbon Chemical Corp. Oak Ridge, Tennessee		C. E. Larson	1-14-48	1-16-48	X	
Kellex Corporation New York City, New York		H. H. Willis	1-15-48	1-16-48	X	
J. Gordon Turnbull, Inc. Cleveland, Ohio		S. Schmidt W. D. McArthur	1-16-48	1-23-48	X	
W. B. Webster to: Carbide and Carbon Chemical Corp. - Oak Ridge, Tenn.	Technical consultation and inspection	C. E. Larson	1-14-48	1-16-48	X	
G. M. Clifton to: General Electric Company Schenectady, New York	Disouss engineering details in connection with	R. B. Wall	1-12-48	1-17-48	X	

[redacted]

DECLASSIFIED

1208141

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassifi[redacted]
D. D. Streid to: Giffels & Vallet Detroit, Michigan	234-5 project discussion	R. F. Giffels	1-23-48	1-24-48	X	
G. W. Cochrane to: Scientific Laboratory Los Alamos, New Mexico.	Consultation and inspection of DP-West	E. R. Jette	1-28-48	1-30-48	X	
J. E. Gray to: Scientific Laboratory Los Alamos, New Mexico	Consultation and inspection of DP-West	E. R. Jette	1-28-48	1-30-48	X	
W. B. Webster to: Clinton Laboratory Oak Ridge, Tennessee	Technical consultation and inspection	M. C. Leverett	1-13-48	1-16-48	X	
Argonne Laboratory Chicago, Illinois		W. M. Manning	1-12-48	1-20-48	X	
R. M. Kennedy to: National Carbon Company Morganton, North Carolina	Inspection of equipment	G. H. Fancher	1-26-48	1-29-48	X	
Clinton Laboratory Oak Ridge, Tennessee		W. P. Miller R. W. Cook	1-24-48	1-24-48	X	
W. P. Ingalls to: Argonne Laboratory Chicago, Illinois	Technical consultation	H. Hull	1-12-48	1-19-48	X	
E. J. Burda to: Puget Sound Naval Shipyards Bremerton, Washington	Consultation on manufacture of gauges	O. Stiegle	1-16-48	1-17-48		X
W. J. Dowis to: Bonneville Power Adm. Portland, Oregon	Consultation with engineers about 230 KV transmission lines.	O. A. Demuth	1-18-48	1-20-48		X
E. P. Peabody to: Bonneville Power Adm. Portland, O[illegible]	Consultation with engineers about 230 KV [illegible]	O. A. Demuth	1-18-48	1-20-48		X

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
C. M. Burns to: General Electric Company Schnectady, New York	Technical consultation		1-26-48	Still Gone	X	
D. C. Fleischer to: Washington Iron Works Seattle, Washington	Consult with fabricators on tie straps	O. C. Nugent	1-28-48	1-29-48		X
L. H. Hildebrandt to: Washington Iron Works Seattle, Washington	Consult with fabricators on tie straps	O. C. Nugent	1-28-48	1-29-48		X
V. G. Blanchette to: Scientific Laboratory Los Alamos, New Mexico	Inspect electrical equipment	D. D. Littleton	12-27-47	1-3-48		X
C. A. Evans to: General Electric Company Schenectady, New York Naval Ordnance York, Pennsylvania	Technical consultation on work being performed by Naval Ordnance Plant	G. R. Rede	12-29-47	1-14-48	X	
S. W. Beekman to: Giffels & Vallet Detroit, Michigan	Return drawings and discuss a design question	C. J. Steigleder R. F. Giffels	12-29-47	1-11-48	X	
L. H. Hildebrandt to: Masonite Corporation Schenectady, New York Bethlehem Steel Company Bethlehem, Pennsylvania Balmar Corporation Baltimore, Maryland	Confer on B block program	R. M. Miller O. Johnson A. A. Murison	11-28-47	12-8-47		X X

DECLASSIFIED

1208143

Name - Organization	Purpose ov Visit	Person Contacted	Arrival	Departure	Restricted [illegible] Classified	Unclassi[redacted]
ELECTRICAL DEPARTMENT						
Visitors to this Works						
G. W. Garland Graybar Company Spokane, Washington	Commercial	H. A. Carlberg	1-14-48	1-14-48		X
O. A. Martin Graybar Company Seattle, Washington	Telephone business	H. A. Carlberg R. J. Willingham H. A. Remaly	1-14-48	1-16-48		X
F. M. Robertson Smith Brothers Vancouver, Washington	Discuss proposed contract work on transmission system	H. A. Carlberg	1-30-48	1-30-48		X
R. Brandon Smith Brothers Vancouver, Washington	Discuss proposed contract work on transmission system.	H. A. Carlberg	1-30-48	1-30-48		X
Visits to Other Installations						
G. E. Hall to: Farragut Supply Depot Farragut, Idaho	Material procurement	J. E. Benham	1-23-48	1-27-48		X
L. W. Peterson to: Farragut Supply Depot Farragut, Idaho	Material procurement	J. E. Benham	1-23-48	1-27-48		X
G. R. Weimer to: Farragut Supply Depot Farragut, Idaho	Material procurement	J. E. Benham	1-23-48	1-27-48		X
INSTRUMENT DEPARTMENT						
Visitors to this Works						
T. S. Gray Mass. Institute Technology	Discuss instrumentation [illegible] to HW and Brook-	H. D. Middel	1-8-48	1-14-48	X	

DECLASSIFIED

[redacted] 9E 1208144 [redacted]

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Unclassified
G. M. Muschamp Brown Instrument Company Philadelphia, Pennsylvania	Discuss development in process instrumentation	H. D. Middel	1-12-48	1-14-48	X	
W. P. Wills Brown Instrument Company Philadelphia, Pennsylvania	Discuss development in process instrumentation	H. D. Middel	1-12-48	1-14-48	X	
J. C. Menzon Brown Instrument Company Philadelphia, Pennsylvania	Discuss development in process instrumentation	H. D. Middel	1-12-48	1-14-48	X	
J. P. Jordan General Electric Company Syracuse, New York	Discuss radiation developments in instruments	H. D. Middel	1-12-48	1-14-48	X	
H. T. Sawyer Bailey Meter Company Seattle, Washington	Discuss 100 Area instrument specifications	H. D. Middel	1-28-48	1-30-48	X	
Visits to other Installations						
J. M. Holeman to: General Electric Company Schenectady, New York	Instrument consultation	N. F. Barnes	1-19-48	1-31-48	X	
Optical Contractors New York City, N. Y. and Rochester, New York	Spectrophotometer Service course	W. A. Holmwood	1-23-48	1-29-48		X
SERVICE DEPARTMENT						
Visits to other Installations						
T. B. Pugh to: Washington State College Pullman, Washington	Patrol training course		1-10-48	1-10-48		X
H. W. Streck to: Washington State College Pullman, Washington	Patrol training course		1-10-48	1-10-48		X

[redacted]

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Classified Data Classified	Unclassified
A. A. Layman to: Washington State College Pullman, Washington	Patrol training course		1-10-48	1-10-48		X
T. B. Farley to: National Carbon Company Morganton, North Carolina	Establish protection and security program for vendor	G. H. Fancher L. F. Perkins	1-28-48	1-31-48	X	
G. Raney to: National Carbon Company Morganton, North Carolina	Establish protection and security program for vendor	G. H. Fancher L. F. Perkins	1-28-48	Still gone	X	
TECHNICAL DEPARTMENT						
Visitors to this Works						
C. G. Suits Research Laboratory Schenectady, New York	Discuss administrative procedure	W. I. Patnode	1-7-48	1-8-48	X	
R. W. Larson Research Laboratory Schenectady, New York	Discuss administrative procedure	W. I. Patnode	1-7-48	1-8-48	X	
L. L. Ferguson Research Laboratory Schenectady, New York	Discuss administrative procedure	W. I. Patnode	1-26-48	1-30-48	X	
D. G. Reid Clinton Laboratory Oak Ridge, Tennessee	Inspect Redox installation	R. H. Beaton E. B. Montgomery	1-8-48	1-15-48	X	
H. T. Reid National Carbon Company Cleveland, Ohio	Consultation on graphite program	C.W.J. Wende E. B. Montgomery	1-8-48	1-10-48	X	
H. G. MacPherson National Carbon Company Cleveland, Ohio	Consultation on graphite program	C.W.J. Wende E. B. Montgomery	1-8-48	1-10-48	X	

[redacted]

[redacted]

[redacted]

DECLASSIFIED

1200845

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Unclassified
V. C. Hamister National Carbon Company Cleveland, Ohio	Consultation on graphite program	C.W.J. Wende E. B. Montgomery	1-8-48	1-10-48	X	
M. Studier Argonne Laboratory Chicago, Illinois	Set up equipment in special process	E. B. Montgomery	1-27-48	Still here	X	
E. K. Hyde Argonne Laboratory chicago, Illinois	Set up equipment in special process	E. B. Montgomery	1-27-48	Still here	X	
W. W. Harris K-25 at Carbide and Carbon Oak Ridge, Tennessee	Study radiochemical laboratory technique	R. E. Curtis	1-27-48	Still here	X	
F. S. Voss K-25 at Carbide and Carbon Oak Ridge, Tennessee	Study radiochemical laboratory technique	R. E. Curtis	1-27-48	Still here	X	
Visits to other Installations						
J. M. Frame to: Argonne Laboratory Chicago, Illinois	Technical consultation and inspection	W. M. Manning	1-12-48 1-19-48	1-13-48 1-20-48	X X	
Clinton Laboratory Oak Ridge, Tennessee		M. C. Leverett	1-13-48	1-17-48	X	
J. M. Frame to: Kellex Corporation New York City, New York	Technical consultation	H. H. Willis	1-15-48	1-16-48	X	
V. R. Cooper to: Argonne Laboratory Chicago, Illinois	Technical consultation	W. M. Manning	1-12-48	1-13-48	X	
Clinton Laboratory Oak Ridge, Tennessee		M. C. Leverett	1-13-48	1-17-48	X	

[redacted]

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassif.
H. H. Hubble to: Argonne Laboratory Chicago, Illinois Clinton Laboratory Oak Ridge, Tennessee	Technical consultation and inspection	W. M. Manning	1-12-48	1-13-48	X	
		M. C. Leverett	1-13-48	1-17-48	X	
J. O. Ludlow to: Argonne Laboratory Chicago, Illinois Clinton Laboratory Oak Ridge, Tennessee	Technical consultation and inspection	W. M. Manning	1-12-48	1-13-48	X	
		M. C. Leverett	1-13-48	1-17-48	X	
W. K. Woods to: Research Laboratory Schenectady, New York	Consultation regarding power pile development	Dr. Martinelli C. G. Suits	1-9-48	1-19-48	X	
R. E. Curtis to: Minneapolis, Minnesota Detroit, Michigan Flint, Michigan Ann Arbor, Michigan Urbana, Illinois Argonne Laboratory Chicago, Illinois	Recruitment of personnel		1-10-48	1-19-48		X
	Information meeting on laboratory design	J. Hull			X	
R. Ward to: TAPL, KAPL, SAPL Schenectady, New York	Attend metallurgical information meeting on uranium, called by AEC	J. P. Howe	1-13-48	1-20-48	X	
E. J. Rober to: Knolls Atomic Power Lab.	Discussion of KAPL Redox pilot plant program	J. Marsden	1-15-48	1-16-48	X	
D. W. Haught to: Argonne Laboratory Chicago, Illinois	AEC information meeting	H. Hull	1-15-48	1-16-48	X	

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Classified	Restricted Unclassified
R. H. Beaton to: Kellex Corporation New York City, New York	Technical consultation and inspection	H. H. Willis	1-15-48	1-16-48	X	
O. H. Greager to: Argonne Laboratory Chicago, Illinois	Technical consultation and inspection	W. M. Manning	1-19-48	1-20-48	X	
C. P. Cabell to: Spokane, Washington	Speak before Spokane section of AIEE		1-15-48	1-28-48		X
W. W. Marshall to: General Electric Company Schenectady, New York	Attend recording spectrophotometer Service Course and discuss analytical problems	J. Marsden	1-17-48	1-25-48	X	
R. B. Richards to: Argonne Laboratory Chicago, Illinois Research Laboratory Schenectady, New York	Technical consultation and inspection.	W. M. Manning J. Marsden	1-19-48 1-21-48	1-20-48 1-23-48	X X	
F. W. Albaugh to: Argonne Laboratory Chicago, Illinois Research Laboratory Schenectady, New York	Technical consultation and inspection	W. M. Manning J. Marsden	1-19-48 1-21-48	1-20-48 1-23-48	X X	
C. W. Botsford to: National Carbon Company Morganton, North Carolina	Observe special tests	V. C. Hamister	1-22-48	2-2-48	X	
P. E. Collins to: Scientific Laboratory Los Alamos, New Mexico	Consultation and inspection of DP-West	E. R. Jette	1-28-48	1-30-48	X	
R. E. Curtis to: Scientific Laboratory Los Alamos, New Mexico	Consultation and inspection on analytical laboratory design	E. R. Jette	1-25-48	1-31-48	X	

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Classified	Restricted Data Unclassified
C. E. Shafer to: Auburn, Washington	Consultation on oil reclamation at Northern Pacific RR oil reclamation laboratory.		1-28-48	1-30-48		X
S DEPARTMENT						
Visitors to this Works						
P. E. Church University of Washington Seattle, Washington	Consultation	D. E. Jenne	1-16-48	1-18-48	X	
Visits to Other Installations						
R. S. Boll to: Clinton Laboratory Oak Ridge, Tennessee	Technical consultation and inspection	M. C. Leverett	1-13-48	1-14-48	X	
R. S. Boll to: Kellex Corporation New York City, New York	Technical consultation and inspection	H. H. Willis	1-15-48	1-16-48	X	
Argonne Laboratory Chicago, Illinois		W. M. Manning	1-12-48	1-20-48	X	

Service Department

PROTECTION DIVISION
ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Central Files	27	27	-	-
General Division	297	305	8 (a)	
Patrol and Security	813	796	-	17 (b)
Safety & Fire Protection	245	246	1 (c)	___
Total	1382	1374	9	17

(a) 12 janitors were hired for work in 3000 Area Barracks due to expansion of North Richland.
1 Voluntary termination.
1 Termination due to investigation rejection.
1 Termination due to retirement.
1 Termination due to failure of employee to report for work after two weeks' unexplained absence.

(b) 1 Stenographer hired for additional work in Patrol.
7 Typists hired for additional work in Security.
1 Fingerprinter hired as a replacement in Security.
18 Voluntary terminations.
1 termination due to retirement.
7 Employees were granted transfers to other departments.

(c) 3 Firemen were hired for additional work due to expansion program.
1 Employee was granted transfer from another department.
3 Voluntary terminations.

MUNICIPAL ADMINISTRATION

GENERAL

In a conference attended by Messrs. Shaw and Fuller of the Atomic Energy Commission and Messrs. Richmond, Houston and Barnes of the General Electric Company, there was a discussion of the proposal on the part of Villagers, Inc., to operate certain commercial enterprises in Richland and North Richland with the profits to be used for community recreational and improvement projects. Pending the submission of further details, the representatives of the Atomic Energy Commission agreed in principle to the proposals, subject to the creation of organizational procedure and safeguards which would protect the interests of the community.

An additional meeting was held with representatives of the Post Office Department in conjunction with the operation of the Richland and the North Richland post offices. Certain revisions of previous operating proposals were requested by the postal inspector and the text of the revised operating agreements have been referred to the Atomic Energy Commission for confirmation with the Postal Department.

There was submitted to the Atomic Energy Commission recommendations on the establishment of policy relative to the allocation to community organizations of existing buildings on the project for relocation in Richland and renovation to suit their requirements.

The general layout of the proposed new Junior High School was reviewed and approved by the state school authorities and the local school board and the preparation of final detailed plans is now underway.

The policy was set by the Atomic Energy Commission relative to the conditions under which ferry service might be established between Richland and the eastern side of the Columbia River. It was set forth that permission to use a landing point on project territory would be granted to any reputable ferry service operator, who would agree to undertake the installation of the physical landing facilities necessary. Further, permission granted for designation of a landing point on the west side of the river would be applicable for the use of any number of operators who should desire to establish supplemental service either as competing operators or on a joint venture basis, subject to compliance with project regulations.

Effective January 5, the Northwest Greyhound Lines, Incorporated, initiated bus schedules running through Richland and North Richland.

Service Department

VILLAGE EXPANSION AND IMPROVEMENTS - RICHLAND

Informal conferences continued during the month with representatives of J. Gordon Turnbull and Associates relative to the various phases in the planning of Richland.

There were initiated Type A Work Authorities for an addition to the Richland Post Office and for a new lighted soft ball field to be located southeast of the commercial bus depot.

The Project Engineering Section is in the process of preparing the project proposal on the installation of traffic semaphore lights for Village use as recommended by the Village Safety Committee.

Installation of "NO PARKING ON THIS SIDE OF THE STREET" signs has been completed throughout the village.

Work on the construction of the additional parking lot scheduled for the triangular corner of Swift Boulevard and Stevens Drive has been delayed by the recent severe weather.

VILLAGE EXPANSION AND IMPROVEMENTS - NORTH RICHLAND

The temporary school in North Richland consisting of 12 hutments is in the final construction stage and is expected to be ready for occupancy by February 16.

DUST CONTROL AND LANDSCAPING

Planting continued during the month of January with the installation of approximately 50 plants around the commercial bus depot and the Richland Cafeteria. Several large trees were dug up and moved to the lawn area immediately in front of the Administration Building.

Protective fences were erected around recently planted shrubs at all Richland schools.

The recently planted street trees which were set in over the period extending from October to the present time were all given their first pruning during January.

Design work was initiated upon the new nursery, now necessary due to the eventual occupation of the old nursery area by new residential construction. The preliminary work at the new nursery site was started and the area was cleaned of weed growth and a limited amount of work done in preparing the soil.

Service Department

VILLAGE SAFETY COMMITTEE - RICHLAND

Action taken by the Village Safety Committee is set forth as follows:

Traffic Control

A. Announcement was made that the plans for additional bridge facilities immediately west of the present bridge across the Yakima have been completed and construction is scheduled to start as soon as certain matters relating to right-of-way are settled.

B. Recommended certain changes in the location of bus stops to eliminate present hazards to pedestrians and vehicles alike.

Fire Prevention

A. Recommended protective steps relative to the transport of flammable liquids through the village.

B. Recommended correction of a safety hazard in connection with the operation of oil heating units in the "U" and "V" type houses.

Health

A. Recommended the establishment of a specific location where village residents could dispose of excess trash between regularly scheduled residential pick-ups.

Accident Prevention

A. Recommended the stationing of uniformed firemen or patrolmen at exit points of halls, auditoriums and other public places where serious trouble might result from panic in case of fire or other catastrophe.

VILLAGE SAFETY COMMITTEE - NORTH RICHLAND

A. Recommended as a preventive measure that there be a weekly inspection of fuse boxes to prevent any extended period of overloading.

B. Recommended the removal of heavy equipment in those locations where there was hindrance of the movement of fire apparatus.

Service Department

COMMUNITY ACTIVITIES

North Richland's recreation buildings 182 and 192 were officially opened for operation January 27, 1948. Hours of operation are 6:00 P. M. to 11:00 P. M. weekdays and 10:00 A. M. to 11:00 P. M. Sundays and holidays. Arrangements were made to recondition the pool tables with which the above buildings have been equipped.

The Richland Public Library announced an expanded program of activity which included the elimination of all book rentals previously charged. As part of this expansion, approval was granted to Villagers, Inc., to relocate the Village Library by moving it to the existing office building 89-X and the Office to the existing Library Building 85-X.

On January 27, 1948, the Recreation Advisory Committee held its regular monthly meeting (Mr. H. E. Scott was appointed to replace Mr. H. E. Callahan and was elected Chairman. Rev. L. W. Dyson was selected to replace Rev. J. M. Grimsrud.) The Committee recommended that the following organizations be approved, namely: Seventh Day Adventists, Union Bible Study Class, National Association of Power Employes, Alcoholics Anonymous, and Woodcrafters. Those organizations recommended for approval on December 30, 1947, including the Technocrats, National Guard, Assembly of Christians, and the Marine Corps League, were approved by the Atomic Energy Commission Manager on January 20, 1948.

The Richland Kiwanians completed their Tiel, Holland, drive with a shipment of approximately 5 tons of canned goods donated by people of Richland. A sale of novelty articles, supplied by a Tiel manufacturer, netted $220.00 which was used to defray cost of packing and shipping.

Richland Post #71, American Legion, organized, under its sponsorship, a new Sea Scout Troop.

The Richland Yacht and Boat Club dock was moved from its location near the east end of Lee Boulevard to a new site approximately 300 feet north of the Government dock. Relocating of the dock was necessary to clear the area for new installations.

SCHOOLS

School enrollment in Richland as of January 31, 1948, was as follows:

Sacajawea Grade School	1,033	
Marcus Whitman Grade School	732	
Lewis & Clark Grade School	858	
Jefferson Grade School	419	
Total all grade schools		3,042
Columbia High School		735
Total all schools		3,827

This indicates a total enrollment increase since May 31, 1947, of 564 pupils, with 153 additional pupils at the high school and 411 at the grade schools. During the month there was a decrease in enrollment of 6 pupils in the high school and an increase in enrollment of 38 in the grade schools.

On January 31, 1948, there were 72 children enrolled in the Richland Nursery School with an average attendance of 47. There was no increase in enrollment during the month. On this date there were 15 children enrolled in the Extended Day Care program of the nursery with an average attendance for the month of 13. There was a decrease in enrollment of 3 children during the month.

Mr. Raymond Lamb was announced as the principal for the new North Richland school effective February 1, 1948.

In order to coordinate efforts to make pupils and staffs of Richland schools more health conscious and to further health and safety instructions in the curricula, health councils were formed in all village schools.

During the week of January 5, 1948, Lester Roberts, Red Cross Area Representative, gave a course in First Aid, Water Safety, and Accident Prevention to the teachers of Richland, Kennewick and Pasco schools.

For the second consecutive year, all of the Richland schools received a certificate of exceptional merit and were placed on the National Safety Council honor roll.

All school buildings and grounds were inspected by authorized representatives of the Health, Fire and Safety Departments, and Community Activities Division.

The school Construction Completion Report indicated the following progress:

On the Jefferson Grade School classroom addition, all foundation walls are complete, outside walls 75% complete, inside partitions 25% complete. The entire project is scheduled for completion April 5, 1948.

The Columbia High School addition, scheduled for completion July 1, 1948, will be completed as per schedule, unless material shortages develop.

The interior of the North Richland Grade School has been completed. Painting and floor maintenance is over 50% completed. Safe, blackboards, shelving, cabinets, classroom bells, fire alarm system are complete and the plumbing 80% complete.

CHURCHES

The Atomic Energy Commission announced on January 8, 1948, that government-owned land may be used as sites for construction of churches and church schools. A study of available church sites is now being made by J. Gordon Turnbull & Associates, based upon material supplied by the Community Activities Division.

Reverend Paul Hamlin, four years minister of the Charleston Baptist Church of Bremerton, was announced as the new pastor of the South Side United Protestant Church, effective January 29, 1948.

Reverend H. A. Zimmerman was formally announced as the new pastor of the Mission Baptist Church on January 5, 1948.

The Richland Redeemer Lutheran Church sponsored a public showing of "Messenger of Peace", a 2-hour feature picture on January 30, 1948, in the Columbia High School auditorium.

All church buildings and grounds were inspected by authorized representatives of the Fire and Safety Departments and the Community Activities Division.

COMMUNITY FACILITIES PERSONNEL

The number of full time paid employees employed by the Village Schools, churches and organizations as of January 31, 1948, is set forth as follows:

Schools	222
Churches	24
Community Organizations	70
Total	316

MAJOR ACTIVITIES DURING MONTH

January	9	Treble Clef Concert	Columbia High School
"	13	Harlem Globetrotters	Columbia High School
"	16-17	Meistersingers Concert	Columbia High School
"	31	House of David Basketball Team	Columbia High School
"	31	Richland Symphony Orchestra Concert	Columbia High School

[redacted]

Service Department

ORGANIZATION AND PERSONNEL

Number of Employees on payroll:	January
Beginning of month	14
End of month	14
No change	0

[redacted]

Service Department

REALTY DIVISION

GENERAL

The Realty Division has as its general responsibility the landlord relationships involving assignment and leasing of houses, procurement and performance of commercial facilities and village engineering in connection with the expansion program in the Village. Also, the operation of the camp at North Richland is the responsibility of this Division, as well as the operation of Columbia Camp.

PERSONNEL

Additional personnel acquired during the month of January, 1948, is as follows:

1 Junior Clerk
2 Stenographers
1 Office Helper

The total personnel as of January 31, 1948, is as follows:

25 Exempt Personnel
73 Weekly Personnel
98 Total

The following report is divided into four parts: Housing, Commercial Facilities, Village Engineering and North Richland Housing activities.

HOUSING

Personnel

The number of employees in the Richland Housing Section as of January 31, 1948, totals 29.

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Pre-Cuts	Prefabs	Apts.	Tract	Total
Operations	2268	19	1185	9	36	3517
Facilities	118	-	109	-	5	232
Government	106	1	41	1	20	169
Kellex	-	-	4	-	-	4
Atkinson & Jones	1	-	1	-	-	2
Graysport Construction Co.	-	-	-	-	1	1
Kern & Kibbe	-	-	-	-	1	1
Total Occupied Houses	2493	20	*1340	10	**63	3926

1208158

Service Department

	Conventional	Pre-Cuts	Prefab	Apts.	Tract	Total
Houses utilized for special purposes	-	-	-	-	1	1
Houses assigned - (leases written)	1	7	2	-	-	10
Houses Assigned - Awaiting Tenants	6	2	12	-	-	20
Government Houses - Unassigned	-	-	-	-	**44	44
Total Houses	2500	29	1354	10	108	4001

* Total includes 10 prefabs and 12 hutments taken over at the Columbia Camp.

** Occupancy figure includes 4 houses occupied by Bonnevillo Power in Priest Rapids and White Bluffs.

*** This includes Tract Houses boarded up for salvage.

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional type	2494	12	13	2493	Minus 1
Pre-Cut	4	16	-	20	Plus 16
Prefabricated	1335	28	23	1340	Plus 5
Apartments	10	1	1	10	None
Tract	61	2	-	63	Plus 2
Total	3904	59	37	3926	Plus 22

Dormitories

		Occupants	Vacancies	Total Beds
Men - Occupied	14	*505	**53	558
Men - Unoccupied	-	-	-	-
Women - Occupied	12	*488	**27	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 men's dormitory for two G. E. employees and 11 beds added in the girl's 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.

*** Potential Occupancy 28 dormitories: 14 Men's; 14 Women's.

1206159

The eight single beds that were assigned to single rooms in Dormitories M-7 and M-8 to accommodate the Kellex Corporation have been recalled.

Dormitory M-9 was turned over to the Kellex Corporation on January 2, 1948, and will house their personnel only.

Dormitory M-12 was turned over to the F. B. I. on January 16, 1948, and will house their personnel only. Rooms number 8, 9, 10, 11, 12, 13, 14, 15, 16 and 17 on the lower floor will be used for office space.

On January 7, 1948, all occupants of W-15 were notified that it would be necessary for them to move to either Dormitories M-10 or M-11 by Sunday, January 11, 1948. Transportation was furnished for the moving of personal effects on Saturday, January 10, 1948, between 8:00 AM and 4:30 PM.

Dormitory W-15 was renovated and opened for women on January 12, 1948.

Permanent guests living at the Transient Quarters on dormitory rates were notified Thursday, January 22, 1948, that they must vacate their rooms at the Transient Quarters and move to single rooms in dormitories M-13, M-14 and part of M-11 by February 1, 1948, or pay regular Transient Quarter rates. The Realty Office was open Friday, January 23rd, Thursday, January 29th and Friday, January 30th, until 8:00 PM to accommodate those persons desiring to move. As of Saturday, January 31, 1948, eighty (80) had transferred to the dormitories and the remaining twelve (12) had not contacted this office.

Report on Hutments, Pre-cuts and Tract House

Seven hutments at Columbia Camp have been leased. The remaining five are in renovation and will be leased upon completion.

Seventeen (17) pre-cuts were released to this office during January, 13 of which were "V" type and 4 "U" type. Eight (8) of these pre-cuts were assigned to persons on the master list, three were moves and six were assigned by Management.

Tract House K-764 was leased to the Graysport Construction Company to be used as an office. Lease date was January 27, 1948. Rental, utility rate only, $10.00 per month.

COMMERCIAL FACILITIES

Personnel

The number of employees in the Commercial Facilities Section as of January 31, 1948, totals 19.

Contracts and Negotiations

No formal agreements were entered into during the month of January.

Invitations to bid were sent out on the following prospective facilities:

Cafe - Richland proper.
Infants' and Childrens' Apparel Shop - Richland proper.
Theater - North Richland.
Ice Delivery Service - North Richland.
Propane-Butane Gas Dispensing Service - North Richland.

Inventory and Property

The annual 1948 inventories of Government equipment at the following locations were completed:

C. C. Anderson Stores
Veterans Administration
Drug Store "B" - Pennywise
Ganzel's Barber Shop
Siler's Beauty Salon
Binyon Optometrists
Diamond 5¢ to $1 Stores, Inc.
Klopfensteins, Inc.
Railway Express

Requests for Establishment of Businesses in Village

A number of individuals expressed a desire, during the month, to establish and operate businesses in the Village. The types of establishments desired are shown in the following list:

Alteration Shop
Automobile Agency
Automotive Supply Store
Bakery
Ballroom
Barber Shop
Beauty Salon
Bulk Ice Cream Store
Complete Auto Camp
Confectionery and lunch
Cycle and toy shop
Delicatessen
Department Store
Doughnut Shop
Drug Store
Flower shop and landscape service
Food store and meat market
Foot clinic
Fountain and short-order restaurant
Furniture and Appliance store
Fur repair, cleaning and tailoring
Garbage Disposal Service
Gift Shop
Goodyear Tire and Accessory Store
Hardware Store
Hotel
Ice Delivery with swimming pool or ice rink
Infants' and Childrens' Store
Jewelry store
Laundry and dry cleaning
Luggage and leather goods store
Machinist repair shop
Magazine, confection and tobacco concession - North Richland
Men's Clothing Store
Men's Work Clothing
Mixer shop -- beer, wine and mixers

Plumbing and Heating Shop
Propane Gas Station
PX
Recreation Hall - North Richland
Restaurant
Roller Skating Rink
Self-service Laundry
Service Station and Garage
Shoe Repair Shop
Shoe Store
Motor winding shop
Small Animal Hospital & Veterinary
Sporting Goods Store
Super-service station
Surplus goods and general clothing store
Tavern
Taxi Service
Theater
Trailer Coach Sales Lot
Transfer and Storage Business
Watchmaking shop

Written permission was granted to eleven Village tenants to conduct the following part-time businesses in their homes:

Prepare 1947 Federal Income Tax Returns
Represent the Pacific National Life Assurance Company
Represent the Mutual Benefit Health & Accident Ass'n. and the United Benefit Life Insurance Company of Omaha
Machine Shop in the home
Take orders for shoes for the Mason Shoe Company
Make appointments for the Finecraft Studios of Portland
Make telephone appointments for a Kennewick realtor
Sale of the Hunter Screwdrivers and Brad-pushers
Sale of Avon products (2)
Represent Northwestern Insurance Company

Written permission was granted nine individuals living outside of Richland to contact Village tenants, on an appointment basis, for the following business matters:

Pick-up laundry, dry cleaning and dyeing work in Richland (2)
Take orders for books for Charles Scribner & Sons
Represent the Mutual Benefit Health & Accident Assn. and the United Benefit Life Insurance Company of Omaha
Take orders for tailor made clothing (4)
Represent the Nobility Plate Division of Empire Crafts Corporation, Newark, N. Y.

Commercial Facilities

The following figures indicate trends in commercial activities as related to various basic items:

	December	January
Cafeteria Meal Customers (Progressive)	96,785	102,545
Per cent of room-day occupancy - Transient Qts.	97.14%	98.01%
Gallons of ice cream sold	7,418.8	8,700
Gallons of milk & cream sold (Carnation)	65,016	72,710
Darigold milk deliveries (wholesale)	10,485	8,625
Theater Customer Count	49,616	48,998

1208162

Service Department

	December	January
Cases of soft drinks sold	6,565	6,844
Gallons of gasoline sold	186,814	188,768

Total number of commercial facility employees, full and part time, as of January 31, 1948, 865.

Approval was granted Garmo's Bakery to install outside neon signs and chrome meat hooks at their expense.

Ganzel's Barber Shop and the Richland Beauty Salon were granted permission to install outside neon signs at their expense.

The Greyhound Post Houses have provided chrome dining tables and chairs at their expense, replacing former wood chairs and tables.

Approval has been granted the Recreation Hall to do remodeling work at the fountain lunch counter, at their expense.

Richland Motor Company was given approval to install, at their expense, flood lights and neon signs for the used car area.

The interior painting program is progressing with work currently being done at Progressive Cafeteria and the Transient Quarters.

Parking regulation signs have been installed adjacent to Garmo's Food Store.

A work order was issued to reset main doors at Penny Wise Drug Store to conform to Fire and Safety regulations.

Refrigeration coils in the Reach-In boxes at Progressive Cafeteria are being revised to provide adequate refrigeration.

Approval has been granted the Village Food Store to install new refrigerated butcher case, at their expense.

Commercial Facilities - North Richland

Following figures indicate volume of business in Cafeteria #1:

	December	January
Meal Customers	125,284	132,649
Average Meal Check - Breakfast	.45	.45
Average Meal Check - Lunch	.57	.57
Average Meal Check - Supper	.60	.60
Average daily sales of box lunches	571(Sun.excluded)	494(Sun.ex.)

1208163

Service Department

Following figures indicate volume of business in Cafeteria #2:

	December	January
Meal Customers	14,691	67,045
Average Meal Check - Breakfast	.50	.51
Average Meal Check - Lunch	.58	.60
Average Meal Check - Supper	.65	.65
Average daily sales of box lunches	197(Sun.Excluded)	524(Sun.exc.)

Columbia Camp cafeteria served 7,780 meals during the month.

Four of the six lines of service are now in operation in Cafeteria #2. The remaining two lines of service will be placed in operation when required.

Mickey's Shoe Renewing pick-up station served sixty-four customers during the entire month.

The Richland Laundry and Dry Cleaning facility served approximately 525 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 1,600 people each pay day (Friday evenings) and a total of approximately 8,000 workers during the month.

Authorization was given to Canteen Food Service, Inc., for the advancing of their prices on the following items:

Combination plate luncheon advanced .10¢
Combination plate supper advanced .10¢
Two eggs any style advanced .05¢
Combination plate Sunday dinner was advanced to $1.00

Canteen Food Service, Inc., had a total of 337 employees on their payroll as of January 31, 1948.

VILLAGE ENGINEERING

Personnel

The number of employees in the Village Engineering Section as of January 31, 1948, totals 17.

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 Project. Contacts with members of Construction Group were continued relative to Richland and North Richland expansion problems.

Service Department

Richland Tenant Service

Richland Tenant Service and Village Maintenance work order and progress report is as follows:

	Incomplete 1-1-48	Issued During January	Incomplete 1-30-48	Issued Prev. Month
Patrol Main. & Elec.	1676	(3864)	1741	(3943)
Regular work orders	848	(485)	859	(435)
Patrol (Transportation)	303	(0)	65	(517)
Back Charge orders	57	(96)	35	(137)

Tabulation of House Renovations by types for the Month

Tract	A	B	D	E	F	G	H	L	Prefab	Apts.	Hutments	Total
0	4	3	0	0	0	0	2	0	11	1	4	25

During the month, Project forces painted the interiors of 108 conventional type houses and 10 prefab houses.

During the month paint was distributed to tenants as follows:

Kemtone	166 gallons
Enamel	98.75 gallons
Varnish	55.00 quarts

Home Fire Inspection reports for the month of January amounted to 293 as reported by Capt. Pigg, Fire Marshall. Capt. Pigg reports a limited amount of inspections will be performed next month due to special assignment of inspectors to 300 Area.

Items of Interest:

1. Tenant request for installation of rear doors in three bed room prefabs amount to 10 to date. Three installations are complete.

2. Sink linoleum repair work orders outstanding are decreasing steadily and to date amount to 405 incomplete as compared with 470 outstanding during the previous month. Daily requests average seven each day.

3. Requests for bath room painting outstanding amount to 39 for the month.

4. Inspections being made daily on alteration permits issued for basement excavations, etc., reveal that tenants in general are co-operating and complying with standard instructions as furnished by Village Engineering. If it is noted that alterations are sub-standard, tenants are notified of their responsibilities and informed to correct alterations to meet standard specifications before final approval will be given.

1298165

8

Service Department

Alteration permits issued to tenants during the month of January amounted to 94 as compared to 78 issued during December. 53 basement excavation requests were received during January.

Permits issued during January consist of the following:

Basement Excavations	53
Installation of air conditioners	13
Partial Basement Excavations	4
Sanding of Floors	9
Installation of room in basement	3
Construction of Trellis	1
Installation of electrical receptacle-basement	1
Installation of automatic washer	5
Construction of shelves in basement	1
Installation of rear door in prefab	2
Installation of awnings and valance above window	1
Installation of thermostatic control-furnance	1

Furniture repair is increasing steadily in output and during the course of the month deliveries to homes in exchange for damaged furniture was as follows:

63 XLA & LA Davenos	9 Prefab Folding chairs
42 KD Rockers	3 FI Tables
3 TA Refrigerators (Restricted Units)	13 Double Prefab Mattresses
11 CA Mattresses	8 Single Prefab Mattresses
15 CC Mattresses	7 Double Prefab Beds
103 Miscellaneous Chairs-dining room cacasional, etc.	13 Single Prefab Beds

Total 290

Furniture repaired by outside contract and returned during the month was as follows:

20 Double Prefab Mattresses	15 KD Rockers
100 Single Prefab Mattresses	15 XLA Davenos

Activities

Thirty-eight "U" and "V" type houses have been accepted to date. The following items are still missing from the houses [illegible]

Service Department

The construction of Germo's Bakery addition is complete except for minor finishing details after installation of equipment and fixtures. Additional wiring capacity is being installed for ovens and steam boiler.

Drawings and specifications for a proposed addition to the Thrifty Drug have been submitted to AEC for review.

Construction of Campbell's frozen food lockers is proceeding slowly because of weather difficulties affecting masonry and concrete. Concrete block walls are now in process of erection and locker section floor slab has been poured. Field inspections are being made and field changes noted.

Drawings providing for additional pump capacity at the Associated Gas Station were received and recommendations forwarded to the distributor. Approval has been withheld pending receipt of additional information.

The drawings and specifications submitted by the Design Department covering proposed furniture store and bakery were reviewed.

A steam hot water booster for the glass washing machines has been installed at the Progressive Cafeteria.

Purity tests conducted by Public Health on new wells for Tract Houses L-903 and K-772 indicate acceptability.

The new air conditioning system is being installed in the Richland Theater.

Suggestion Committee recommendations were investigated and findings submitted to the Committee Secretary.

A total of 14 back charge and 5 high spot estimates were made during the month.

Remodeling work has started on Tract House L-898, converting it from a one bed room to a two bed room house.

Started work on K-787 to bring it up to "C" standard as per our Tract House Study Recommendations.

Prepared estimates and plans on Tract House L-859.

Drew necessary plans and expedited remodeling of 92-X for conversion to Liquor Store.

COLUMBIA CAMP

General

We have been following the regular routine Maintenance and necessary Patrol work to take care of all essential work requests. C. D. Rankin

is also assisting the Housing Office in allocating beds in the barracks.

NORTH RICHLAND

General

The over-all construction program has been followed 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.

Utilities

The water supply is no longer critical in North Richland. The 24 inch line from Richland, with the reservoir, high tank, etc., should be in operation by February 13 and the water grid is well ahead of general construction in the camp.

Boiler Plant #3 (8-100 h.p. boilers) is complete, with minor exceptions, and is tied into the system.

Electricity is out of the critical stage now, and it seems that future requirements have been covered by existing plans.

Activities

Plans were worked out and tracings prepared for a temporary barber shop on the second floor of the Recreation Hall. Field work was started.

Prepared additional sketches for alteration work in Cafeteria Mess Hall #1 to comply with Public Health and to provide more efficient operation.

Checked and expedited plans and construction of the trailer camp office.

Made recommendations for revisions to Design Department to eliminate many of the changes that were necessary in Cafeteria #2.

Made study of floors in Cafeteria #2 and assisted in preparing recommended changes in process of covering with Armstrong linoleum.

Assisted in working out paint schedule and color scheme for North Richland.

Service Department

Prepared several estimates as to cost of trailer camp canopy; weatherstripping windows and recovering floors in Cafeteria #2.

North Richland Tenant Service

The Work Requests outlined below cover essential maintenance:

Incomplete 1-1-48	Issued During January	Incomplete 2-1-48	Issued Previous Month
73	375	286	367

Routine maintenance is now being handled in the manner of blanket orders, and maintenance crews' efforts are supplemented by craftsmen from construction when they can be spared for a few hours or days. Electrical work is more nearly current than it has been since the camp started. Plumbing and steamfitting schedules are lagging.

NORTH RICHLAND HOUSING ACTIVITIES

Personnel

The number of employees in the North Richland Housing Section as of January 31, 1948, totals 30.

Barracks Occupancy

The month ended with approximately 5,000 beds occupied in North Richland, and 250 in Columbia Camp. This is an increase of about one-third of occupancy over December 31, 1947. Two additional wings of one-story barracks were occupied by colored employees, bringing the total of four and one-half barracks and the same number of washrooms, maintaining the standard ratio of washrooms to occupants. The number of wings of one story barracks available for occupancy increased from 82 to 96, and 12 two-story (Pasco type) barracks were occupied, averaging 45 beds each. Three barracks of this type were temporarily loaned, one as a Post Office and two as Recreation Halls, until the permanent buildings for these facilities are completed.

During January Columbia Camp came to be used largely as an over-flow barracks to which new tenants are temporarily assigned until accommodations will permit them to be assigned permanent rooms in North Richland. The expected Bonneville Power Administration crew did not move into hutments #8 and #9 at Columbia Camp, and we were informed that their arrival had been postponed indefinitely.

Trailer Camp

Erection and equipment of the first group of bath houses was started at the South end of the Trailer Camp. The installation of water and sewer pipes and electric lines progressed to a point which indicated that a unit of the camp could be opened by the middle of February. A mobile Trailer Camp Office was fabricated and placed at the location selected for it at the corner of George Washington Way and Eighth Street.

Houses

Foundations and utility connections were installed to receive the first group of prefabricated houses from Bremerton, Washington.

Warehouse

Delay in connection of steam pipes and installation of blowers prohibited completion of Warehouse #52 at the scheduled time. This warehouse is to be used as the Room and Bedroll office.

Permanent Office

The building which is to be permanently occupied by this division, Security and other operating groups was moved onto its foundations during January and remodeling was well under way at the end of the month. This office supplied the Engineers with a floor plan of our office space requirements.

Service Department

Organization and Personnel

Number of employees on payroll:	January
Beginning of month	96
End of month	98
Net increase	2

Increase in personnel in the total of two can be attributed to hiring of additional employees for operation of the expanding duties in connection with the North Richland Realty Office and trailer camp. These two new employees are Junior Clerks.

[redacted]

TRANSPORTATION DEPARTMENT

MONTHLY REPORT

DECLASSIFIED

January 1948

GENERAL

Absenteeism in the Department for the month of January was 1.54%. This was an increase of .31% over the month of December.

Following is the January Work Order Summary for the Mechanical and Labor Division.

Groups	Work on hand December 25 No. of Orders	Work on hand December 25 Estimated Man Days	Work Completed January 25 No. of Orders	Work Completed January 25 Estimated Man Days	Work on hand No. of Orders	Work on hand Estimated Man Days
All Area Labor and Repair	126	13,360.6	250	3,233.7	126	12,051.1
700-1100 and Railroad Labor	253	10,693.2	308	6,202.1	221	9,066.9
Riverland Railroad Repair	8	11.3	15	204.7	5	10.2
700-1100 Repair	285	693.5	398	3,559.2	256	430.6
Total Labor and Repair	672	24,758.6	971	13,199.7	610	21,578.8

ORGANIZATION AND PERSONNEL

F. E. McCarty, Labor Foreman, was retired by the Pension Board effective January 30, 1948.

Force of the Transportation Department was decreased by eight and the total force as of January 31, 1948, was 887.

Force of Morrison-Knudsen, Track Maintenance Subcontractor, was decreased by four and the total force as of January 31, 1948, was 97.

OPERATIONAL ACTIVITIES

1. Railroad Operations

Railroad operations continued on an above normal basis with all train movements being effected as scheduled. There were 4,501 cars handled during the month.

There was a substantial increase in special work as Atkinson-Jones, Subcontractor, was given ballast service from Susie to 100-D, White Bluffs, and North Richland. They called upon us frequently for special moves of their Burro-Crane and small locomotives.

Railroad station "Rose" was abolished. Both dispatcher's phone stations at the Wye intersection of the High and Low line sub-division are now known as "May Junction" and they are located within the same yard limits. A revised Train Sheet was placed in service during the month.

2. Repairs

The engine on Baldwin locomotive No. 39-3721 was completely overhauled and new fuel injection pumps were installed. This unit was returned to service on January 26, 1948.

[redacted]

Repairs were completed on the steam locomotive for the Construction Department. In addition, hydrostatic tests were made on all air receivers and the locomotive boiler.

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. Completed General Electric portion of track to 241-TX Area including unloading ballast, lining, surfacing, and dressing.

b. Loaded and transported material for construction of Morrison-Knudsen portion of above track, including removal of 1,400 feet of slab yard track to salvage materials.

c. Replaced 25% of ties in 272 Building Track.

d. The railroad maintenance subcontractor performed the following work:

1) Partially completed laying of Morrison-Knudsen portion of spur to 241-TX Area.

2) Unloaded two cars of tie plates.

3) Frost conditions rendered tie removals impracticable during most of the month so this labor was shifted to general track maintenance.

AUTOMOTIVE OPERATIONS AND REPAIRS

1. Automotive Operations

a. This Department received 348,812 gallons of gasoline, 168,309 gallons of Diesel fuel, and 14,722 gallons of kerosene during January for Project use.

b. The extent of automotive equipment usage is indicated by the monthly total mileage of 1,202,341 for all types of equipment.

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

Effective January 9, 1948, the Automotive Division began transporting laboratory samples from the 300 Area Badge House to the 185 Building, 100-F Area. This service is in effect on all shifts, seven days a week. Samples are handled by the inter-area stretchout driver on the #2 Shift, Monday through Friday, and by special messenger with a car on the other shifts and weekends. This operation is through an arrangement made by the Technical Department.

d. The extent of Area bus traffic is indicated by the monthly total passenger count of 103,810 and the extent of Village Local bus traffic is indicated by the monthly total passenger count of 70,453.

e. Off-the-Plant special automobile trips (company business and official visitors) totaled 180.

f. Miscellaneous automotive operations services, including (a) Motor Pools, (b) Inter-Area Shuttle Service, (c) Inter-Area Freight, Mail and Expres[redacted]

Service, (d) Towing and Wrecker Service, were rendered during the month in routine manner.

2. Repairs

Fifteen 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 approximately 60% complete. Work Order D-69239 - Mixing and placing of concrete was completed. Work Order D-69636 - Erect fences on C-112 - is approximately 30% complete. Work Order D-69837 - Haul Material and Pour Concrete for 154-5-B Diversion Boxes - was completed.

Project C-120 - Divert Second Cycle Waste Supernates to Ground. Work Order D-69819 - Excavation has been completed and the backfilling is approximately 85% complete. Work Order D-69815 - Pouring concrete for Hatchway on 112 Tank was completed. Well 241-B-13 was completed and has a depth of 150 feet. Well 241-B-9 was started and completed. The total depth is 180 feet. Well 241-B-10 was started and has a present depth of 145 feet. Footage on all wells drilled to date totals 3,769.

Project C-133 - Special Test Wells. Well 361-B-3 was completed and has a depth of 330 feet. Well 361-B-2 was started in December and has a present depth of 315 feet. Footage on all wells drilled to date totals 6,207. (A typographical error in the December report showed this total to be 6,787 when it should have been 5,787.)

Project C-160 - H.I. Shaft at 241-B Second Cycle Crib. Work Order D-69196 Excavate for concrete shaft, backfill after installation - Excavation was completed, concrete shaft was installed, and the backfilling is approximately 98% complete.

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 approximately 40% complete. Work Order D-69170 - Mixing and placing of concrete at 211-B Tank Farm is approximately 60% complete.

Project C-228 - Work Order E-7307 - Excavation for a new storage garden was completed. Work Order D-51901 - Build Ramp and Install Fans - was completed.

b. 200-West

Project C-163 - Additional Process Waste Storage. Work Order D-68002 - Approximately 170 cubic yards of concrete were placed in Diversion Box 155. Work Order D-68009 - Excavation of Catch Tanks - Excavation of Catch Tank 154 is approximately 5?% complete and Catch Tank 155 remains about 65% complete as approximately 3000 cubic yards of earth have been removed. Work Order D-68010 - Excavation of waste line trenches for placement of

pipe and concrete encasements is approximately 10% complete as approximately 98,000 cubic yards of earth have been removed to date. Excavation of waste line trench from 221-T Building to Diversion Box 155 is approximately 95% complete. Work Order D-68013 - A concrete mixing plant was set up in the Area and approximately 650 cubic yards of gravel were moved to the mixing site. Approximately 338 cubic yards of concrete were placed in the trench for pipe encasements and 20 cubic yards were placed in pre-cast covers.

c. 300 Area

Project C-142 - Addition to 314 Building. Addendum #4 - Work Order D-69480 - Mix and place concrete for gas cylinder storage platform. Work Order D-69431 - Excavate and backfill for storage platform. Our portion of this work is approximately 90% complete.

Project C-187 - Work Order D-51018 - Excavation and concrete work for 321 Building - Excavation was completed and approximately 94 cubic yards of concrete were placed.

Project C-208 - Change House Enlargement 3707-A. Backfilling was completed and approximately 20 cubic yards of concrete were placed in floor slab. Our portion of this work is approximately 98% complete.

Work Orders D-51253, D-51277, and D-51280 - Excavation for resetting of steam line poles is approximately 80% complete.

Work Order D-2717 - Continuation of drilling of Well 300-4 - An additional 35 feet was drilled on this well and it has a new completed depth of 167 feet.

d. 700-1100

Project C-138 - Automatic Dial Exchange, 702 Building - Excavation is 95% complete and approximately 29 cubic yards of concrete were placed in footings.

Project C-148 - Combined Maintenance Shop for 700 Area - Mixing and placing of concrete is approximately 75% complete.

Project C-167 - Commercial Laundry, Addition to Equipment Room. The old floor was completely removed.

Project C-195 - Radio Communications for Railroad Dispatching. Our portion of this work was completed during the month.

Project C-200 - Water Supply, BX Telephone Exchange - Approximately 5 cubic yards of concrete roof slab were replaced. Excavation for sewer line is approximately 95% complete and backfilling is 50% complete.

Project C-202 - Gate House and Parking Lot 700 Area at Stevens Drive and Swift Boulevard. Backfilling on gate house is approximately 95% complete. Excavation for sewer line is approximately 95% complete. Excavation for storm drains is 60% complete.

Project C-209 - Two Story Addition to Richland Administration Building. Excavation was completed. Backfilling is approximately 80% complete and 33 cubic yards of concrete were placed in bond beams.

2. Village Services

Project C-134 - Richland Dust Control and Landscaping Program. Planting of Village street trees and shrubbery around facilities and schools is approximately 18% complete. Village Nursery remains approximately 96% complete. Site work and leveling was begun on the permanent Village Nursery.

The treatment of steam line poles for the Power Department was completed January 9, 1948.

EQUIPMENT CONTROL

1. Fourteen units of equipment were transferred to the Construction Department on P.I.T.'s making a grand total of 166 units transferred to date.

2. Ten farm tractors were excessed. These units were formerly operated by Prison Industries, Inc. at the Columbia Camp.

3. There are 901 units of equipment presently on order as 54 units were requisitioned during the month. Twenty units were received on orders placed prior to January 1, 1948, and 25 units were received on requisitions placed during the month.

TRAFFIC DIVISION

1. As a result of our third application to the Milwaukee Railroad, dated November 21, 1947, to reduce to the Kennewick basis the rate on Soda Ash from Westend, California, to Hanford, the North Pacific Coast Freight Bureau published in Supplement 91, Tariff No. 2-K, effective January 31, 1948, a rate of 25 ¢ per cwt. minimum weight 80,000 lbs. to apply on Soda Ash from Seattle and Tacoma to Hanford. This will reduce the through combination rate from Westend to the Kennewick basis and will effect a savings of 10¢ per cwt. or approximately $80.00 per car.

2. Effective January 5, 1948, the Interstate Commerce Commission increased from 10% to 20% the emergency rail freight increase in Ex Parte 166. On January 13, 1948, this increase was limited to a specific maximum on various commodities ranging from 3¢ per cwt. on salt to 20¢ per cwt. on fresh fruits and vegetables. Washington Intrastate application of these changes was made effective on January 24, 1948. The maximum increase will reduce rates on many commodities and any such reductions under rates paid on and after October 23, 1947, will result in our filing reparation claims with the carriers to the extent of the reduction.

3. Effective 7:00 a.m. January 19, 1948, the Interstate Commerce Commission cancelled penalty demurrage charges of $11.00 and $16.50 per day on all cars subject to demurrage, except tank cars. Charges on other than tank cars are now $3.30 per day for the first two demurrage days and $5.50 for each succeeding day.

5)

[redacted]

TRANSPORTATION DEPARTMENT

ADDENDUM

ORGANIZATION AND PERSONNEL

Number of employees on payroll		January
Beginning of month		895
End of month		887
Net decrease		8
Terminations	9	
Transfer to other Departments	2	
Total		11
Transfer from other Department	1	
Returned to work (Removed from roll)	2	
Total		3
Net decrease		8

1206177

6)

[redacted]

[redacted]

MEDICAL DEPARTMENT

JANUARY 1948

GENERAL

The Health Instrument division was made an independent department as of February 1, 1948 with H. M. Parker as Superintendent. Three physicians were added to the staff.

There was no record of general body radiation overexposure this month, nor was there any evidence of occupational disease or injury as a result of radiation.

The active speck problem in the 200 Areas is improving with completion of stack changes. The finding of four active specks on the mask of an area employee however, indicates the need for continued use of masks.

H. M. Parker is giving a series of lectures on Radiation Dosimetry at the request of Dr. Zirkle at Chicago.

R. E. Brown attended a meeting in Portland with Mr. Piper of the U.S.G.S. concerning future plans for studies in connection with the disposal of active wastes to the ground.

J. W. Healy attended an Information Meeting on Laboratory Design at Argonne National Laboratories in Chicago.

E. C. Berry visited the Clinton and Argonne Laboratories to secure information on radio-biological methods.

Work of moving the North Richland medical center progressed satisfactorily with most of the sections in place by the end of January.

Detailed drafting of the Richland medical additions was started, and is expected to be completed by the latter part of March.

Absenteeism due to sickness of weekly employees remained very good at 1.27%. The health topic of the month is aimed at prevention of summer absenteeism by proper preventive treatment now.

Pre-employment and other physical examinations were up 50% to 6,009, making an average daily of 273 examinations.

The average daily hospital bed census was 89, a continuation of the rapid upward trend. Clinic visits increased by 17%. The number of dental clinic visits increased by 46%.

There were 95 new cases of mumps, while syphilis continued as a very important public health problem with 47 new cases being reported.

[redacted]

HEALTH INSTRUMENT SECTION

Organization

The composition and distribution of the force as of 1/31/48 was as follows:

	100-B	100-D	100-F	200-W	200-E	300	700	P.G.	Total
Supervisors	0	1	3	7	4	12	5	0	32
Engineers	1	3	6	11	14	6	0	3	44
Others	0	11	15	47	20	43	7	15	158
Clerical	0	0	0	0	0	2	3	0	5
Total	1	15	24	65	38	63	15	18*	239

*Includes 13 in Training School

General

H. M. Parker went to Chicago for the purpose of giving a series of lectures on Biophysics to a group studying Radiation Hazards in connection with a program being conducted at the Institute of Radiobiology and Biophysics.

R. E. Brown attended a meeting held in Portland with Mr. Piper of the U.S.G.S. concerning future plans for studies in connection with the disposal of active wastes to the ground.

J. W. Healy attended an Information Meeting on Laboratory Design held at the Argonne National Laboratories in Chicago.

The H. I. Lecture Series was started for the third time with a total of 35 in attendance including two men from the Brookhaven National Laboratories. There are three men each from the "P" and "S" Departments who are also taking the course.

One Martindale mask was found which had four active specks in it. This one case is sufficient to justify the use of these masks in the operating areas.

The present manpower and facilities for servicing the photo badges are only just able to keep up with the present increased load. A study is being made to determine whether adequate records would be obtained with a two-week schedule in place of the present weekly schedule.

OPERATIONAL DIVISION

100 Areas

Work Permit Summary

	December	January	1948 To Date
100-B	86	124	124
100-D	831	771	771
100-F	974	857	857
Total	1891	1752	1752

Retention Basin Effluent

The activity of the water leaving the Retention Basins was as follows:

	100-D	100-F
Power level	275	275
Average beta dosage-rate (mrep/hr)	0.6	0.8
Average gamma dosage-rate (mr/hr)	1.5	1.7
Average total dosage-rate (mrep/hr)	2.1	2.5
Average integrated dose in 24 hrs. (mrep)	50	60
Maximum integrated dose in 24 hrs. (mrep)	55	65
Maximum integrated dose in 24 hrs. (mrep) 1948	55	65

Vents were installed in the D Area effluent line on the island opposite the 1904 Building. Survey readings indicated a maximum of 5 mrep/hr at the points where the effluent line was drilled. While the work was in progress, the effluent water was directed into the 1904 spillway which carried it into the shallow channel between the area and island. Water samples taken 25 yards downstream from the spillway showed about one-third the activity of samples of the Retention Basin effluent water.

Three additional leaks in the F Area effluent line to the Retention Basin were discovered. One was approximately 10 yards from the leak reported last month and the other two about 25 yards east of the main road. All were sealed.

100-B Area

No unusual radiation effects were observed during the month.

100-D Area

During the last few days of the month, CO_2 was added in small increments to the helium atmosphere of the pile. General radiation levels in accessible areas around the pile did not change noticeably, but the

activity in the discharge area increased with each addition of CO_2. The H. I. Methods Group is currently attempting to analyze for C^{14} in the recirculated gas by taking samples in the inner instrument room.

Van Stone flange inspection continued during extended shutdowns with the principle hazard still due to contamination. Fillings in the end of one tube caused a dosage-rate of 110 mrep/hr at ½" from the end of the tube. Prior to Van Stone work the tubes were purged and flushed to remove as much loose contamination as possible; but small amounts were transferred to the sleeves and pants cuffs of coveralls. No body contamination was observed.

Graphite and aluminum samples were removed from process tubes 3469 and 3574. Personnel were exposed for short periods to 200 mrep/hr, but the average level was only 20 mrep/hr. Considerable contamination was observed on the push pole and cleaning rags during this work and small amounts were spread to the elevator railings. Tube 4376 was replaced and 4674 emptied for manometer measurements, the chief hazard again was that of contamination.

The end cap of air filled tube 4676 was removed during pile operation, allowing active gas to escape for a few seconds until the cap could be replaced. The bellows of tube 3867 was replaced, but did not completely eliminate the gas leak which has been present there for several months. Line breaks in the inner instrument room caused gas readings greater than 150 mrep/hr for a short period during repairs to the system. Personnel evacuated the room until these readings dropped to less than 10 mrep/hr. The gas leak at the "C" experimental hole was satisfactorily repaired.

Active gas, at least partly radioargon, was encountered at one of the storage area overflow drains when the overflow dropped below the seal point. Dosage-rates as high as 500 mrep/hr including 200 mr/hr were observed. The condition was relieved by increased water flow through the basin.

Part of the trench at the burial grounds was backfilled to ground level but additional dirt was required when a dosage-rate of 500 mr/hr was noted. A mound was raised over the trench until all readings were below 1 mr/hr.

100-F Area

During the removal of the rear steel pieces from tube 1686, a large amount of oil spilled from the tube and spattered over the elevator railings and floor. One man's hands became grossly contaminated and jammed the 5-fold counter after several washes in soap and water. Treatment with $KMnO_4$ reduced the count to 5-7-17-6 at which point decontamination efforts were discontinued. Hand count the next day was below the warning level. Shoe and rubber contamination was also observed. The push pole used during this work read 2 rep per

hour after wiping and was replaced before any further work was attempted. The tube was satisfactorily replaced with a maximum dosage-rate of 800 mr/hr at 5' observed on the center section as cut at the rear face.

The "D" experimental hole thimble was replaced with some high exposure levels and short time limits encountered. A dosage-rate of 60 mr/hr at 40' was observed on the old thimble after it was removed from the pile. The beam reading from the hole with the new thimble in place was 2 roentgens per hour. Personnel exposure did not exceed 50 mrep. After start-up a neutron flux in the vicinity of the "D" hole was apparent. Slow neutron pencils backed with paraffin showed readings between 20 and 40 mrem after an exposure of about 20 minutes. The Chang and Eng meter showed readings as high as 22 mrem/hr but accurate readings were difficult to obtain due to the short time limit allowed. The entire experimental level was restricted until the following shutdown at which time more effective shielding was installed.

Three process tubes, loaded respectively with 43½" aluminum rod, a 55 3/4" aluminum rod, and an 8" lead slug in place of the regular front dummy charges, were examined for radiation effects. During operation no unusual readings of any type were observed. When the special pieces were removed during a shutdown, leaving the end metal piece exposed, a maximum reading of 2.1 roentgens per hour was observed with the water pressure at 20 inches. The effect at zero water pressure was about the same. The active metal column had been in the pile about three weeks.

Tube 1682 was replaced without incident with a maximum reading of 500 mr/hr at 10' on any tube section. Contamination was prevalent on the front face, being derived from the push pole which eventually read 5 rep per hour. The discharge area was surveyed for contamination and showed readings on the catwalks as high as 300 mrep/hr. Smear samples from the floors and elevator railings read 200 and 25 mrep/hr respectively.

The old "B" hole thimble was cut into three sections and buried. A maximum dosage-rate of 250 mr/hr at 10 feet was encountered by personnel during the cutting operation, but the total exposure in any case did not exceed 50 mrep. A number of old tube pieces were removed from the basin and buried, with maximum readings of 2 roentgens per hour at 4' and 15 mr/hr in the truck cab reported.

200 Areas, T and B Plants

General Statistics

	December			January			1948
	T	B	Total	T	B	Total	To Date
Special Work Permits	364	401	765	372	389	761	761
Routine & special surveys	343	348	691	325	353	678	678
Air Monitoring samples	353	454	807	355	496	851	851
Thyroid checks	194	175	369	207	171	378	378

Canyon Buildings

High air sample results were obtained on two occasions in the T Plant in conjunction with repair work to sampling ports. Skin contamination also occurred when liquid, spilled from the 17-4 port, soaked through both protective coveralls onto the knee. Normal decontamination efforts were successful.

An air sample result of 1.7×10^{-6} μc f.p./liter was obtained at section 8 in the T Plant shortly after the stack fan was turned back on following placement of the new #2 fan. This is the fourth time stack fans have been turned off in connection with fan replacement work, but the first instance of significant air-borne contamination coincidental with such work. The effect was not found on other air monitoring equipment in the Canyon, and the building was shut down eight hours prior to the fan work.

Control Laboratory

A total of 395 non-regulated items was found contaminated on surveys by Technical and H.I. personnel; about 4 μg Pu were involved. There were 74 floor spots and two instances of shoe contamination reported. Six cases of skin contamination occurred. Contamination was reported on a trash can in the lunchroom on two occasions, but no other contamination was found in the room.

Concentration Building

In the B Plant, leaks in the E-1 and E-4 vent line necessitated its removal and replacement. Some face contamination was noted during this work but was easily cleaned, and no further skin contamination was noted after use of cellophane hoods. Other incidental maintenance and inspection work in both Plants resulted in some protective clothing contamination, but no skin contamination was found.

Stack Area

The T Plant #2 fan and duct work was replaced with stainless steel equipment during the period. Large amounts of contamination were encountered when

liquid spilled onto the concrete pad from the old fan as it was removed; and persistent decontamination effort, with acid washes and concrete chipping followed by a 2-inch layer of new concrete, was required in order to clean the region. Almost all air samples taken in connection with the decontamination work showed significant results with maximums of 1.3×10^{-5} µc f.p./liter and 1.3×10^{-10} µg Pu/cc reported. High radiation levels and short work time limits were involved, but no overexposure resulted.

The previously established Danger Zones in the immediate vicinity of the T and B Plant stacks still require respirator or assault mask protection, and the remaining T Plant exclusion area requires respiratory protection in the form of Martindale face pads.

A total of 4,699 Martindale pads and 697 Comfo respirator filters was checked, and contamination, presumably active particles, was found on one pad.

Waste Disposal Area

Air from an undetermined cause was found emitting from the 134 dry well between the T Plant 201 and 202 tanks. Surveys and air samples did not detect other than natural radioactivity.

A dosage-rate of 3.5 roentgens per hour was reported at the top of the B Plant 154 diversion box when it was opened for a jumper change. Removal of a contaminated jumper reduced this reading to 450 mr/hr. During removal of the jumper to the burial grounds, dosage-rates of 1 roentgen per hour were reported in both the crane cab and the truck cab. Relief drivers were used. About 60 feet from the crate used to transport the jumper, a dosage-rate of 200 mr/hr was noted.

The Isolation Building

Air Monitoring

There were 206 spot air samples taken, of which 198 were below 10^{-11} µg Pu/cc. The high result of 1×10^{-10} µg Pu/cc was obtained during Special Work Permit work, masks were worn. Forty-eight Little Sucker samples run continuously by shifts, and 14 Big Sucker samples of the 903 exhaust system were taken. No significant result was obtained.

Surface Contamination

A total of 216 non-regulated items was found contaminated on surveys by Technical, H.I., and "S" Department personnel. Four items above 20,000 d/m but below 80,000 d/m were reported. Seventeen instances of floor contamination, and 6 of skin contamination, were reported.

Gamma Radiation

P.R. Container	9 mr/hr (maximum)
Process Hood	2 mr/hr (maximum)
S.C.	5 mr/hr (maximum)

The 300 Area

General Statistics

	December	January	1948 to Date
Special Work Permits	173	155	155
Routine & special Surveys	244	185	185
Air monitoring Samples	133	136	136

Metal Fabrication Plant

Summary of air samples taken was as follows:

Location	No. Taken	Above 1.5×10^{-4} µg U/cc	Maximum Concentration
Extruder Building	18	8	1.6×10^{-3} Dummy block station
Chip Recovery	6	2	2.3×10^{-4} 2nd Sorting Table
Lathe Area	6	1	3.6×10^{-4} Over rod guide
Oxide burner Building	21	21	1.7×10^{-2} Operator's position

Black dust, which settled on the operator's coveralls in the Oxide Burner Building, was sampled to determine the amount attributable to soot and uranium. Analysis showed 93% uranium oxide. Several pairs of shoes were found quite contaminated on the insides and uppers with dosage-rates as high as 20 mrep/hr, as measured by film, reported. Decontamination attempts were not successful, and the shoes were confiscated.

Retention Pond

Site Survey samples showed the following maximum results for this period:

Location	alpha	beta
Water, inlet	300 ± 16 d/m/liter	6.2×10^{-4} µc/liter
Water, N.W. corner	216 ± 12 d/m/liter	2.0×10^{-4} µc/liter
Mud, inlet	Too high to count	3.2 µc/kg
Mud, N.W. corner	573 ± 18 d/m/g	19.4 µc/kg

Technical Building

All samples of room air were below 2×10^{-11} µg Pu/cc and 1.5×10^{-4} µg U/cc. One instance of hand contamination, which jammed the five-fold checker,

occurred and was reduced by usual methods. Contamination in a hood used for uranium work was analyzed and considerable plutonium found. In the past, product work was done in this hood.

Laundry, Decontamination and Hand Counting

A total of 117,253 items was monitored in the Plant Laundry, including 46,409 alpha checks. Also included were 22,565 coveralls, 20,214 gloves, 33,624 overshoes, and 3,176 smacks and jackets.

Eighteen Big Sucker and seventy-seven spot air samples had as the high result 2×10^{-11} µg Pu/cc obtained behind washer #2.

There were 25,307 alpha hand checks, and 39,761 beta hand checks recorded. About 0.2% of the alpha, and about 0.07% of the beta scores were above the warning levels. No attempt at decontamination was recorded in 21 cases of alpha contamination, and one case of beta contamination. Where decontamination was attempted, it was successful in all cases.

PERSONNEL METERS

Pencils	100-B 100-D	100-F	E&N 200	200-W	300	Total
Total pencils read:	11,233	13,278	29,952	38,278	31,242	123,983
No. of single readings: (100 to 280 mr)	72	43	89	90	105	399
No. of paired readings: (100 to 280 mr)	0	0	1	0	1	2
No. of single readings: (Over 280 mr)	152	132	248	103	217	852
No. of paired readings: (Over 280 mr)	3	2	2	1	4	12
Paired readings lost:	2	0	0	2	1	5

No significant pencil result of over 100 mr was confirmed by the badge result. Investigation of lost readings showed no possibility of an overexposure.

1200186

[redacted]

DECLASSIFIED

Badge Resume, Construction Areas

	105-KE	241-TX	384	Total
Badges Processed:	4,238	2,169	150	6,557
No. of readings: (100 to 500 mrep)	0	0	0	0
No. of readings: (Over 500 mrep)	0	0	0	0
Lost Readings:	3	1	15	19

Sixteen lost readings were due to X-ray exposure of the open window, one badge lost in Area, one damaged film, and one lost in processing.

Badges

	100-B	100-D	100-F	200-E	R.R.T. 200-N	200-W	300	Total
Badges Processed:	2,222	3,583	3,879	5,464	828	5,031	7,124	28,260
No. of readings: (100-500 mrep)	0	0	1	6	0	29	133	169
No. of readings: (Over 500 mrep)	0	0	0	0	0	0	0	0
Lost readings:	0	1	4	0	0	1	2	8

Lost readings were accounted for as follows:

Damaged badge	-	3
Badge lost in area	-	3
Stuck film	-	1
Sensitive film not packaged	-	1

In addition, 825 items of non-routine nature were processed.

\/C

[redacted]

CONTROL AND DEVELOPMENT DIVISION

Water Monitoring

Two hundred and forty-one samples of drinking water were taken during the month. The maximum alpha contamination of 8 dis/min/liter was found in the 300 Area sanitary water. Traces of alpha activity ranging from 1.6 to 3.6 dis/min/liter were found in Benton City, Midway, Richland #13, and White Bluffs. Two 10 liter samples from White Bluffs gave 11 and 17 dis/min/liter by ether extraction. There were no samples that gave beta activity as high as 5×10^{-5} uc/liter.

Eleven test well samples were taken with no detectable alpha or beta contamination.

Fifty-seven samples of Columbia River water were taken with no alpha result as great as 2 dis/min/liter. The maximum beta reading was 1×10^{-3} uc/liter from a Hanford sample. Twelve 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)	
	December	January	December	January
100-B	0.7	0.6	0.3	0.4
100-D	0.7	1.0	0.4	0.4
100-F	3.1	0.9	0.4	0.4
200-W	0.5	0.3	0.5	0.4
200-E	0.6	0.8	0.7	0.6
Riverland	0.6	0.7	---	---
Hanford	1.2	0.5	---	---
300 Area	0.4	$\leq$0.1	0.4	0.4
700 Area	$\leq$ 0.1	$\leq$0.1	---	---
Kennewick	0.1	0.1	---	---
Pasco	$\leq$ 0.1	$\leq$0.1	---	---
Benton City	$\leq$0.1	$\leq$0.1	---	---

The average dosage rate in the TX Area was 0.63 mrep/24 hrs. as recorded by detachable chambers. Chambers have been installed at the 101 Building, 105 DR, and White Bluffs. Readings will start in February. The maximum eight-hour reading on a CI unit was 4×10^{-7} μc/liter in the 200 East Area. The highest average concentration for the monthwas2.3×10^{-9} μc/liter in the 200 East Area. Fifty-five rain samples were collected. The maximum result was 0.03 μc/liter in a sample from the 200 West Area. The maximum off-area result was 1.7×10^{-4} μc/liter in a sample from Riverland.

Land and Vegetation Contamination

The vegetation contamination has apparently decreased slightly this month.

Location	Average for December	uc I^{131} per kg. January	
		Maximum	Average
North of 200 Areas	0.05	0.44	0.05
Near the 200 Areas	0.24	1.08	0.13
South of 200 Areas	0.10	0.48	0.06
Richland	0.05	0.19	0.04
Pasco	0.05	0.16	0.04
Kennewick	0.05	0.13	0.04
Benton City	0.06	0.11	0.04
Richland "Y"	0.07	0.11	0.04
Hanford	0.05	0.15	0.04

A region of contaminated ground was found 3000 feet south-east of the B Plant stack at the end of a warehouse which apparently acts as a baffle to drop out the specks.

Well Drilling

Four wells were completed around 241-B at a depth of 150 feet each. As of the end of the month 13 wells have been completed in this area and one is scheduled to be drilled. No significant contamination has been found in either field or laboratory checks on samples from these wells.

Four water samples were taken from the 361-B-1 well indicated from 6.3×10^{-3} to 1.3×10^{-2} μc/liter, about the same as last month. Alpha activity was also observed at somewhat higher levels than last month, the maximum being 140 dis/min/liter. Two other wells were completed to the water table at distances of 500 feet north and 30° west and 475 feet south and 30° west of the 361-B dry well. One sample has been taken from each of these wells and they had beta activities of 2.2×10^{-4} and 8×10^{-5} μc/liter respectively and each had alpha activities of about 14 d/m/liter. Another well is scheduled to be put down 1000 feet south and 45° east of the 361-B dry well.

No significant contamination was found on 4 soil samples taken from well 241-T-1 at a depth of about 30 feet below the bottom of the #3 crib.

Geologic studies of the areas around the 361-B dry well and the second cycle crib at 241-B are being continued.

Bio-Assay

Four hundred and nineteen samples were analyzed for plutonium. One resample was made this month. Twelve of the fourteen resamples from last month have been collected and processed with no result greater than 0.6 d/m. The new procedure for determining fission products has been giving low results with an average of <20 d/m per sample.

The development work on the fluorophotometer has been stopped because of the large number of samples. Seventeen urine samples, 25 well samples, and 25 hexone samples from the Technical Department have been run this month. One of the urine samples had 14 µg U/liter and no other had as much as 10 µg U/liter.

A statistical analysis of data from 3150 samples, 544 spiked samples, and 575 blank samples has been completed. This analysis indicated that the process operates the same for zero level as for tolerance level and that the plant personnel is essentially non-contaminated. Limits of 0.65 d/m for resampling and 0.50 d/m for recounting have been set up on basis of the 99% and 95% limits respectively. The probability of not observing various levels has been calculated as 3×10^{-6} for 1.6 d/m, 3×10^{-2} for 1.0 d/m and 0.27 for 0.7 d/m.

Biological Monitoring

Weekly checks of the caged rabbits near the T Plant stack have not disclosed any evidence that active specks have been inhaled or ingested. No more of these rabbits have been sacrificed.

One of the rabbits with a testicular implant of an active speck was sacrificed. The testis showed no macroscopic evidence of damage by radiation or foreign body reaction. The tissues are being retained for a pathological study. Other body tissues gave only slight indications of radioactivity.

Two jack rabbits were collected from the 200 Areas and the various tissues were checked. The most significant data obtained indicated a difference in the concentration of I^{131} in the thyroid of the mother and in the embryos by a factor of about three, the embryos having the greater concentration

One of the female Pekin ducks which are maintained on the Columbia river at the 100-F Area was killed and partially eaten by a predator. Sufficient material remained, however, so that the various tissues could be sampled. The highest activity was 0.2 µc/kg in the thyroid, kidney and bone marrow had 0.01 µc/kg and 0.04 µc/kg respectively. These levels were not high enough to permit determination of radioactive decay with any accuracy.

13

1208190

Twelve large second generation rats which have received only 100-F Area effluent water were checked. Only slight activities were noted in the blood, kidneys, liver and bone all of which had about 0.01 μc/kg.

Fish Laboratory

Studies on the effect of area effluent water on chinook salmon have been continued. Fish which have not been seriously affected have developed to the feeding stage. In area effluent water diluted with five parts of river water the young fish are somewhat subnormal; in greater dilutions effects of the effluent water are not yet apparent. The young fish which hatched in the dechlorinated pre-pile process water and refrigerated retention basin water have nearly all died, indicating that death of these small fish is largely due to toxic chemicals rather than the amount of radiation they have received. Fish held in a concentration of 2 p.p.m dichromate are also subnormal.

A few of the adult trout which have been exposed to half strength 107 Basin water for the past three months have spawned and others are nearing maturity. The eggs obtained from these fish are being incubated and the progeny will be compared to those from unexposed parents.

Sampling of the bottom algae, higher aquatic plants and invertebrate organisms of the Columbia River between Pasco and the 100-B Area has been continued to determine the relative abundance and amount of accumulated activity. A lack of movement by fish in the Columbia River during the cold weather has made capture of specimens difficult in recent weeks. Weekly collections are still being made for activity studies, however.

Methods Development

A Martindale Industrial mask from the T Plant was examined for specks because of a significant beta count. Four specks ranging in activity from 2.5×10^{-5} μc to 3.7×10^{-4} μc were found. Two air filters from the 300 Area graphite machining were submitted. A total of 350 and 5000 c/m were found on the filters by counting directly on the thin window counter. It was impossible to analyze these samples for carbon because of the large amount of cellulose in the paper. A considerable amount of some hard beta radiation tended to mask the C^{14} result. Tests are now underway to calibrate the tubes for this radiation and to determine the isotope responsible for the hard beta. The gas in the 100-D pile is being sampled daily to attempt a measurement of the build-up of C^{14} in the added CO_2. Filter papers obtained by the Technical Department from the 200 East stack are being examined for specks. Attempts are being made to extract iodine directly from vegetation to allow more sensitive analyses. Results to date have been negative.

Backscatter results on sample plates have been obtained for glass, stainless steel, silver and platinum with several isotopes. The use of tributyl phosphate as an extraction agent for the water samples has been temporarily abandoned because of the difficulty of re-extraction into a medium suitable for evaporating on a plate. An ether extraction process that gives 75% yield on preliminary tests has been devised. A series of self-absorption correction factors for alpha emitters in Columbia River water has been obtained. Plating techniques for thin films of inlium and gold on graphite have been set to allow calibration of the foils used for slow neutron measurement.

Instrument Development

The new alpha counters for hand monitoring being made by the Instrument Department are much less microphonic than previous models and they are being tested to determine whether they can be made with thin film on both sides so that beta particles could be detected by GM tubes placed on the back side.

The pulse analyzer has been completed satisfactorily and works well with pulses from a pulse generator. Before it can be used satisfactorily, however a better chamber will have to be constructed.

Physics

Some progress has been made in eliminating defects which have appeared in the new extrapolation chamber equipment. It is planned to measure the ionization currents in this chamber with one of the vibrating reed electrometers.

A production test has been prepared and approved to perform a series of experiments on neutrons emerging from the B hole on the experimental level of 105-D.

Calibrations

Twelve new one milligram radium sources were received. These are to be used mostly for field checks on integrons. The calibrations group is starting work on a two-shift basis on February 2[illegible]. This schedule should reduce the amount of time an instrument is out of service for repair and calibration thus providing a better working stock in the field.

The routine calibrations were:

RADIUM CALIBRATIONS	Number of Calibrations	
	December	January
Fixed Instruments:		
Gamma	538	513
Portable Instruments:		
Alpha	66	50
Beta	74	51
Gamma	452	392
X-ray	--	1
Neutron	3	28
Total	595	522
Personnel Meters:		
Beta	581	1,120
Gamma	8,741	8,541
X-ray	6,606	8,442
Neutron	11	4
Total	15,939	18,107
GRAND TOTAL	17,072	19,142

16

[redacted]

Medical Department

DECLASSIFIED

H. I. SECTION

ORGANIZATION AND PERSONNEL

January 31, 1948

Number of employees on payroll:	January
Beginning of month	235
End of Month	239
Net Increase	4

1200194

17

[redacted]

Plant Medical Division

Physical Examinations	Dec. 1947	Jan. 1943
Pre-employment (G.E.)	204	355
Annual	0	0
Sub-contractors & Food Handlers	2385	3911
Rechecks	575	790
Interval Rechecks (Area)	634	836
Terminations & Transfers (G.E.)	90	102
Government	10	15
Assist to Ins. Unit, Clinic, etc	0	0
Total	4148	6009

Laboratory Examinations

Clinical Laboratory

Pre-employment, terminations, transfers	10676	19248
Annual	0	0
Rechecks (Area)	4412	4240
First Aid	43	54
Plant Visitors	128	12
Clinic	1801	2370
Hospital	2345	3039
Public Health (Inc. Food Handlers)	525	546
Total	19930	29509

X-Ray

Pre-employment, terminations, transfers	2030	3583
Annual	0	0
First Aid	125	191
Clinic	224	333
Hospital	189	244
Public Health (Inc. Food Handlers)	154	244
Total	2722	4595

Electrocardiographs

Industrial	1	0
Clinic	5	15
Hospital	16	13
Total	22	28

Allergy

Skin Tests	13	43

17

First Aid Treatments	Dec. 1947	Jan. 1948
Occupational Treatments	1344	1670
Occupational Retreatments	3775	4902
Non-occupational (Welfare) Treatments	5395	5637
Total	10514	12209

Absentee Investigation Report		
Total No. calls requested	28	40
Total No. calls made	28	40
No. absent due to illness in family	0	0
No. not at home when call was made	1	0

General

One industrial physician was added to the staff during the month. Employment examinations increased from 4148 last month to 6009 for January. Treatments at the First Aid Stations also increased by 1995 for all ten locations. Plans were completed for obtaining two additional First Aid Stations, one in the 101 Area, and one in the White Bluffs Central Shops Area. There were fourteen major injuries treated during the month, and all except one were to Construction employees. There were fifty-one sub-major injuries to sub-contractor employees. Some of these injuries will result in some partial permanent disability. There was no evidence of occupational disease.

The health topic for the month of January dealt with "Hay Fever", in an effort to encourage hay fever sufferers to start treatment early so as to obtain the best results. Material was prepared and distributed throughout the plant for discussion.

The absenteeism report was as follows:

Total absenteeism weekly employees all causes	2.10%
Total absenteeism weekly employees illness only	1.27%
Total days lost by male employees due to illness	1,023
Total days lost by female employees due to illness	475
Total days lost due to illness	1,498

The lowest absenteeism was in the Transportation Department with 1.23% and in the Power Department with 1.84%. The highest absenteeism was in the Electrical Department with 3.24%, and in the Design & Construction Department with 2.67%.

Village Medical Division

Clinic Section	Men	Women	Children	Dec. 1947	Jan. 1948
First Visits	473	315	229	827	1017
Retreatments	1846	1823	870	3902	4539
Total				4729	5553

Clinic Visits

Medical	684	933
Pediatrics	568	612
Surgical	576	737
Gynecological	338	345
Obstetric (new)	57	85
Obstetric (recheck)	643	583
Venereal Disease	613	873
Ear, Nose & Throat	299	364
Eye	219	212
Visits handled by nurses(hypo., dressings, etc.	256	227
Night clinic visits	476	585
Total	4729	5556
Total Clinic Visits per day	152	206
Seen in Well-baby Clinic	212	205

Home Visits

Doctors	109	127
Nurses	36	58
Total	145	185

Kadlec Hospital Section

Census

Admissions	404	514
Discharges:		
Surgical	84	102
Medical	89	104
Obstetric & Gynecologic	96	93
Eye, Ear, Nose & Throat	37	75
Pediatrics:		
Children	56	64
Newborn	50	52
Total Discharges	412	490
Patient Days	2452	2766
Average Stay	6.0	5.3
Average Daily Census	79	89.2
Discharged against advice	0	3
One-day cases	54	75

Operations	Dec. 1947	Jan. 1948
Transfusions	33	25
Eye, Ear, Nose & Throat	16	26
Dental	3	2
Casts	13	12
Minors	47	68
Majors	35	33
Vital Statistics		
Deaths	2	3
Deliveries	51	53
Stillborn	2	1
Physio-therapy Treatments		
Clinic	80	85
Hospital	10	130
Industrial:		
Plant	330	370
Personal	30	50
Total	450	655
Pharmacy		
Number of prescriptions filled	2340	2725
Patient Meals		
Regulars	3466	3900
Lights	65	91
Softs	1167	1859
Surgical Liquids	77	98
Tonsils & Adenoids	45	113
Specials	697	399
Liquids	199	328
Total	5716	6788
Cafeteria Meals		
Noon	2317	2557
Night	249	294
Total	2566	2801
Nursing Personnel		
First Aid Nurses	32	35
Clinic Nurses	16	17
Public Health Nurses	10	12
Hospital General Nurses	88	96
Aides & Orderlies	60	64
Total	206	224

20

1280198

General

Clinic visits increased 17% over the figure for December, while hospital admissions increased 27%.

Public Health Section

Administration	Dec. 1947	Jan. 1948
Newspaper Articles	10	12
Committee Meetings	2	1
Attendance	14	8
Staff Meetings	2	1
Lectures & Talks	5	0
Attendance	181	0
Conferences	15	10
Attendance	20	30

Immunizations		
Diphtheria	52	45
Influenza	17	24
Rocky Mt. Spotted Fever	0	0
Schick Test	0	0
Smallpox	22	45
Tetanus	57	8
Typhoid	0	1
Whooping Cough	50	44
Total	198	187

Social Service

During the month of January, the number of admissions for social service consultations doubled in comparison to the average number admitted for the months of 1947. The change in the source of referrals to Social Service seems to clearly indicate that the meaning of case work service has gradually permeated a larger area in the community. Direct applications are now being received from families with problems.

There were 48 cases carried over from December, 24 admissions to service during the current month, and 18 cases closed, leaving the case load at 54. Sources of referral included the following: Personal Application - 4, Public Health - 6, Clinic Doctors - 3, Interested Persons - 3, A & J Labor Relations - 2, Other Social Agencies - 6.

	Dec. 1947	Jan. 1948
Sanitation Inspections	154	127
Total No. Nursing Field Visits	1054	1173

21

Bacteriological Laboratory	Dec. 1947	Jan. 1948
G. C. Smear	34	24
G. C. Culture	33	17
Fungus Culture	21	8
Vincent's Examinations	1	3
Trichomonas' Examinations	8	8
Sputum for Tuberculosis Organisms	7	20
Bacterial Cultures	76	48
Examinations for Parasites	13	17
Throat Smear & Cultures	167	148
Blood Cultures	2	5
Eye Smears	3	2
Examinations for Spermatozoa	0	0
Quantitative determination of blood alcohol	0	0
Type for Pneumococcus	1	0
Treated Water Samples	145	134
Untreated (Raw Water) Samples	0	0
Milk Samples (Inc. milk, cream, ice cream)	169	175
Sewage Samples	9	7
Examinations for Eosinophiles	1	5
Dark Field Examinations	1	0
Virulence Tests	0	0
Stool Cultures	7	10
Total	698	629

Communicable Diseases		
Amoebic Dysentery	0	0
Chickenpox	7	28
Diphtheria	0	0
Erysipelas	0	0
German Measles	11	5
Gonorrhoea	16	2
Impetigo	2	3
Influenza	11	0
Measles	1	2
Meningococcic Meningitis	0	0
Mumps	95	150
Paratyphoid "B"	0	0
Pediculosis	0	0
Pinkeye	5	0
Poliomyelitis	0	0
Rheumatic Fever	0	0
Ringworm	1	0
Scabies	3	1
Scarlet Fever	3	1
Syphilis	47	15
Thrush	0	0
Tuberculosis	0	0
Vincent's Infection	1	0
Whooping Cough	10	13
Total	213	220

22

General

The number of clinic visits for the control of the venereal diseases again increased. This was primarily due to the increase in the number of construction workers hired.

Due to the increased population in Richland, the food handling establishments are accepting the increased volume of business which is adversely affecting the quality of operation. This trend is particularly noticed in the combination soda fountain-short order type of establishment, which is approaching a restaurant type of operation without the necessary space and equipment. All the restaurants, with the exception of the cafeteria, have reached or are exceeding their designed capacities from a standpoint of sanitary operation.

Several meetings, in which the future water supply for Richland and North Richland was discussed, were attended by various members of the staff. As a result of these meetings, recommendations were referred to the Design & Construction Dept. for incorporation in the water-works design.

Meetings were also attended to review details of Mess Hall No. 3 at North Richland. Recommendations were turned over to the Design & Engineering Group.

Structural inadequacies in the present mess halls at North Richland are in the process of being corrected. The operation of these mess halls is difficult until the improvements are made.

The quality of the milk supply continued to be satisfactory. Field inspections and laboratory findings have indicated good sanitation practices on both the producer farms and in the pasteurization plants supplying milk to the village.

Preparation of mosquito breeding areas - namely, burning and clearing of marsh areas, was commenced the latter part of the month. The additional sprayer has been mounted on mobile equipment, thus providing the control crew with adequate equipment for carrying on an expanded mosquito abatement program.

A regional representative of the National Family Service Agency visited here during January. She felt that we have demonstrated in a short period of time the need for social service in Richland, and that our program has developed along standards which have proved acceptable in other communities.

Dental Division	Dec. 1947	Jan. 1948
Patients treated.....	1815	2658

The number of patients treated increased 46% over the previous month.

[redacted]

DECLASSIFIED

MEDICAL DEPARTMENT PERSONNEL SUMMARY

January 31, 1948

AREAS	Physicians	Dentists	Nurses	Aides & Orderlies	H. I. Specialists	Technicians	Office Workers	Others
Pasco			1					
Hanford			1					
3000			3					1
100-B			))		1			
100-D			) 4)		15	2*	1	
100-F			))		24	2*	1	
200-E			3		38	2**	1	
200-W			3		65	2**	1	
300			1		61	2**	3	
Plant General	9		7		18			
700-1100	15	10	137	64	12	27	99	58
Total	24	10	160	64	234	30	106	59

Grand Total: 687

* One day per week
** Two days per week

1206202

[redacted]

Medical Department

ORGANIZATION AND PERSONNEL

January 31, 1948

Number of employees on payroll:	January
Beginning of month	659
End of month	687
Net increase	28

GENERAL

Design status of approved projects

		Per cent Complete
C-112	241-BX Tank Farm	100%
C-136	Additional Housing	100%
C-147	Building for New Office Space	100%
C-152	Alterations to Red Cross Building 92-X	100%
C-153	Lighted Softball Park	15%
C-156	Additions to Jefferson and Columbia Schools	90%
C-163	Additional Waste Storage Facilities - 200 W Area	54%
C-165	New 100 G Area	10%
C-165	New 100 H Area	98%
C-168	Water Supply and Sewage Treatment Facilities	97%
C-170	Enlarged Patrol Hdqtrs. and Admin. Area Improvements	100%
C-173	Alterations to Women's Apparel Building 1111	61%
C-178	Construction Camp	100%
C-181	Replacement Houses for Existing Sites	96%
C-185	Railroad Connection South of Richland	6%
C-187	Redom Program	32%
C-190	Additional Steam and Water Facilities for 300 Area	20%
C-198	234-5 Building Program	55%
C-199	Expansion of 300 Area Sanitary Facilities	95%
C-201	Consultants' Office Buildings	Design under C-168
C-203	Water Supply and Sewage for Richland and North Richland	16%
C-204	Construction of Fire Station and Hospital Additions	2%
C-205	Third Addition to Housing - Richland Village	56%
C-206	100 DR Replacement Area	100%
C-206	100 FR Replacement Area	15%
C-212	Additional Men's Dormitories	83%
US-2	Junior High School	
US-4	Miscellaneous Commercial Buildings	

PERSONNEL

Number of employees on payroll: January 1948

Beginning of month	234
End of month	239
Net increase	5

Additions to the staff of the Design Engineering Department were as follows:

Senior Engineers	2
Junior Draftsmen	1
Clerks	1
Junior Clerks	2
Typists	1
Messengers	2
Office Helpers	3
Total	12

Terminations and transfers out of the department were:

Senior Engineers	2
Junior Engineers	1
Draftsmen	1
Junior Draftsmen	1
Typists	1
Clerks	1
Total	7

DRAFTING PROCEDURES RECOMMENDED AND ALTERNATE POWER SYSTEM STUDIED

Recommendations on the drafting procedures and material lists for the 100 Area Design Engineering Division were made by a Schenectady representative of the Drafting Standards Committee. . . . . A study was made and discussions held with various groups on an alternate power distribution system within the 100 Areas utilizing two 7500 KVA turbo generator units.

REQUIREMENTS FOR G AND H AREAS PREPARED

Preliminary design specifications and drafting requirements were prepared for the "H" area. . . . . Requisitions amounting to $1,000,000 were issued on the G and H areas including orders for 13.8 KV switchgear for 151H and for all unit substations for 100 H area buildings. . . . . Preliminary topography requirements were outlined for the H area and topographical work was accelerated by the construction layout group. . . . . Various studies made for the H area consisted of: (1) Helium-Carbon Dioxide system for 115H; (2) Site determination for a new Sanitary Disposal System; (3) The use of electrical standby equipment in place of steam equipment.

DRAWING SCHEDULE PREPARED FOR DR AREA

A down draft ventilating system for 105 DR was studied and the lighting system was revised. . . . . A drawing schedule for the DR area was prepared and work progressed on various electrical features of 100 DR and FR.

CONTROL ROD PATTERN RECOMMENDED FOR PILE

A pattern with 18 or more control rods rather than 9 was recommended for the H pile. . . . . Cask lock details were approved with two locks and lids being ordered for test purposes. . . . . Detail drawings were started on the segmented discharge mechanism from which a mock-up will be made.

DESIGN WORK COMPLETED

Cast iron blocks approved and ordered. . . . . Architectural plans for the White Bluffs steel fabrication shop and the fire station were issued. . . . . Approved drawings for the gun barrel were sent to York Naval Ordnance.

DESIGN WORK IN VARYING STAGES

Right, left, and top heavy aggregate concrete shielding design for FR and H piles started. . . . . Specifications for process pumps being prepared. . . . . Flow diagram for all water services in H area started. . . . . Preliminary design of fence lighting for H areas started. . . . . Structural designs for the 105 DR building tool dolly room, near side viewing room, and back wall observation room in progress.

C-198 234-5 BUILDING

NEW DESIGN PHILOSOPHY REPORT FILED WITH WORKS MANAGER

A report on the extensive study of process equipment layout and building layout which will meet requirements in Specification Letter 234-4, 235-4 was completed and filed in the Works Manager's office. Upon approval by all interested groups, design will follow the pattern outlined.

ALL PHASES OF PART I BEING WORKED UPON BY GENERAL ENGINEERING AND CONSULTING LABORATORY

The laboratory is working upon all phases of Part I with layouts and test assemblies in preparation. . . . . The reaction vessel layout was received and the preliminary layout of a machine to perform the dry chemistry is enroute. . . . . The layouts of Part II were initiated at Hanford for transmittal to Schenectady. . . . . Three representatives of the design section, two from Hanford and one from Schenectady, visited Los Alamos for detailed information needed on design work.

PROPOSED BUILDING LAYOUT #9 STARTED

A proposed layout #9 utilizing the main principles of #8 but with detailed changes was started. The Security Principles of #8 were approved by the Atomic Energy Commission in Washington, D.C. . . . . Changes in the routing of 13.8 KV lines to the area were made to fit in with the overall expansion plans.

SEMIWORKS CART MOCK-UP TESTED

A mock-up of the semiworks cart was built and is being tested. Critical dimensions for items such as glove ports were established.

VARIOUS PLANS FROM GIFFELS AND VALLET REVIEWED

Plans and drawings from Giffels and Vallet were reviewed with the following results: (1) Proposed water filter plant layout undergoing revisions for greater detail and relocation; (2) First Aid Station preliminary plans undergoing revisions for room rearrangements; (3) Proposed boiler house extension plans undergoing modification for desired changes and suggested improvements.

C-187 REDOX

WORK PROGRESSES ON PILOT PLANT AND PRODUCTION FACILITIES DESIGN

Additional general design information covering steam supply, electrical distribution, laundry facilities, protection facilities, site location, topographic maps, meteorological data, specifications and standards has been collected and transmitted to the Kellex Corporation. . . . . Meetings transpired with Kellex personnel to review preliminary designs and supply background

information. . . . . A critical review of the Engineering Department's Specification Letters No. 15 and 16 from a design standpoint was initiated. Process and design information was discussed at Chicago and Oak Ridge by a representative. . . . . A proposed geological survey of a portion of the plant area was discussed at several meetings with representatives of the Atomic Energy Commission, United States Geological Survey, and the Health Instrument Department. The objective is to allow for accurate predictions of the rate at which toxic wastes can be pumped underground, and their resultant directional flow (presented in Document HDC-167).

LINE SIZE ENLARGEMENT AFFECTS SCALE-UP DESIGN

Enlargement of process line sizes of the Service Extraction Unit has materially affected both the design and procurement. . . . The major portion of the drawings pertaining to process equipment will be approved by mid-February and those pertaining to minor items by early March.

TELEPHONE FACILITIES FOR REDOX BUILDINGS PLANNED

Planning was done on telephone facilities utilizing a 700 line satellite switching station located between 200 E and 200 W areas.

REPORT PREPARED ON AMMONIUM NITRATE STORAGE FACILITIES

Cost estimates on alternate proposals for ammonium nitrate storage were made and a report prepared.

C-163 ADDITIONAL WASTE STORAGE FACILITIES (200 W)

LOW ACTIVITY WASTE CRIB DESIGN REQUESTED

The "S" Department requested the design of a crib to receive low activity waste from the catch tank adjacent to 153-TX diversion box. It is proposed that this additional work be carried on under sub-contract. . . . . An additional request was made for provisions in encasement design to accomodate attachment of thermo-couples to all waste lines. . . . . Numerous drawings covering piping layouts, reinforcing, cover slab, and tank sections were completed and issued.

DESIGN WORK COMPLETED

C-198 - Drawings for Roads, fences, gates, and guard houses. . . . Architectural plans for small and large Construction Badge Houses. . . . . C-187 - Preliminary engineering flow sheets for the Scale-Up unit. . . . . Structural drawings for Bldg. 321 - Scale-Up. . . . . C-163 - Various piping layouts and steel reinforcing drawings.

300 Area

LETTER OF INTENT EXTENDED FOR C-190 ADDITIONAL SERVICES (STEAM & WATER)

Final contract negotiations with the sub-contractor have been held up pending approval of Part II of the project proposal. The letter of intent has been extended. . . . . Preliminary work on electrical distribution lines in the 300 area was started.

1203206

[redacted]

DESIGN WORK COMPLETED

C-190 Boiler foundation drawings.

DESIGN IN VARYING STAGES

C-190 - Work proceeded on Boiler house piping, auxiliary drive conveyor & track hopper, ... C-199 Sewage plant.

700 Area

REVISIONS MADE TO C-201 CONSULTANTS' OFFICE BUILDING

Extra radiators were added to the plans for the 762 building due to the addition of several partitions. . . . . Lighting plans for 761 and 762 buildings were altered for partition changes. . . . . The revised plot plan showing sidewalks, fences, window guards, etc. was issued for construction.

ROAD SURFACING DECISION HELD UP C-170 ADMINISTRATION AREA IMPROVEMENT PLAN

The revised plan for area improvement was held up pending a decision by the Atomic Energy Commission as to whether Flagler Avenue should be surfaced.

1100 Area

RELOCATION OF 115 KV TRANSMISSION LINE FOR VILLAGE STUDIED

A preliminary study was made on the feasibility of relocating the 115 KV transmission line proposed for electrical supply to the Village.

REVISIONS MADE ON C-136 ADDITIONAL HOUSES AND AREAS

Extensive revisions were made on plans for "Q", "R", and "M" type houses. . . . . . Electrical feeder diagrams and distribution maps were completed for the "A" and "C" housing areas. They are being held pending a decision to rearrange houses in the present street layouts due to porch removals. . . . . Decision was made to continue area "A" as approved and to study the effect of revision on Area "C".

CHANGES IN SCOPE OF WORK FOR C-181 REPLACEMENT HOUSES INVESTIGATED

An investigation was made in changes in scope of work claimed by the subcontractor to have been made by the Design Engineering Department. . . . . A study of the subcontractor's request for extras was made. . . . . A minor explosion in one of the oil burners was investigated. . . . . A plan showing blocking supports around the chimneys in the "U" and "V" type of houses was drawn.

1230209

[redacted]

REVIEW OF DATA FOR THE DESIGN OF C-168 WATER & SEWAGE MAINS

The water supply and distribution system plans were reviewed by a Washington, D.C. representative of the Atomic Energy Commission with disclosure of several vulnerable points in design. . . . A re-check of the entire plans and a review of the sources of information and decisions by the power and water groups on both the filtration and sewage disposal plant has been made. . . . A water consultant will be in Richland in the near future to analyze the problem and issue a report. . . . . Systems for lighting and distributing power in the new sewage disposal plant were discussed with the Architect-Engineer. . . . . Transformers of the approximate size and voltage required for the pumping and filtration plants are being sought in excess stocks. These will be critical items with respect to meeting construction schedules.

DESIGN WORK COMPLETED

C-136 - Electrical distribution plans for Area B issued. . . Underground Steam line plans issued. . . . Reducing valve stations (apts.) issued.

C-156 - Transformer Building plan. . . . . Architect-Engineer plans and specifications for Columbia High School issued. . . . . Plot plan of Jefferson School Grounds and a detail plan of tennis courts issued.

US-4 - Fire Station Plans Issued.

3000 Area

RIGHT-OF-WAY PROCUREMENT WILL DELAY C-185 RR CONNECTION

Plans were received during the month to cover construction of everything necessary for the connection with the exception of the highway overpass which is undergoing revision for additional highway clearance at the request of the Washington State Highway Department. . . . . Several plans for construction and modernization of steel bridges were completed and await A.E.C. approval. . . . Actual construction has been delayed indefinitely due to procurement of right of way.

DESIGN WORK COMPLETED

C-178 CONSTRUCTION CAMP - Electrical distribution plans. . . Bank Building. . . . Hospital. . . . Change House. . . . Trailer Camp office. . . . Tavern.

1200210

[redacted]

[redacted]

ACCOUNTING DEPARTMENT

JANUARY 1948

GENERAL

Work is for the most part current, despite increase in volume. Considerable overtime was required in Payroll Divisions in January due to Social Security Reports, Withholding Tax, Returns of Information at the Source, and year-end reports. The work in Subcontractors' Payrolls Division is increasing rapidly but audit of payrolls is current except for certain job rates and overtime for which approval has not yet been received. General Accounting Division is spending considerable time auditing subcontractors' disbursements and educating subcontractors as to requirements for CPFF subcontracts.

The Cost Division devoted considerable time during the month to the preparation of the budget for the fiscal year 1949 and to preliminary work in connection with establishing a works operating budget program.

The Stores Division disbursements for the month reached an all time high of nearly $300 000. It is estimated that two-thirds of this represented material used directly or indirectly in the Construction program.

STATISTICS

General	January	Total to Date
H. W. Instruction Letters issued	4	65
Office Letters issued	--	3[illegible]
Organization Announcements issued	9	73
Supplements and Revisions issued	1	17

Employees and Payrolls	Total	Monthly Payroll	Weekly Payroll
Employees on payroll at beginning of month	7355	1412	5943
Additions and transfers in	265	42	223
Removals and transfers out	(89)	(9)	(80)
Transfers from Weekly to Monthly Payroll	---	12	(12)
Employees on payroll at month end	7531	1457	6074
Gross amount of payroll	$2,260 259	$620 299	$1 640 560
Average salary rate per hour	$1.821	$2.410	$1.676
Average salary rate previous month	$1.823	$2.429	$1.676
Overtime Payments		December	January
Weekly Payroll			
Number		2 307	2 318
Amount		$35 023	$37 279
Monthly Payroll		$ 7 175	$19 428
Number of changes in Salary Rates and Job Classifications		916	648

[redacted]

Accounting Department

Employee Plans	December	January
Pension Plan		
Number participating at beginning of month	3 937	4 041
New participants and transfers in	118	153
Removals and transfers out	(14)	(20)
Number participating at month end	4 041	4 174
% of eligible employees participating	97.2%	97.5%
Employees Retired	January	Total to Date
Number	7	15
Aggregate Annual Pensions including Supplemental Payments	$810	$2 632
Amount contributed by employees retired	228	42[illegible]

Group Life Insurance	December	January
Number participating at beginning of month	4 415	4 797
New participants and transfers in	415	418
Cancellations	(15)	(42)
Removals and transfers out	(18)	(36)
Number participating at month end	4 797	5 137
% of eligible employees participating	77.1%	78.4%
Insurance Claims	January	Total to Date
Number of deaths	1	11
Amount of Insurance	$5 500	$61 405
Amount contributed by employees	$ 59	$ 474

Group Disability Insurance - Personal	December	January
Number participating at beginning of month	5 383	5 782
New participants and transfers in	448	478
Cancellations	(10)	(18)
Removals and transfers out	(39)	(55)
Number participating at month end	5 782	6 187
% of eligilbe employees participating	92.9%	92.1%

Group Disability Insurance - Dependent		
Number participating at beginning of month	3 516	3 750
Additions and transfers in	253	210
Cancellations	(9)	(17)
Removals and transfers out	(10)	(26)
Number participating at month end	3 750	3 917

Group Disability Insurance - Claims		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	56	69
Daily Hospital Expense Benefits	62	90
Special Hospital Services	50	85
Surgical Operations Benefits	26	40
Dependent Benefits Paid		
Daily Hospital Expense Benefits	91	146
Special Hospital Services	86	140
Amount of claims paid by insurance company:		
Employee Benefits	$5 845	$8 421
Dependent Benefits	2 853	5 128
Total	$8 698	$13 549

1200212

Accounting Department

Employee Plans (Continued)	December	January
Group Disability Insurance - Premiums		
Personal - Employee Portion	$ 9 388	$10 142
- Company Portion	5 801	6 178
- Total	$15 189	$16 320
Dependent - Employee Portion	3 252	3 474
- Company	364	379
- Total	$ 3 616	$ 3 853
Grand Total	$18 805	$20 173

Annuity Certificates (For DuPont Service)	January	Total to Date
Number issued	1	45

U. S. Savings Bonds	December	January
Number participating at beginning of month	2 332	2 346
New authorizations	63	68
Voluntary cancellations	(44)	(34)
Removals and transfers out	(5)	(12)
Number participating at month end	2 346	2 368
% participating	31.9%	31.4%
Bonds issued - maturity value	$163 650	$137 200
- number	4 205	3 513
Refunds issued	48	32
Revisions in authorizations	31	51

Suggestion Awards	January	Total to Date
Number of awards	19	63
Total amount of awards	$245	$730

Employee Sales Plan	January		
	Total	Major Appliances	Traffic Appliances
Applications received for appliances	120	32	88
Notices of availability of appliances sent to employees	75	2	73
Certificates issued	47	2	45
Certificates redeemed by Richland Electric Company	38	1	37
Certificates voided	1	---	1

Salary Checks Deposited	December	January
Weekly	793	826
Monthly	677	708
Total	1 470	1 534

Special Absence Allowance Requests	
Number Submitted to Pension Board	8
	18*

*Includes 7 cases resulting from absences during last part of 1946 when we were operating under du Pont policy on absences.

Absenteeism (Weekly Paid Employees)	1947	1948
January 1 to January 25	2.03%	2.17%

Accounting Department

Subcontractors' Payrolls	December	January
Number of Subcontractors Employees on Payroll At End of Month:		
Cost-Plus-A-Fixed Fee Subcontractors		
Guy F. Atkinson Company and J. A. Jones Construction Company	5 767	7 286
Sub-subcontractors		
Newberry-Neon Company	229	386
Urban, Smyth, Warren Company	457	839
*Newport, Kern & Kibbe	14	16
*Mehring & Hansen	27	26
*Bailey Plumbing & Heating Company	4	-0-
*Raecolith Flooring Company	10	-0-
*V. S. Jenkins Company	6	32
*Lone Pine Roofing & Paving Company	5	3
*E. L. Knight Electric Company	-0-	16
The Kellex Corporation	154	248
Gifiels & Vallet, Inc.	35	51
National Carbon Company	173	171
C. C. Moore & Company, Engineers	23	21
Morrison-Knudsen Co., Inc. (Tank Farm)	125	370
Sub-subcontractors		
Trowbridge & Flynn Electric Company	-0-	8
Morrison-Knudsen Co., Inc. (Track Maintenance)	99	96
Lump Sum Subcontractors		
C. C. Moore & Company, Engineers	5	5
John L. Hudson	460	177
Sub-subcontractors		
Twin Cities Construction Company	7	5
Payne Plumbing Company	28	15
E. L. Knight Electric Company	29	34
Edmondson's Blind & Shade Company	1	1
Grant Construction Company	8	-0-
Permawall Construction Company	82	141
B.V.K. Heating Company	33	31
Western Sheet Metal	8	7
J. P. Head	8	2
L. D. Rieder	59	71
Allen Catlin Company	4	-0-
H. D. Hacker	5	3
C. & C. Plumbing Company	16	8
Pacific Roofing Supply Company	7	7
Perfect Seal Weather Strip Company	1	1
Catlow Transport Company	51	33
J. Gordon Turnbull, Inc.	23	27
J. A. Terteling	-0-	90
Curtis Gravel Company	13	11
John S. Villesvik	1	1
G. A. Pherson, Archetectural Engineers	4	3
Dewitt C. Griffin & Associates	19	11
H. Brandt Gessel & Associates	5	1
Total	8 005	10 254

*Lump Sum Sub-subcontracto. operating under a Cost-Plus-A-Fixed Fee Subcontrac

4.

Accounting Department

General Accounting	December	January	Total to Date
Charges to Cost			
Payrolls - GE only	$2,641,652	$ 2,266,819	$28,293,358
Other Expenditures & Accruals	8,296,399	8,841,890	41,362,843
Government Cost Transfers	1,076,593	490,639	10,576,326
Gross Charges	$12,014,644	$11,599,348	$80,532,497
Less Revenue:			
Village	220,433	231,964	3,515,836
Medical	57,125	93,590	808,499
Telephone	4,536	4,396	115,075
Other	8,768	8,148	75,965
Net Charges to Cost	$11,723,782	$11,261,210	$76,387,121

Payments Made to Subcontractors thru January 31, 1948

Subcontractor	Contract No.	Amount of Contract	Amount Paid To Date	Amount Withheld 1/31/48
Atkinson-Jones	G-133	CPFF		
Payrolls			$7,391,531.67	$482,052.39
Materials*			8,269,540.95	- 0 -
Morrison-Knudsen Co.,Inc.	G-110	$1,779,258.00	1,725,880.26	53,377.74
X-Ray Products Corp.	G-115	59,238.40	59,238.40	Retainer Paid
Morrison-Knudsen Co., Inc.	PHX-13693	CPFF		
Costs			719,566.60	- 0 -
Fixed Fee			49,005.00	5,445.00
Lone Pine Roofing Co.	G-134	52,875.13	47,587.62	5,287.51
National Carbon Co.	G-135	CPFF		
Materials**			810,201.55	- 0 -
Payrolls			3,458.00	- 0 -
G. A. Pherson & Associates	G-137	18,700.00	4,675.00	- 0 -
John S. Villesvik	G-138	3,675.00	768.75	- 0 -
E. Brandt Gessel & Associates	G-139	11,150.00	2,787.50	- 0 -
DeWitt C. Griffin & Associates	G-141	148,330.00	120,147.30	18,586.45
John L. Hudson & Associates	G-142	3,720,857.50	2,809,619.50	312,179.71
Catlow Transport Co.	G-143	226,390.92	215,071.37	11,319.55
Northwest Hauling Co.	G-144	155,403.07	139,862.76	15,540.31
Sperry Products	G-147	1,875.00	1,875.00	- 0 -
The Kellex Corp.	G-148	CPFF		
Advance			50,000.00	- 0 -
Payrolls			42,500.00	4,848.21
The Catlow Transport Co.	G-149	13,280.75	11,771.55	1,307.95
D. A. Whitley Co.	G-152	Rental of Equip.	11,165.51	- 0 -
Roy L. Bair Co.	G-153	Rental of Equip.	15,631.00	- 0 -
Morrison-Knudsen Co., Inc.	G-160	CPFF		
Payrolls			79,879.76	8,068.26
Materials			- 0 -	- 0 -
Total			$22,582,165.05	$917,993.31

* Amount Paid includes $7,381,101.57 provisional reimbursement of which $5,155,444.04 has been liquidated by audited Atkinson-Jones billing.

** Amount Paid includes $500,000.00 advance

Accounting Department

General Accounting (Continued)

	Commitments	Expenditures
Construction Commitments and Expenditures		
July 1, 1947 to January 3, 1948	$43,110,911	$18,156,779
July 1, 1947 to January 31, 1948	55,252,986	25,810,697

Number of Accounts Payable Vouchers Entered	December	January
General Electric	4,338	4,474
du Pont	2	22
Total	4,340	4,496

Amount of Accounts payable Vouchers Entered		
General Electric	$ 9,879,593.19	$ 9,37[illegible],528.1[illegible]
du Pont	[illegible],281.05	8,374.76
Total	$ 9,880,874.24	$ 9,[illegible],153.4[illegible]

Amount of Checks Issued		
General Electric	$ 9,411,568.51	$10,036,835.61
du Pont	3,269.91	1,486.04
Total	$ 9,414,838.42	$10,038,371.65

Number of Checks Issued		
General Electric	3,065	3,303
du Pont	5	5
Total	3,070	3,308

Public Vouchers (1034) Submitted to AEC		
Vouchers not reimbursed at beginning of month	$ 2,912,338.65	$ 4,056,487.03
Vouchers submitted for reimbursement during month	7,872,093.63	9,407,416.94
	10,784,432.28	13,463,903.97
Vouchers reimbursed during month	6,727,945.25	8,241,657.99
Vouchers not reimbursed at end of month	$ 4,056,487.03	$ 5,222,245.98
Number of vouchers not reimbursed at beginning of month	78	71
Number submitted during month	192	316
	270	387
Number reimbursed during month	199	252
Number of vouchers not reimbursed at end of month	71	135

Public Vouchers not Submitted to AEC		
Pre-Audit Vouchers (1035) Issued	$ 2,158,176.18	$ 4,108,714.34
Pre-Audit Vouchers (1035) not Issued	6,386,925.93	5,707,546.48
Total Unbilled Items	$ 8,545,102.11	$ 9,816,260.82

General Accounting (Continued)	December	January
Public Vouchers not Submitted to AEC		
Number of Pre-Audit Vouchers Issued Awaiting AEC Approval	122	98
Items Over 60 Days Old Not Billed to AEC on Public Voucher (1034)		
Accounts Payable	$195,358.10	$302,961.56
Accounts Receivable (Refunds)	308.43	500.10
Cash Over and Short	17.15	-0-
Freight	2,235.60	5,692.64
F.O.A.B.Taxes - Employer's Portion	15,040.36	25,446.68
Payroll Deductions		
Elfun Trust	1,370.00	2,105.00
F O.A.B. Taxes	13,013.35	25,809.82
Telephone	7,441.67	11,266.20
U.S. Savings Bonds	59,521.50	89,238.50
Disability Insurance	23,049.58	-0-
Salaries	675,701.49	1,073,261.20
Subcontractor's Payrolls	137,624.95	177,700.46
Subcontractors Retainers-Accrued	262,496.31	256,058.66
U.C. Taxes - Federal	45,168.55	117,057.14
U.C. Taxes - State	40,620.69	68,761.78
Total	$1,478,947.53	$2,155,859.74
Cash Receipts - General Electric		
Accounts Receivable		
U. S. Government	$6,727,945.25	$8,241,637.99
Rents	64,203.23	74,785.37
Hospital	39,459.34	49,501.74
Telephone	3,970.35	4,986.23
Miscellaneous	1,909.25	4,207.79
Employee Sales	1,298.80	1,797.35
Bus Fares	9,105.55	8,345.60
Educational Program	466.14	7.00
Government Advances	12,000,000.00	-0-
All Other	4,429.03	5,996.49
Total	$18,852,786.34	$8,391,635.56
Cash Receipts - duPont		
U.S. Government	$ 1,865.22	$ 2,683.07
Hospital	35.00	90.00
Vendors' Refunds	-0-	10,532.36
All Others	-0-	162.51
Total	$ 1,900.22	$ 13,467.94

General Accounting (Continued)	December	January
Cash Advances and Expense Accounts		
Cash Advance Balance at end of Month	$ 3,823.77	$ 18,911.59
Cash Advance Balances Outstanding over one month	-0-	850.00
Travel Orders Received	60	115
Traveling and Living Expenses		
Paid Employees	$ 24,384.54	$ 12,555.29
Billed to Government	$ 26,473.78	$ 13,527.87
Balance in Variation Account at end of month	$ 9,023.33CR	$ 9,995.91 CR
Kadlec Hospital Accounting		
Accounts Receivable Balance at Beginning of Month	$ 46,263.96	$ 45,520.28
Total Invoices During Month	57,341.00	70,987.36
Total	$103,604.96	$115,507.64
Less Cash Received and Payroll Deductions	58,084.68	66,471.79
Accounts Receivable Balance at End of Month	$ 45,520.28	$ 50,035.85
Property		
Number of Transfer Notices Received	958	904
Number of Items Affected	12,864	10,090
Number of Items Tagged		
New Items	13,035	12,298
Replacements	2,695	556
Total	15,730	12,854

Inventories	Balance Beginning of Month	Received	Disbursed	Balance end of Month
Essential Materials	$2 475 342	$612 091	$339 136	$2 748 297
Memo Employee Sales	10 023	553	2 608	7 968
Precious Metals	41 654	-0-	-0-	41 654
Returnable Containers	17 582	2 083	4 333	15 332
Spare Parts	1 526 256	16 700	43 604	1 499 352
Stores for Cash Sales to Employees	32 873	5 555	5 502	32 926
Stores - General	2 279 975	20 691	182 857	2 117 809
Stores - Material Held for future use	203 864	59 321	263 185	-0-

Stores	December	January
Number of Items added to Stores Stock	358	822
Number of Items deleted from Stores Stock	42	140
Items in Stores Stock at month end	48 110	48 792
Receiving Reports issued	5 212	6 4[illegible]5
Shipments on hand not checked	170	16[illegible]
Material Exception Reports issued	323	20[illegible]
Material Exception Reports cleared	316	197

1208218

Accounting Department

Stores (Continued)	December	January
Material Exception Reports open at month end	22	32
Certificates of Inspection issued	30	28
Certificates of Inspection cleared	19	40
Certificates of Inspection open at month end	54	42
Store Orders filled	21 874	21 845
Emergency Store Orders filled	7	3
Returnable Containers received	600	1 903
Returnable Containers shipped	1 016	572
Returnable Containers on hand at month end	4 632	5 963
Returnable Containers on hand over 6 months	1 604	1 903
Returnable Container Return Orders received	26	16
Returnable Container Return Orders closed	7	7
Returnable Container Return Orders on hand at month end	227	236
Shipping Orders Received	57	80
Shipping Orders closed	49	75
Shipping Orders on hand at month end	30	35
Purchasing		
Operations Requisitions received	2 721	2 469
Operations Requisitions placed	3 042	2 671
Operations Requisitions on hand at month end	921	719
HW Orders placed	1 932	1 674
Alterations issued to HW Orders	174	192
Orders placed by Government	142	158
Orders placed for material controlled locally by the Government	3	3
Orders placed for Government surplus stock	9	6
Requests to Expedite received	277	324
Miscelleneous Clerical		
Office Machines repaired in shop	295	269
Office Machine service calls	271	216
Telephone Lines working as Class A	271	282
Telephone Lines working as Class C	305	329
Total Official Telephones	576	611
Telephone Lines Working as Class B-1	1 330	1 331
Telephone Lines Working as Class B-2	85	86
Total Non-official Telephones	1 415	1 417
Telephone lines vacant	9	172
Items of First Class Mail received	52 292	47 975
Items of Parcel Post received	1 074	1 181
Items of Registered Mail received	200	207
Items of Insured Mail received	132	194
Items of Special Delivery Mail received	189	242
Amount of postage used on meter machines	$1 307.02	$1 719.34
Multilith orders received	162	450
Multilith orders completed	152	429
Multilith orders on hand at month end	25	46
Mimeograph orders received and completed	2 302	2 759
Ditto orders received and completed	5 355	6 167
Telegrams sent	3 228	3 584
Telegrams received	3 112	3 531

PERSONNEL AND ORGANIZATION	December	January
Number of employees on Payroll		
At beginning of month	612	621
Removals and transfers out	(22)	(13)
Additions and transfers in	31	34
Number at end of month	621	642
% of termination	3.6%	2.1%
% of absenteeism	2.6%	2.8%

Reasons of increase of 21 in number of Accounting Department employees during January are as follows:

Weekly Payroll - 3 additional employees.
Required because of increased number of employees paid.

Subcontractors Payroll - 1 additional employee.
Increase in number of employees on payrolls of subcontractors.

Cost - 1 additional key punch operator.
Added to replace an employee who had given notice that she was terminating in February.

Stores - 11 additional employees.
Required to handle increase in the Construction Receiving Section activities.

Miscellaneous Clerical - 2 additional employees.
Required in telephone exchange due to increased traffic load in the exchange and the addition of a 4-12 shift at Kadlec Hospital.

Field Clerical - 3 additional employees.
Two added to replace employees who have given notice of termination and one additional employee added to take care of increased activity in Process Control for 100 Areas.

Injuries	December	January
Major	0	0
Sub-Major	1	0
Minor	26	23

PERSONNEL AND ORGANIZATION (Continued)

Number of Accounting Department employees and open employment request as of February 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	6	7	13	0	1	0	1
General Accounting	110	11	121	4	1	9	14
Weekly Payroll	49	6	55	4	0	1	5
Monthly Payroll	10	2	12	0	0	0	0
Sub-Contractors' Payrolls	11	1	12	0	1	10	11
Purchasing	25	7	32	0	2	0	2
Cost	26	3	29	0	0	2	2
Stores	199	11	210	0	0	10	10
Clerical	84	3	87	9	2	7	18
Field Clerical	66	3	69	2	3	2	7
Methods	0	2	2	0	0	0	0
Total	586	56	642	19	10	41	70

Open Replacements may be summarized as follows:

Clerks	4
Junior Clerks	21
Office Machine Operators	9
Telephone Operators	9
Secretary	1
Stenographers	4
Typists	6
Office Helpers	12
Messengers	4
Total	70

Effective January 1, 1948, the following were made Assistant Supervisors of the Property Section:

G. R. Bloomstrand	Field Crews
B. Schauss	Records

Helen Miller, Supervisor of the Mail Room Section in the Miscellaneous Clerical Division terminated January 16, 1948.

SECTIONAL ACTIVITIES

Cost

The issuance of Project Opening Notices by the Cost Division was discontinued January 21 due to the Work Authority Procedure recently set up by the Construction Department.

Revisions to Construction Cost Building Codes as proposed by Design and Construction Department were adopted to become effective February 1. Administrative, General Expense and Inventory Codes were not affected by revisions. The responsibility for assigning new Construction Cost Codes and for the issuance of Construction Cost Code Books was transferred to the Cost Engineering Division of the Construction Department.

A detailed study of employee transportation costs for the project was started. This study was required in order to furnish information for an AEC representative who is visiting the project and reviewing the plant employee transportation services.

Considerable time was spent in accumulating information for use in reviewing the budget as requested by the AEC. Several revisions were made to the budget affecting the fiscal year 1949.

Additional cost data detail not available from Cost Statement Summaries was furnished each Department during the month. This data was to be used as a guide in preparing a detailed budget of expenses to be incurred by operating departments by quarters for 1948.

General Accounting

Accounts Payable

This month 4,474 Accounts Payable Vouchers were entered. This is an increase of 136 over the number entered in December, which is accounted for by the increase in number of Construction Purchase Orders which are being issued.

Vouchers on hand at the end of the month, including paid and unpaid vouchers, amount to $1,090,000 and total 1,438. The amount of unbilled Accounts Payable Vouchers on hand is $3,016,000, a decrease of $295,000 over December. The amount of reimbursable Accounts Payable Vouchers entered in January was $5,874,000.

Of the 42 people in this section, 31 are handling operations purchase orders, 3 are handling construction purchase orders and 8 are engaged in handling subcontractors' billings.

General Accounting

Accounts Receivable

An increase in the volume of this work is anticipated as regards both house and telephone rentals. To date, however, only 17 new house leases have been executed and only a few new telephones have been installed. During the next six months house leases executed will increase considerably.

During this month a change from machine posting to hand posting of telephone toll statements was inaugurated. This eliminated a rush period at the end of the month since hard postings of these statements are being made on a daily basis throughout the month, whereas when posting by machine was done, all tickets were accumulated until the end of the month. Using this method, it is expected that present personnel can handle an increased volume of work.

There were 244 single dormitory rooms leased during the month in the six new dormitory buildings which were moved to Richland from the Pasco Naval Base.

Revenue from the North Richland barracks amounted to approximately $29,000, an increase of $8,000 over December.

Billings to the Government

January billings to the Government of $9,407,000 showed an increase of $1,700,000 over the amount billed in December. Total unbilled items to date amount to $9,816,000 which is an increase of $1,271,000 over last month. The amount of unbilled salaries increased by $1,623,000 and now totals $3,767,000. Vouchers representing 80% of the total unbilled balance are either in the hands of the AEC Audit Branch awaiting audit and approval or are included in unbilled salaries. The remaining 20% represents work which is currently being processed.

The number of deletions by the AEC Audit Branch remains at less than 1% and all have been cleared and rebilled. Two inquiries from the General Accounting Office were received and were satisfactorily answered.

Cash Advances and Cash Change Funds

The fact that 115 Travel Orders were issued in January as compared with 61 which were issued in December accounts for the increase of $15,000 in the balance of the Cash Advances account. Accounting has been made for all cash advances issued prior to January 1 with the exception of two.

General Accounting

Cash Advances and Cash Change Funds (Continued)

One was issued to an employee who is still on his assigned trip, and for the other a report has been submitted which has not yet been approved.

There are now 37 active Cash Change Funds which total $3,785.

Kadlec Hospital Accounting

Total invoices issued during the month, amounting to $70,987.36, increased $13,646.36 over those issued last month. At the same time, the month-end receivable balance increased by $4,515.57 to $50,035.85.

Of the $66,471.79 in credits applied to the receivable account, $49,501.74 represented cash collections. This also represents an increase in cash collections over December by $10,042.40. About 50% of invoices issued are settled by cash and all patients are urged to settle their accounts in this manner.

A procedure review is now underway and concerns the advisability of installing new posting machines and cash registers.

Property

It was necessary for the Field Inventory Clerks to work overtime on two Saturdays, January 3 and January 10, to reduce the backlog of Class B Property which had accumulated at the receiving depots.

Because of the need for six day a week coverage at North Richland, the work of the field men was scheduled so as to have a crew working each week Tuesday through Saturday. No overtime work is anticipated, and there is no backlog of work at the present time.

The use of decal identification tags instead of metal tags was begun on January 28. However, where the use of a decal tag is not practical, metal tags will continue to be used. This procedure was proposed to conserve manpower and was outlined in our letter to the Commission dated January 16, which was approved on January 21, 1948.

Miscellaneous Clerical

Work on installation of dial telephone system and board in the 3000 Area started on January 13. It is estimated that reassignments of numbers and installation of 3000 Area dial telephones will be completed about March 1, and new telephone directory will be published shortly thereafter.

Miscellaneous Clerical (Continued)

Because of continued and increasing heavy traffic on leased lines, preliminary requests for two additional leased lines, one to Portland and one to Seattle, were made.

D. E. Haley made a survey of commercial office machine repair shops located in Portland on January 15 and 16. From this survey, preliminary plans for improving the office machine repair shop were drafted and submitted to the Project Engineering Section.

Payrolls

The following "Request for Reimbursement Orders" have not yet been approved by the Atomic Energy Commission:

Date of Request	Date Transmitted to Commission	Items Covered by Request
8/26/47	8/27/47	Seven exempt job classifications for Design and Construction
8/26/47	8/28/47	Five exempt job classifications for Construction Purchasing
8/26/47	8/28/47	Exempt job classifications for Expediting Supervisor and Expeditor
9/2/47	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

Monthly salaried payrolls for September, October, November, and December 1947 have not been approved as reimbursable by the Government, as they have not yet approved AEC Forms 37 covering the following changes:

	September	October	November	December
Merit Salary Increases	22	18	24	10
Promotional Increases	1	10	3	37
Additions to Payroll	10	57	98	35
As a Memo				
Changes in Classification -		1	7	5

The following year-end reports were completed during the month of January:

1. Report of Fourth Quarter taxable earnings under the Social Security Act

1200225 15.

Payrolls (Continued)

2. Annual Report of taxable earnings under the Washington State Unemployment Act

3. Report of Earnings for Federal Income Tax purposes

4. Annual Report to the Pension Division of individual contributions under the General Electric Pension Plan

5. Report to General Office of eligible earnings under General Profit Sharing Plan

6. Semi Annual Organization Chart and Personnel List for the AEC

Withholding Statements, form W-2, were delivered to all employees with salary checks distributed on Friday, January 30.

Only the following discrepancies were brought to our attention by the Government Audit Section as result of complete audit of weekly payrolls:

1. One error in salary rate resulting in a gross overpayment to an employee of $29.40. The error was previously discovered by the Payroll Division when checking the payroll against the employment record cards and the adjustment of the error had been made on a subsequent payroll.

2. There were seven cases of hours posted incorrectly from the summary cards to the payroll journal. However, payment was calculated correctly.

3. One employee's payroll number was shown incorrectly.

4. Five postings were illegible due to "stacked" postings. Our copy of payroll was corrected but the Government copy was not.

5. Three adjustments on the payroll were not clearly explained.

6. One deduction was posted in the wrong column. Our copy of payroll was corrected but the Government copy was not.

Effective January 1, we began operating as an issuing agent for the sale of United States Savings Bonds, Series E, on the payroll allotment plan. Prior to that date we were operating as a subagent for the Richland Office Seattle First National Bank. Before the change over there was no inventory of unissued bonds, that is, bonds were purchased each week as needed from the Richland Bank. However, since we have become an issuing agent it has become necessary to maintain an inventory of unissued bonds. Control of

Payrolls (Continued)

this inventory is the responsibility of the Monthly Payroll Division. An inventory account has been set up on the general books and reconciliation of this account is made once a month by the Monthly Payroll Division.

As of January 1, weekly salary checks were being distributed to employees as follows:

	No. of employees
Deposited in Bank	791
Delivered by Supervision	2,572
Delivered at Bus Terminal	2,580
Total	5,943

Subcontractors' Payrolls

Audit of Atkinson-Jones payrolls #21 to 24 inclusive, covering the period December 14, 1947 to January 14, 1948, amounting to $1,767,277.14, (gross amount to date $5,808,628.15) was completed during January except for final audit of the rates for those manual classifications not yet approved and overtime for which approvals have not yet been received.

Appendix C of the Atkinson-Jones contract, covering salary and wage rates and employer policies, has been approved in part. In addition, Reimbursement Orders were received from the Atomic Energy Commission, authorizing the rates as proposed by Atkinson-Jones for eight classifications covering Journeymen, Electricial Apprentices, and Foremen. Reimbursement Orders covering the rates of pay to thirty-five (35) remaining classifications are required in order to have complete approvals for all rates currently being paid on the Atkinson-Jones payrolls. Of these thirty-five (35) needed Reimbursement Orders, formal requests have been made through regular channels for twenty-two (22) and have been approved by the Construction Department and submitted to the Atomic Energy Commission for approval. The remaining thirteen are in process by Atkinson-Jones and the Construction Department.

An additional 4,219 Personnel Records (10,719 to date) for Atkinson-Jones and their C.P F.F. subcontractors' manual employees have been processed during January for accuracy of job code, classification, and the rates checked against the approved rate schedules wherever possible. In those cases where the job rate lacked approval, the rates have been checked against the proposed schedules for clerical errors. A total of 896 Reclassifications for Manual Employees were also processed during the month.

During January, 595 A.E.C. Forms 37, requesting salary approvals for Atkinson-Jones non-manual employees, were processed for accuracy, making a total of 1,825 received to date. Of the 1,825 received to date, 1,351 (non-exempt) have been approved by the Accounting Department and the remaining 474 (exempt) have been forwarded to the Construction Department

Subcontractors' Payrolls (Continued)

for review and necessary approvals.

Reimbursement to Atkinson-Jones for payrolls during January exclusive of their C.P.F.F. Subcontractors totalled $2,103,450.79, which brings the total reimbursement to date to $6,554,630.43.

Reimbursement was also made to Atkinson-Jones during January for the employer's portion of State and Federal Taxes for the fourth quarter 1947 in the amount of $175,370.81, which brings the total reimbursement to date for employer's portion of taxes to $194,393.11. No reimbursement of employer's portion of taxes for Atkinson-Jones C.P.F.F. Subcontractors has been made as evidence of payment by Atkinson-Jones has not been submitted.

During January, preliminary audit of Urban, Smyth, Warren Company and Newberry-Neon Electric Company payrolls #12 to #14 inclusive, covering the period from December 21, 1947 to January 14, 1948 was completed. As these two companies are subcontractors of Atkinson-Jones, final audit of some manual rates cannot be made until the necessary approvals have been granted. Approval was received, however, from the Atomic Energy Commission to discontinue reimbursement on the 90% basis and effective with payroll #13, a policy of 100% reimbursement was initiated. The total amount reimbursed Atkinson-Jones to date for Urban, Smyth, Warren Company and Newberry-Neon Electric Company payrolls is $433,391.72 and $209,116.41 respectively.

A preliminary audit was performed during January on Morrison-Knudsen Company payrolls #1 to #7 inclusive, covering the period December 4, 1947 to January 17, 1948, and amounting to $79,879.76.

Approval was received from the Atomic Energy Commission to reimburse Morrison-Knudsen Company 90% of the net payrolls and reimbursement during January was effected in the amount of $71,811.50. Final audit of rates on these payrolls has been deferred until the rates and salary ranges have been approved by General Electric and the Atomic Energy Commission.

No additional reimbursement was made to The Kellex Corporation during January; however, payrolls for October and November have been received from New York, properly certified by the Commission's Auditor in New York. As The Kellex Corporation's Welfare Plans and Salary Ranges have been approved by the Atomic Energy Commission for work performed on other contracts, approval was given for 100% reimbursement of payrolls prior to the approval of Appendix "C" to the Kellex contract. An additional 118 A. E. C. Forms 37 have been received and processed, making a total of 270 received to date.

Approval to reimburse C. C. Moore & Company, Engineers for approximately 90% of their first two payrolls was also granted by the Commission during

Subcontractors' Payrolls (Continued)

January; however, approval for additinal reimbursement was withheld, pending the approval of the Appendix "C" to the C. C. Moore & Company contract.

Only a mechanical audit and audit of time records has been performed on the first six (6) C. C. Moore payrolls as the Appendix "C" to the contract has not been submitted.

No information has been received from the Atomic Energy Commission concerning either the original rate schedules or the general adjustment in the rates of hourly employees of the National Carbon Company at Morganton, North Carolina.

Reimbursement, to date, is still limited to only the salaries paid by the New York office of the National Carbon Company.

Representatives of J. A. Terteling & Sons were informed of the payroll requirements of a lump-sum subcontractor.

Purchasing

There was virtually no change in the availability of hard to get items including building materials, electrical apparatus and some carbon steel products.

During the month, orders were placed for first and second quarter 1948 requirements of stainless steel and carbon steel in bars, angles and structurals. However, on the carbon steel items of pipe, sheets and rail, an extensive check of the steel industry revealed that it is practically impossible to obtain these products without assistance in the form of directives or negotiated industry allocations emanating from Washington, D. C. This assistance was requested of the A.E.C. An order was placed for 4,000 pounds of Bismuth Metal bars which will be used to produce Bismuth Subnitrate here at the Hanford Works.

An order for 10,000 cans, manufactured to commercial tolerances and finish was placed with the Aluminum Company of America. The cans used now are manufactured to close tolerances and cost $190.00 per thousand; the cans ordered have wider tolerances and cost $92.20 per thousand. The commercial grade cans were ordered for testing purposes. Subcontracts covering the installation of two freight elevators, one for Building 703 and one for Building 722, were submitted to the A.E.C. for approval.

Stores

The Excess and Salvage office was moved from Warehouse 713 to what was formerly the old Signal Corp warehouse. This move was made in order to

Stores (Continued)

consolidate field and office forces in the Excess and Salvage Section and to make more office space available in 713 for the Clerical Section. Suitable office space, toilet facilities, etc. were available in the Signal Corp Warehouse to accomodate the office personnel without additional cost to the project.

Arrangements were completed with the Commission during the month to transfer auditing of subcontractors' Receiving Activities from the Stores Division to the Commission's Property and Supply Division. This change was made to permit seven Stores Division experienced checkers to apply their efforts to move productive work in connection with handling Construction Receiving activities.

Vacation schedules for 1948 were completed during the month.

Stores Disbursements hit a new high of approximately $300,000 during the month. This compares with an estimated normal activity of approximately $100,000. The increase is attributed directly and indirectly to the current Construction program.

[redacted]

DECLASSIFIED

HW-731

PROJECT & RELATED PERSONNEL

GOVERNMENT EMPLOYEES	12-31-47		1-30-48	
Civilian Personnel - Atomic Energy Commission	309		310	
Civilian Personnel - G. A. O.	2		2	
Commissioned Officers	1		1	
Total		312		313
HOLLAND WELLMAN PERSONNEL				
Commercial Facilities	887		855	
Organizations, Clubs, Etc.,	60		70	
Schools	216		222	
Churches	24		24	
Total		1137		1181
MORRISON-KNUDSEN PERSONNEL (Renton City)		97		98
CONSTRUCTION SUB-CONTRACTORS				
Atkinson & Jones	5558		6841	
Newport Kern & Kibbe	15		14	
John L. Hudson Co.,	435		200	
Twin City Construction Co.,	-		5	
B. K. V. Heating Co.,	32		31	
Chicago Canteen Co.,	154		337	
Dewitt C. Griffin & Associates	20		11	
Carlow Transport Co.,	58		33	
Newberry Neon	215		409	
Urban, Smyth, Warren Co.,	438		857	
Payne Plumbing	17		6	
E. C. Knight Electric	35		34	
Grant Construction	12		-	
J. B. Head Co.,	9		9	
L. D. Rieder	56		71	
H. D. Hacker	4		4	
Kellex Corp.,	154		248	
J. Gordon Turnbull	23		27	
Giffels & Vallet, Inc.,	34		31	
Permawall Construction Co.,	69		144	
Stabberts	7		7	
Allen Catlin Co.,	4		-	
C. & C. Plumbing Co.,	15		8	
Morrison-Knudsen Co.,	203		388	

1208231

[redacted]

[redacted]

HW-5731

CONSTRUCTION SUB-CONTRACTORS	12-31-47		1-30-48	
Edmondson	1		1	
Pierson-Architects	23		3	
C. C. Moore	23		24	
Mahring & Hanson	24		25	
Jenkins Insulating Co.,	4		25	
Western Sheet Metal	2		-	
Curtis Sand & Gravel	10		11	
National Carbon/Carbide Co.,	175		186	
Lone Pine Roofing Co.,	-		3	
Trow Bridge & Flym Electric Co.,	-		8	
J. A. Terteling & Son	-		88	
Total		7,809		10,111
GENERAL ELECTRIC PERSONNEL		7,352		7,520
GRAND TOTAL		15,707		19,218

1208232

[redacted]