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1 - H. A. Winne

2 - C. G. Suits, Schenectady

 $\frac{n}{H}$ 3 - G. R. Prout

4 - J. R. Rue # 5 - C. N. Gross # 6 - A. B. Greninger

7 - W. E. Johnson

8 - Hanford Operations Office

Attention: F. C. Schlemmer, Manager

9 - Hanford Operations Office

Attention: F. C. Schlemmer, Hanager

#10 - Hanford Operations Office

Attention: F. C. Schlemmer, Manager

Wie Kellases 191 - Hanford Operations Office

Attention: F. C. Schlemmer, Manager

#12 -Hanford Operations Office

Attention: F. C. Schlemmer, Manager

#13 - Hanford Operations Office

Attention: R. W. Richardson, Historian;

#14 - 700 File

#15 - 700 File

#16 - 700 File

EC Division of

March 20, 1950

HAMFORD WORKS

LIONTHLY REPORT

FEBRUARY 1950

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GENERAL SUMBARY

FEBRUARY, 1950

DECLARACTE

MANUFACTURING DIVISIONS

Production Divisions

A total of 62.3 tons of metal was discharged at an average of 90 percent of the goal concentration. One-half ton was discharged at 137 percent of the goal concentration. The pile operating efficiency was 92.8 percent. The operating levels at month end were 275 MW at P pile, 305 MW at D and F piles, and 330 MW at H pile.

A total of 91 tons of acceptable slugs was canned at a yield of 93.2 percent. The machining yield of 77.3 percent set a new record high. The melt plant produced 19 tons of billets at a yield of 67.8 percent.

Sixty-eight batches were started in the Canyon Buildings, with 68 being processed through the Concentration Buildings, and 65 through the Isolation Building. The average purity of completed batches from Isolation was 98.6 percent.

Mechanical Divisions

The severe cold weather and excessive snowfall handicapped activities of the Division throughout the month and created a large volume of additional work. Difficulty was experienced with automotive equipment, freezing of water lines, intakes, and reservoirs, and ice endangering the Yakima River Bridge at George Mashington Way. The temporary false work piling on the UP-NP Railroad Bridge was removed.

Inspection by boroscope of 87 safety rod thimbles revealed that 14 were corroded and will require replacement. Two stainless steel knuckle jointed safety rods having flexibility to accommodate thimble distortion resulting from graphite expansion were installed at 100-D Area.

The electrical demand of 88,200 KW for the entire electrical system reached an all time high coinciding with the cold weather,

The installation of the IBM temperature monitor system at 100-H Area was completed and is operating satisfactorily. It is planted to install similar units in 100-B, 100-D, and 100-F.

A twelve inch sanitary water line in the 200-East Area failed and was repaired. The reason for the break could not be established, but it was probably due to the severe cold weather.

Continuing progress is being made in reducing inactive Stores inventory, During the month \$15,155 worth of material was excessed.



TECHNICAL DIVISIONS

THE SOUTH

Pile Technology Division

During February the Pile Technology Division became so firmly committed to work on an expanded P-10 program that it was necessary to suspend almost all technical work in support of design of new plutonium producing piles.

The atmosphere of the B Pile was converted to a nominal 100-% CO2 during the month.

Fracture tests on the two slugs which caused difficulty during discharge in January showed conclusively that both slugs had been incompletely transfermed into the beta phase during canning.

Sample tubes containing Group V material were discharged satisfactorily at 556 MD/ton.

Initial results indicate that the accumulation of abnormally large amounts of pressure drop film (by excluding test slugs from the pile purge) has no major effect on slug corrosion rates.

Graphite samples which had been irradiated for $2\frac{1}{2}$ years at low temperature recovered 75% of their original expansion during a two month irradiation at 335° C.

Metallurgical studies show that solution heat treatment of extruded P-10-A alloy for four hours at 580°C eliminates much of the second phase; this second phase is believed to be a large contributing factor in the initial gas content of unirradiated slugs.

Separations Technology Division

Production testing in the Separations Plants of slower rates of phosphoric acid addition, the use of single-distilled hydrofluoric acid, and metathesis reutine has resulted in favorable gains in yields, essential materials economy, or time cycle advantages. A number of nonroutine process operations, occurring inadvertently, were corrected by reworking operations resulting in near-standard final waste losses. Corrections of equipment misalignment in plutonium metal fabrication Pressing operations and careful attention to operational performance have produced a continuous series of satisfactory metal shapes. Improved Coating performance in these operations permitted the attainment of February production commitments, and the over-all promise of attaining the March commitments is extremely good.

In Redox and Metal Waste Recovery process development, forty-one additional solvent extraction column runs were made during the past month, all on TBP process studies. Extensive improvements in TBP packed column performance were separately obtained by the addition of sodium fluosilicate to the feed and by pulsing the solvent feed. A wide range of TEP process





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conditions has been investigated, establishing considerable flexibility for tailoring flow sheet conditions. Pulse columns of 3 and 8 inches in diameter are being readied for nearly immediate operation and a 16-inch column is being installed for operation within about one month, Several of the submerged pumps on life-testing are continuing to give satisfactory results.

In the research laboratory, continued scouting of methods of decontaminating Bldgs. 234-5 and 224 crib wastes is showing increasing promise. TBP process studies have included work on improved performance of carbonatewashed TBP, comparison of diluents for TBP, settling rates of sludge from metal waste slurries, and continuous recovery of nitric acid. Redor studies have been continued in hexone-nitric acid reaction chemistry, continuous cross-over oxidation, and ruthenium tetroxide distillation. Near-quantitative recovery of plutonium from 234-5 slag and crucibles has been obtained in laboratory tests of KOH fusion, acid dissolution, and alkaline precipitation, successively. Additional data have also been obtained on coupling of full-level Redox solutions to the 234-5 Bldg. process.

In the 234-5 process development laboratory, alternate modifications of the crucible recovery studies described above are also under study. Exploratory studies of skull dissolving agents other than hydriodic acid have uncovered promising results with 16 M nitric acid-0.1 M hydrofluoric acid mixtures. A filter-reactor has been fabricated for testing of direct transfer of filtered plutonium precipitates to hydrofluorination.

The T Plant sand filter efficiencies have remained lower than usual since the special short-cooled dissolving run and possibilities of monitor piping are being investigated. Filtration studies with a special paper produced by the A. D. Little Company have revealed that this material is apparently as good as DWS Type-6 paper.

Technical Services Division

Effective February 1, an Equipment Design Unit was established in the Engineering Section of the Technical Services Division. This new unit, which is housed in Building 101, is responsible for all laboratory equipment design activities in the Technical Divisions (except for that of Rala, which is continuing in the Analytical Section).

Good progress was made on the Rala Laboratory design, and plans were made for constructing a mock-up analytical line in Building 101. Development of the Remote Control Transport System continued, and effective technical liaison was established with the Lionel Corporation. Arrangements were completed whereby the Instrument Division will study the feasibility of the proposed electronic controls for this RCT System.

Documents HW-16080, "SF Naterials Accountability Procedure," and HW-16022, "SF Naterial Accounting Procedures," were issued during the month. The former details the system of control of such materials in use in the Analytical Section (both Control and Research), while the latter defines the various samples received by the laboratories, presents







the checking limits within which acceptable laboratory results must fall, and gives references to laboratory manuals where method descriptions are detailed.

The first specimen of high density lead glass was received from the Penberthy Instrument Company of Spokane, Washington. This special glass, which is reported to have shielding properties about equivalent to that of steel on a thickness basis, shows excellent promise for use in direct viewing windows of laboratory caves and cubicles.

Architectural, foundation and structural steel drawings for the Redox Analytical and Plant Assistance Laboratory, Building 222-S, were approved and released to the field construction forces. - Preparation for temporary construction buildings and site clearing was in progress.

With the recent transfer of the Engineering Files from the Design and Construction Divisions to the Project Engineering Division, arrangements were made to return the handling of all classified material formerly issued and controlled by these Engineering Files to the 700 Area Classified Files.

HEALTH INSTRUMENT DIVISIONS

The force increased by two. No Special Hazards Incident investigations occurred.

Considerable progress was made in P-10 hazard detection and evaluation through joint intradivisional effort during this period. Surveys by the Operational Division showed no major deviations from normal practices nor any above normal personnel exposures.

Routine air, water, and vegetation samples obtained through Development Division control activities showed the normal pattern of activity distribution. Bioassay of urine samples for plutonium showed no confirmed positive results. A maximum result of 130 µg/liter of uranium was obtained. Seven percent of the urine samples analyzed for P-10 were above the detectable limit. Four of these came from one individual.

Biology Division work proceeded satisfactorily. Analytical work on two-year old algae from the 107-F basin showed unexpected presence of $Pm^{1/2}$.

PLANT SECURITY AND SERVICES DIVISIONS

There was one major injury in February making a total of one for the year to date and a frequency rate of 0.43.

There were three minor fires in the industrial areas with a total loss of \$54.

Volume of both laundries remained approximately the same as in January,

Mail volume again increased over previous months. Changes in layout and work space speeded handling.







The plant records inventory has been completed except for Classified Files.

Effective February 20, two new posts were placed in effect in the 200-West Construction Area. On February 27 the post at P-11 was extended to 24-hour coverage.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

A total of 1,349 applicants was interviewed during February, 304 of which were individuals who applied for employment with the Company for the first time. In addition, 321 new applications were received through the mail. Open requisitions increased from 86 at the beginning of the month to 103 at the end of February. Total plant personnel increased from 7,431 to 7,464. Turn-over rate, including terminations due to lack of work, was 0.94%. Turn-over rate, exclusive of terminations due to lack of work, was 0.899%. A visit was made to the Yakima Valley Junior College, Yakima, Washington, and the Central Hashington College of Education, Ellensburg, Washington, in order to ascertain the availability of persons who have had two years college education to fill positions in Health Instrument and Technical Divisions. Recruitment of stenographers was conducted in San Francisco and Los Angeles, California. This recruitment, coupled with that conducted previously in the Northwest, has resulted in 43 stenographers being obtained.

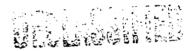
The Instructions Letter on "Procedure for Disciplinary Action" was distributed to all supervisors during February. Eighty-two visits were made to employees off work because of illness. Two employees retired and one employee death occurred during the month. Organization was developed to handle the Red Cross Drive. Insurance claim forms were distributed to Our Lady of Lourdes Hospital in Pasco, Washington. Twenty suggestion awards, totaling \$300 and representing an estimated savings of \$3,456, were granted to employees during the month. The largest award was \$100, given to a Maintenance Division employee. Two Workman's Compensation hearings were attended during February.

Forty-five supervisors participated in the 40-Hour Supervisors Training Program during February. Luncheon was given on the last day of this Program for the participating supervisors with several members of Management as guests. Current Event Program on Economics was presented to supervisors during a three-week period in February with 518 supervisors in attendance. Programs on the importance of accountability for source and fissionable material were prepared for dissemination to those Divisions handling this material and were presented to 32 employees in the Technical Divisions. A representative of the Training and Program Development Group addressed the Richland Chamber of Commerce on February 14, 1950.

Meetings were held between NLPB representatives, the Company, and representatives of the Hanford Industrial Firemen's Union for the purpose of setting up the consent election, which was conducted on February 23 and 24. The results of the election indicated that the Industrial Firemen desired representation by the Hanford Atomic Metal Trades Council. The Technical Engineers and Architects Association withdrew their petition without







prejudice the day before the scheduled hearing. In preparation of the possible renegotiation of the HAMTC-GE Agreement, an analysis of the Articles of the Agreement, all grievances and instructions letters was begun. Two meetings were held with the Council Grievance Committee. Outside personal contact was completed in connection with the annual Northwest Wage Survey. An analysis of the survey figures in connection with the comparison of the rates paid General Electric Company employees with the wage rates paid by participating concerns in the Survey was started. A series of conferences were held with A. E. C. authorities relative to a submitted request for authorization to pay a number of employees specific emounts of money due them as a result of the application of the new non-unit progression schedule.

Public information activities of the Nucleonics Department News Bureau during the month of February included the release of 15 news stories to the "local list". In addition, the list of 72 newspapers, wire services, and radio stations in the Pacific Northwest received 9 news releases.

Special requests for information to be used in news stories continued to occupy a large part of the time of News Bureau personnel during the month of February. Twelve news stories were prepared in reply to requests received from the TRI-CITY HERALD, seven for the Richland VILLAGER, and two for the Spokane CHRONICLE representative in Richland.

Special Programs completed the design of special security reminder disks for the Hanford Works telephones and the order was placed through the Purchasing Division during the month.

Other Special Programs assignments during the month included design and production of the Hanford Works Safety Topic of the Month poster for March, the cover for the March safety meeting discussion material booklet, the four covers for use in the forthcoming Richland telephone directory, editorial work, design and photography work for a special supplement to Hanford Works NEWS commemorating the 100-D Area's third injury-free year, as well as special safety citation cards for distribution to employees of 100-D Area, and two letters for the General Manager's signature which were distributed to all Hanford Works employees.

Four issues of the Hanford Forks NEWS were published during February and "Candid Camera" was inserted in the February 3 issue. The WORKS NEWS was instrumental during the month in carrying to all Hanford Works employees the message the General Manager had presented earlier during a special supervisors' meeting.

The WORKS NEWS also published during the month a special issue devoted to Valentine's Day and served community programs through publicity concerning the observance of National Boy Scout Week and the Red Cross Drive.

A new feature, the responsibility of the Women's Feature Triter, was introduced in the WORKS NEWS during February. It is called "What's Doing", and provides a chatty schedule of events approximately one week in advance as a service to readers of the plant newspaper who are seeking recreation in Richland.





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A program of publicity for the Community Activities Division "Kite Flying Contest" was designed by the Community Divisions Public Information Supervisor and approved by the Community Activities Division during the month. In addition, this Supervisor assisted in preparing an up-to-date description of Richland, Washington, for use by the Employment Division in corresponding with prospective employees of Hanford Works.

A considerable increase has been experienced in the requests for institutional motion pictures received by Public Functions and Services, necestitating the setting up of more detailed schedule records and sending out of additional information concerning movies available.

The Public Functions and Services Supervisor discussed radio program possibilities with the management of three radio stations in this area during the month and found them very receptive to the services he proposes to offer.

Sixty-nine photo assignments were completed by the Hanford Works Photo House during the month, an increase of 29 over the previous month. Color photography service, rendered primarily to Kadlec Hospital, increased approximately 50 percent over the previous month.

PURCHASING AND STORES DIVISIONS

Personnel of the Purchasing and Stores Divisions showed a net increase of four people as indicated by the tabulation below:

	Total Personnel as of 1-31-50	Total Personnel as of 2-28-50	Net Change
Exempt	53	53	0
Non-Exempt	<u>234</u>	<u> 238</u>	<u>lus 4</u>
Totals	287	291	Lius 4

The work load in the Purchasing Division increased materially. The number of requisitions on hand at month end was 969 which represented an increase of approximately 80 percent.

Authority was received to proceed with procurement for Project MJ-1 on February 3, 1950,

An order was placed with the Roberts Filter Manufacturing Company amounting to approximately \$675,000. The need for this equipment was so urgent that it was deemed advisable to send the Purchasing Agent to the Roberts Plant at Darby, Pennsylvania for the purpose of aiding in the scheduling and expediting the delivery of this equipment.

We were able to maintain, through the medium of spot purchases, an average of two months: supply of coal despite the National strike.

Quotations were obtained on our rather large requirements for Aluminum Nitrate and forwarded to the Commission for approval. Indications were that it would be necessary for the successful vendor to construct additional







production facilities either at Sunnyside, Washington or Kennewick, Washington to take care of our needs.

Stores active inventories were reduced by \$45,120.35.

A total of 1,791 purchase requisitions was screened resulting in the supplying of 741 items from plant inventories thus obviating the expenditure of new funds.

An audit of the Stores Division's scrap sales procedure was completed by the Accounting Division.

As a result of rate reductions obtained from carriers, total savings in freight charges for the month amounted to \$43,607.29.

COMMUNITY DIVISIONS

Election of Community Council members was held February 4, 1950, in conjunction with the School Board election.

Three new commercial facilities opened for business during the month.

Housing applications increased from 197 to 203.

Due to the extreme ice conditions on the Yakima River, unfavorable thawing weather could have created a serious threat to the bridges crossing the river; however, as a result of favorable thawing conditions, no damage to the bridges was experienced.

MEDICAL DIVISIONS

The Medical Divisions' roll changed little from 362 to 361.

At the final visit of our medical consultant group, Public Health and Industrial Medicine were given special attention. Dr. Ellis Sox, of Public Health Department, State of California, was added to the group to advise on public health.

Total weekly employee absentecism was 2,44% as compared to 3,20% for February, 1949.

The net cost of operating the Medical Divisions (before assessments to other divisions) was \$83,280, a decrease of \$8,762, and \$28,894 below the budget figure. The improvement was largely due to increased revenue.

GENERAL ACCOUNTING DIVISION

Considerable time was spent in the preparation of an Appendix C to the Prime Contract. This appendix covers in detail all employee benefit plans and all policies relative to travel and living allowances. Nothods of payment in connection with these plans and policies were covered together with the resultant reimbursement from the Government.







Assistance was rendered to all General Divisions in the preparation of fiscal year 1952 budget estimates and revisions of 1951 estimates covering within-division, construction, research and development, and balance sheet budgets.

Hanford Works and Nucleonics Department Financial Statements for the month of January were completed and distributed on February 16 and February 21, 1950, respectively. General Divisions Operating Reports covering January operating costs were completed on February 15, 1950.

Advances from AEC remained at \$4,000,000 at the month end. Items comprising the balance in the advance account as of February 28, 1950 compared with those of January 31, 1950 are detailed below:

	January 31	February 28
Cash in Bank - Contract Accounts Salary Accounts Travel Advance Funds Advances to Subcontractors Cash in Transit	\$ 3,178,952 55,000 50,000 300,000 416,048	\$ 3,405,716 50,000 50,000 300,000 194,284
Total	<u>\$ 4,000,000</u>	\$ 4,000.000





STAFF

General Manager	out
Assistant General Hanager R. S. Ne	blett
Assistant General Manager F. K. Mc	:Cune
Assistant to the General Manager	tnode
Assistant to the General Hanager J. R. Ru	ıe
Assistant to the General Hanager and Manager of the Plant Security and Services Divisions G. G. La	iil
Department Comptroller F. E. Ba	iker
Counsel L. F. Hu	ıck
Community Manager E. L. Ri	Lchmond
Manager, Design and Construction Divisions W. E. Jo	ohnson
Manager, Manufacturing Divisions	ross
Manager, Technical Division A. B. Gr	reninger
Manager, Health Instrument Division H. M. Pa	ırker
Manager, Medical Division	orwood, H.D
Manager, Employee and Community Relations Division H. E. Ca	allahan
Manager, Purchasing and Stores Divisions	effrey



FORCE REPORT FEBRUARY - 1950

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	NON E	XEMPT 2-28-50	EXE 1-31-50	MPT 2-28-50	TO 1-31-50	TAL 2-28-50
	22	27	17	מנ	40	44
GENERAL LAW	23 3	27 3	17 3	17 3	6	446
DESIGN & CONST. DIV'S.	,	,			. •	_
CONSTRUCTION	27	28	8	6	35	34
CONST. ACCT'G.	56	58	8	9	64	. 67
DESIGN	176	185	195	192	371	377
NO. RICHLAND REALTY	65	66	16	17	81	83
MANUFACTURING DIV'S.						- /
GENERAL	4	4	11	12	15	16
PROJ. ENG'R. CONTROL	17	18	22	23	39	41
PROJ. ENG'R. DESIGN	65	66	42	42	107	. 108
PROJ. ENG'R. MINOR CONST.	169	167	31	30	200	197
MFG. ACCOUNTING	47	46	8	8	55	54
OPERATING DIV'S.	200	201	45	66	31.0	31.0
iipii	275	274	65		340	34.0
ingii Dolum	296	296	83	85	379	381
POWER	461	455	81	82	542	537
MECHANICAL DIV'S. MAINTENANCE	27.7	210	50	50	242	242
ELECTRICAL	311 253	310 253	52 46	52	363	362 201
INSTRUMENT	192	192	48 48	48 48	299 240	301 240
-TRANSPORTATION	539	538	57	57	596	595
TECHNICAL DIV'S.	729	7,78	71	21	790	777
GENERAL	2	2	3	3	5	5
PILE TECHNOLOGY	44	44	80	82	124	126
SEPARATIONS TECHNOLOGY	59	58	94	95	153	153
TECHNICAL SERVICES	343	341	105	109	448	450
MEDICAL	279	279	83	81	362	360
H. I. DIV'S.			_		_	-
GENERAL	4	4	3	3	7	7
H. I. OPERATIONAL	149	152	59	59	208	211
H. I. DEVELOPMENT	69	69	25	23	94	92
H. I. BIOLOGY	28	29	20	21	48	50
ACCOUNTING DIV'S.	~~		_	_		
GEN. ACCT'G. PAYROLL	77	76	8	. 8	85	84
GEN. ACCT'G. ACCT'G.	76 53	76	13	15	89	91
EMPLOYEE & COMMUNITY RELATIONS PLANT SECURITY & SERVICE DIV'S	DIV. 53	54	27	28	80	82
PATROL & SECURITY	<u>.</u> 515	520	57	. 56	572	576
SAFETY & FIRE	115		57 35	35	150	
GEN. &.OFF. SERV.	189		21	20	210	217
PURCHASING & STORES DIV'S.	107	-/1	~-	۶0	. ~10	~_1
PURCHASING	37	38	33	34	70	72
STORES	198		26	26	224	
COMMUNITY DIV'S.	585		145		730	
		•	,,	, ,		
GRAND TOTALS 2 2 3 0	5801	5825	1630	1639	7431	7464
1717716	•					

GENERAL GLerical Total LAW DIV. Clerical Total DESIGN & CONST. DIV'S. Supervisors Inspectors Clerical Total Total	PERSON 100-B AREA	PERSONNEL DISTRIBUTION 100-B 100-D 100-F 1 AREA AREA AREA A	100-F AREA	JOOH AREA	FEBI AREA	FEBRUARY 1950 A AREA AR	300 AREA	PLANT	3000 AREA 2000	700-1100 AREA 17 27 44 44 6	TOTAL 444 444 444 444 444 344 344 344 344 34	SECTION OF THE PARTY OF THE PAR
Supervisors Exempt non Supv. Clerical Total DESIGN Supervisors Engineers & Estimators Exempt non Supv.	1 1 1 1	11111	1 1 1 1	1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1	1111		238 27 28 29 29 29 29 29 29 29 29 29 29 29 29 29	29	2 2 58 67 38 138 16	1
Draftsmen Clerical Total		1 -1 8	1 1 1 5		1 11 1	1 1 1	1 1 1	The state of the s	17.	61 106 336	61 377	HW 17056

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HW	•		2	г

						HW 17056
	Total	17 22 24 83	8 7	13 13 41.	39 60 108	27 3 155 12 197
)	700-1100 Area	1 1 1 1	8 4 16	13	35 75 84 6 6 92	7
	3000 Area	17 13 24 83	1 1 1	1 1 1 1 1	1 1 1 11 1	1 1 1 1 1
	Plant General	3 1 1 1 1	1 1 1 1		11144	24, 2 155 11
	300 Area	1 1 1 1 1	1 1 1 1	17 13	4115	
	200-W Area	1 1 1 1 1	1 1 1 1	1 1 1 1 7	6112	
	200-E Area	1 1 1 1	1 1 11 1	1 1 1 1 1 1	1 1 1 1 1	
`	100-H Area	1 1 1 1 1	1 1 1 1	1 1 1 1 1	1 1 1 1 1	
J.	100-F	1 1 1 1 1	1, 1 1 1	14114	1114	1 1 1 1 1
	100-D Area	11111	1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1
	100-B	1 1 1 1 1 1	1.1.11	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1
√ i 2	12312	DESIGN & CONST. DIV'S. NO. RICHLAND REALTY Supervisors Clerical Janitors Others Total	MANUFACTURING DIV'S. GENERAL Supervisors Fingineers Clerical Total	PROJ. ENG'R. CONTROL Supervisors Engineers Clerical Craftsmen Total	PROJ. ENGTR. DESIGN Supervisors Engineers Clerical Others Total	PROJ. ENG'R. MINOR CONST. Supervisors Engineers Cfaftsmen Clerical Total
2.						15

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Total	8 46 54	56 1 9 258 16 340	52 272 242 381	69 13 412 11 32 537
700-1100	977	2 1 7 - 14	3 12 12 21	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3000 Area	1 1 1	11111	1 1 1 1 1 1	1 1 1 1 1 1
Plant General	1 1 1	1 1 1 1 1 1	1 1 1 1 1 1	15 4 4
300 Area	1 1 1	13	1 1 1 111	10 10
200-W Area	1 1 1	1 1 1 1 1	34, 5, 10, 168, 14, 231	49 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2007 3-007	1 1 1	1 1 1 1 11 1	15 5 104 104	26 26 31
100-H Area	1 1]1	12 36 50	1 1 1 1 1 7	12 77 77 96
100-F Area	3 1 1 1	36	111111	73 - 73
100-D Area	1 11 1	38 - 1 - 9	1 1 1 1 1	12 4 78 1 101
100-B	1 1 1	3621 9	1 1 1 1 1 1	12 78 1

CMANUFACTURING DIVIS.



Supervisors Supv. in Training

Operators Clerical

Total

Engineers

Supervisors Supv. in Training

Operators Clerical

Total

Engineers

OPERATING DIVIS.

Supervisors

Clerical Total Coal Handling

Total

Clerical

Supervisors

Engineers Operators

Total	46 6 285 11 362	43 189 34 26 301	29 169 169 16
700-1100 Area	9 1 1 1 6	102 25 25 29 25 25 25 25 25 25 25 25 25 25 25 25 25	11 3
3000 Area	11111		53
Plant General	1 1 1 1 1 1	17 2 70 4 10 10	ארו אוף
300 Area	20 20 60 60 60 60 60 60 60 60 60 60 60 60 60	11 11 11 11 11 11 11 11 11 11 11 11 11	100
200-W	13 83 2 2 102	12 12 22 22	# 35°
200-E	33.6	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	14
100-H	27. 27. 36. 36.	25 1 4 1 25	15
100-F	37 22 22 47	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	15
100-D	40	18	14 14 18
100-B	17	12 12 12 13	13

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MANUFACTURING DIV'S. MECHANICAL DIV'S. MAINTENANCE

Supervisors

Engineers Craftsmen

Clerical

Others



Operation Others

Clerical

Total

INSTRUMENT
Supervisors

Enginecrs

Craftsmen Clerical Others Total

ELECTRICAL Supervisors Engincers Craftsmen

Total

		55		HW 17
	Total	52 165 102 24 449 76 595	60/2	15 44 32 7
)	700-1100 Arca	34 165 68 68 115 20 30 372	600	111111
	3000 Area		1 7 1	111111
	Plant General	7 12 24 6 6 14 15	1 1 1	
	300 Area	173	1 1 1	12 22 22 22 20 20 20 20 20 20 20 20 20 20
	200-W Area	7 1 1 9 1 4 1 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1 111	111111
	200-E	21.6.16.16.2	1 1 1	1 1 1 1 1 1 1 1
	100-H Area	111212111	1 1 1	71416110
•	100-F Area	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1	11644110
	100-D Arca	346 1.0	1 1 1	19014110
	100-B	21 2 1 4 5 5 5 5 5 5 5 5 5	1 111	100111111111111111111111111111111111111
		ion		Eng'r. tants
		MANUFACTURING DIV'S. MECHANICAL DIV'S. TRANSPORTATION Supervisors Engineers Bus Drivers Journeymen Trainmen Servicemen Clerical Equipment Operation Others Total	TECHNICAL DIV'S. TECHNICAL GENERAL Supervisors Clerical Total	PILE TECHNOLOGY Supervisors Metallurgists & Eng'r. Physicists Tech. Grads Laboratory Assistants Clerical Others Total
	12,12315		ovstern)	

		उन्ह सुरुद्धाः ।	HW I
Total	20 75 10 33 13 153	56 53 66 156 77 77 42 450	33 29 10 20 89 88 360
700-1100 Area	4	30 1 38	33 26 9 9 16 66 78 87 324
3000 Area		1 1 1 1 1 1 1	זרווטוטולי
Plant General	111111	1 1 1 1 1 1 1	013141121
300 Area	14 58 32 13 123	28 28 28 66 40 14 213	וווומקוות
200-W Area	100 100 100 100 100 100 100 100 100 100	13 26 26 27 102 102	innin
200-E Area	1211119	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
100-H Area	1 1 1 1 1 1	13	
100-F Area	111111	3 11 28 12 42	111111111
100-D Area		1-1111-	111114114
100-B Arca	111111	141114	111114114
	TECHNICAL DIV'S. SEPARATIONS TECHNOLOGY Supervisors Chemists - Chem. Eng'r. Tech. Grads. Clerical Chem. Operators Others Total	TECHNICAL SERVICES Supervisors Chemists & Eng'r. Technologists - Tech. Grads. Lab. Asst. Clerical Others Total	MEDICAL Supervisors Physicians Dentists Other Exempt Technicians Nurses Clerical Others Total
	1212316		



		SE	शराजा ।	•	HW 17056
Total	1 7 7	23 36 34 149 211	15 15 65 92	6 15 2 2 2 2 50	8 9 <u>7</u> 84
700~1100 Area	1 1 7	7 1 1 2 1	100	1 1 1 1 1 1	8 47 8
3000 Area	11111	1 1 1 1 1	11111	1 1 1 1 1	1 1 1
Plant General	1 1 1 1	100	11111	1 1 1 1 1	1 1 1
300 Area	1 1 1 1	8 3 11 53	15 27 27	111	1 111
200-W Area	1 1 1 1	6 10 13 52	35	10146	1 1 1
200-E	1 1 1] 1	5 5 24	1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 1 - 1 1	1 1 1
100-H Arca	1 1 1 1	20	1 1 1 1 1	1 1 1 1 1	1 1 1
100-F	1 1 111	1 5 2 10 16	1 1 1 1 1	11 126 43	1 1 1
100-D Area	1 1 1 1	3	F F 1 1 1	1 1 1 11 1	1 1 1
100-B Area	' ' ' '	1 4 4 14		1 1 1 1	1 1 1

ACCOUNTING DIV'S.
GEN. ACCT'G. PAYROLLS
Supervisors
Clarical
Total

BIOLOGY Supervisors Engineers Clerical

Others Total

Extraction.

DEVELOPMENT Supervisors

Engincers Clerical

Total

Others

GENERAL Supervisors

H. I. DIVISIONS

Engineers Clerical Total

23

OPERATIONAL Supervisors

Engineers Clerical

Total

Others

3

		क्टाउँ म	रेखाई,	HW 1
Total	9 6 76 91	21 1 6 44 10 82	52 4 503 16 16	30 5 94 15 149
700-1100 Area	9 6 76 91	21 . 1 6 44 10 82	36 26 141	1 14 14 22
3000 Area	1 1 1 1	111111	1 1 1 1 1 1	1 1 1 1 1 1
Plant General	1 1 1 1	1 1 1 1 1 1 1	8 4 8 14 14 35	10 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1
300 Area	1 1 1 1 1	1 1 1 1 1 1	99 1 122	11,14
200-W Area	1 1 111	111111	110	14 14 19
200-E	1 1 1 1	1 3 1 1 1 1	19	14144
100-H Area	1 1 1 1	1 1 1 1 1 1	5	111479
100-F Area	1 1 1 1	1 1 1 1 1 1	67	1 18 1 10
100-D Area	1 1 1 1	1 1 1 1 1	59	14144
100-B	1 1 1 1	1 1 1 1 1 1	521 1 22	44 3 3 55
	Supervisors Non Supervisors Clerical Total	EMPLOYEE & COMM. RELATIONS DIV. Supervisors Employee Rel. Counselor Excmpt non Super. Clerical Others Total	PLANT SECURITY & SERVICE DIVIS. PATROL & SECURITY Supervisors Exempt non Supv. Patrolmen Clerical Seamstress Total	SAFETY & FIRE Supervisors Safety Engineers Firemen Inspectors Clerical Total

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HW	- 1	11	ורו

				HW	17056
Total	19 3 93 28 28 217	12 22 38 72	2.6 80 120 226	130 53 34 45 44	730
700-1100 Arca	14 1 35 28 28 42 121	12 15 38	13 40 . 84 . 137	109 28 53 34 45	57 641
3000 Area	1111111	1 1 1 1	28 28 39	221 255 43	89
Plant General		17.17	1 1 1 1		987
300 Area	13. 13		1 1 1 1		9/28
200-W Area	15 31 50	1 1 11 1	1177	1111111	No.
200-E	4112116	1 1 1 1	1111		617
100-H Area	11101110	1 1 1 1	1 1 1 1		351
100-F	11121118	1 1 1 1	1 1 1 1 1	* * 1 * 1 * 1 1	453
100-D Area	11191119	1 1 1 1	1 1 11 1	1111111	387
100-B	11121112	1 1 1 1	12 30 49		422
9•	PLANT SECURITY & SERVICE DIV'S. GEN. & OFF. SERV. Supervisors Engineer Laundry Operators Janitors & Servicemen Clerical Others Total	PURCHASING & STORES DIV'S. PURCHASING Supervisors Exempt non Supv. Clerical Total	STORES Supervisors Clerical Others Total	COMMUNITY DIV'S. Supervisors Patrolmen Firemen Journeymen Servicemen Truck Drivers Power Operators Clerical	Others Total GRAND TOTAL

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MANUFACTURING DIVISIONS

FEBRUARY 1950



SUMMARY

Production Divisions

A total of 62.3 tons of metal was discharged at an average of 90 percent of the goal concentration. One-half ton was discharged at 137 percent of the goal concentration. The pile operating efficiency #25 92.8 percent. The operating levels at month end were 275 MW at B pile, 305 MW at D and F piles, and 330 MJ at H pile.

A total of 91 tons of acceptable slugs was canned at a yield of 93.2 percent. The machining yield of 77.3 percent set a new record high. The melt plant produced 19 tons of billets at a yield of 67.8 percent.

Sixty-eight batches were started in the Canyon Buildings, with 68 being processed through the Concentration Buildings, and 65 through the Isolation Building. The average purity of completed batches from Isolation was 98.6 percent.

Mechanical Divisions

The severe cold weather and excessive snowfall handicapped activities of the Division throughout the month and created a large volume of additional work. Difficulty was experienced with automotive equipment, freezing of water lines, intakes, and reservoirs, and ice endangering the Yakima River Bridge at George Washington Way. The temporary false work piling on the UP-NP Railroad Bridge was removed.

Inspection by boroscope of 87 safety rod thimbles revealed that 14 were corroded and will require replacement. Two stainless steel knuckle jointed safety rods having flexibility to accommodate thimble distortion resulting from graphite expansion were installed at 100-D.

The electrical demand of 88,200 KW for the entire electrical system reached an all time high coinciding with the cold weather,

The installation of the IBM temperature monitor system at 100-H Area was completed and is operating satisfactorily. It is planned to install similar units in 100-B, 100-D, and 100-F.

A twelve inch sanitary water line in the 200-E Area failed and was repaired. The reason for the break could not be established, but it was probably due to the severe cold weather.

Continuing progress is being made in reducing inactive Stores inventory. During the month \$15,155 worth of material was encessed.

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS





MANUFACTURING DIVISIONS PATENT REPORT SUMMARY

FOA MONTH OF FEBRUARY. 1950

Richland, Washington March 9, 1950

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

INVENTOR

TITLE

NONE

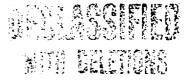
C. N. GROSS

MANAGEL, MUNUFACTURING DIVISIONS





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March 6, 1950

P DIVISION

FEBRUARY, 1950

I. GENERAL

The B, D, F, and H piles operated throughout the month except for outages listed under Area Activities. Power levels were as follows: B pile - 275 MW, D and F piles - 305 MW, and H pile - 330 MW. The piles operated with a "time operated" efficiency of 92.8%.

A new record machining yield of 77.3% was established during the month for machining 4" slugs from alpha rolled rods.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - February
Beginning of Month - 340
End of Month 341
Net Increase

- D. S. Lewis, Assistant Chief Supervisor, assumed charge of the P Division Process Control Group on February 13.
- J. T. Baker was promoted to Assistant Chief Supervisor of 100-B Area on February 1.
- H. T. Wells, Assistant Chief Supervisor, assumed charge of the P Division Engineering Control Group on February 20.
- J. A. Hauga was promoted to Assistant Chief Supervisor of 100-H Area effective February 1.
- G. E. Carlton, Assistant Chlef Supervisor, was transferred to 100-F Area on February 27.
- H. E. Berg was promoted to frea Supervisor, 100-B and 100-D Areas, on February 1.





R. G. Clough was promoted to Area Supervisor, 100-H Area, on February 1.

P. P. Eddy was transferred from the H. I. Divisions to the P Division as a Supervisor in-Training on February 1.

J. E. Hebert was transferred from the H. I. Divisions to the P Division as a Supervisor-in-Training on February 10.

One Steno-Typist B was hired.

One Field Clerk C was transferred to the H. I. Divisions and was replaced by a Field Clerk C from the 300 AFea.

One 300 Area operator terminated voluntarily.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F	PILE H
Time Operated (%)	93.2	87.5	90.7	99.5
Operating Efficiency (%)	92.2	86.1	89.5	
*Power Level (MW)	275	305	305	330
	5.0	5.0	4.7	4.9
*Outlet Water Temperature (Max	i-			
mum °C., 10 tubes, 0.240" Zo:		45.9	49.7	53.4
Number of Scrams	2	1	2	8
Number of Purges	l	1 .	. 0	0
Helium Consumption (cu. ft.)	* *	43,202	15,546	
CO ₂ Consumption (cu. ft.)			18,933	15,159
Metal Discharged (tons)		26.22	25.84	0
Inhours Gained (this month)	14	10	-47	69
*Inhours Poisoned	581	594	425	232
*Inhours in Rods	82	80	71	187

* Month end figures.

** Includes 14,000 cu. ft. for DR pile.

PILE BUILDING

Cutage Breakdown

Scheduled					Length of
Date	cf Outage	Metal Discharged	<u>Maintenance</u>	Unscheduled	Outage (Hours)
*	2-1-50	F		i.	31,4
(1)	2-1-50			H	0.2

^{*} Includes time to discharge temporary poison.



⁽¹⁾ Scram caused by defective #2 Beckman.



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DELLASOR

Outage Breakdown (Cont'd.)

		Sched	uled		Length of
Date	of Outage	Metal Discharged	Maintenance	Unscheduled	Outage (Hours)
(2)	2-2-50			F	0.6
(3)	2-3-50			B	0.6
(3)	2-3-50			В	0.1
(2)	2-4-50			H	0.2
(2)	2-7-50			H	0.3
(/	2-7-50	В		,	21.1
*	2-8-50	D .			44.1
(2)	2-10-50			D ~	0.6
(2)	2-10-50			H	0.1
(2)	2-10-50			H	0.2
(2)	2-13-50			H	0.1
(2)	2-13-50			F	0.2
*	2-13-50	F			30.6
	2-15-50	В			23.7
(2)	2-19-50	_		H	0.2
(2)	2-19-50			H	0.4
*	2-23-50	D			40.0

- * Includes time to discharge temporary poison.
- (2) Unit scrammed when panellit alarms could not be reset.
- (3) Unit scrams caused by power surges on the BPA system.

Operating Experience

Production tests having operational significance are reported below:

105-81-P (Probe Tests of Top Central Tubes)
The tubes listed below successfully passed probes as indicated:

1.475m	1.480"	1.485"
4586D	4585-D 4669-D 4674-D 4674-3	4574-B 4562-D 4660-B 4579-D 4687-B 4586-D

105-103-P (Corrosion Rates at Elevated Temperatures, Supplement A)

Thirty-two tuber in F pile continued to operate throughout the month with reduced water flow in accordance with the provisions of this test. No unusual conditions were noted.





105-114-P (Van Stone Corrosion Studies)

Three front face Van Stone flanges on B pile which have been protected with aluminum nozzles for approximately four months were inspected and found to be in good condition.

105-168-P (Replacement of Pile Atmosphere with CO₂)
Replacement of the remaining helium in the B
pile atmosphere continued. The CO₂ concentration at month end was 94%.

The 100-D and 100-F pile atmospheres were maintained at 60% CO₂ concentration through the month.

No unexpected changes in operating conditions have been observed.

105-276-P (Graphite Core Sample)
Tube Nos. 2273-D and 2290-D were removed preparatory to cutting graphite samples from the tube blocks. The samples were not drilled because of failure of the cutting device and the process tubes were replaced and recharged.

105-278-P (Effect of Increased Enrichment Levels)
Two tubes of Group V material discharged at
135% of the current goal value and two at
139% of the current goal value showed some
increase in the number of pieces classed as
moderately and extensively blistered. There
were no significant dimensional changes observed.

105-302-P (Power Level Increase - H Pile)

The operating level of H pile was maintained at 330 MW throughout the month in accordance with the provisions of this test. No unexpected operating conditions were observed.

A total of 47.04 tons of Group V (alpha rolled, triple dipped, completely transformed) material was discharged during the month. Of this amount 46.54 tons had an average concentration of the current goal value and 0.5 tons were discharged at an average concentration of 137% of the current goal value in accordance with the program of investigation of higher discharge concentrations.





During the month the final 13.05 tons of Group IV (alpha rolled, triple dipped, partially transformed) material was discharged from the piles. All regular material in the piles is Group V material with the exception of 1.64 tons of Group I (gamma extruded 8") material and 1.25 tons of Group II (gamma extruded 4") which are scheduled for discharge during March, 1950.

Tubes 0485-B, 0553-B, 1293-F, and 3184-F, damaged during the discharge of stuck pieces reported previously, (see documents HW-15550-A and HW-15843-A), were replaced during the month. These tubes were returned to normal service.

Considerable difficulty was experienced with the panełlit system of H pile during the month due to the unsatisfactory type of terminal at the connecting wires between individual gauges. Loose connections at these terminals caused numerous panellit alarms and six voluntary scrams were initiated when it was impossible to locate and correct poor connections within the specified time limit. Due to the serious and urgent nature of this condition immediate action was mandatory. With the procurement of a more satisfactory type "banana plug" terminal, replacement was begun immediately and is 95% complete at month end. Numerous leaking gauges were replaced during the month. The program of replacement with factory repaired gauges is more than one-third complete at month end.

Mechanical Experience

All horizontal and vertical rods are in satisfactory operating condition at month end except #20-D and #19-F which are tied out of service.

The rod guide was removed from #20-D vertical rod and a short external guide with internal shield was installed. The rod was operable after installation, but failed to operate prior to startup.

Vertical rod #19-F was out of service at month end due to an unsatisfactory thimble pressure test.

kod repairs during the month included:

- a. Vertical rod #24-B, reported binding in January, was repaired by realigning the step plug.
- b. Knuckle rods were satisfactorily installed in positions #27-D and #35-D.
- c. Thimbles #13-D and #26-D which were found leaking were replaced.







d. Horizontal rod #2-B failed to scram when the unit was shut down on February 7. This failure was corrected by replacing the two-way four-way valve.

A program of vertical rod thimble pressure testing and borescopic examination of the corrosion zone at the thermal shield was begun on B, D, and F piles during the month.

Repairs to the F pile downcomer interior baffle structure were continued during the month.

Repairs to the far side effluent line at H pile continued during the month. Attempts to apply bitumastic lining to portions of the line have been unsuccessful and a different application technique is being investigated.

Gas Processing Buildings

It has been observed that the percentage CO₂ in the H pile atmosphere has been decreasing and the percentage CO has been increasing. This appears to indicate that some oxidation of the graphite moderator is taking place. At month end the percentages of CO₂ and CO in the system appear to be levelling out at 92% and 6.5% respectively, but further observation will be necessary for confirmation.

Special Hazards

The installation of auxiliary shielding at the T seams on the experimental level of H pile was completed during the month.

Project Status

Below is summarized the status of P Division projects which are currently active.

- *C-306 (Front Face Shielding Caps)

 Eighty-three caps with attached shielding plugs have been received of the original order of 500. Approval of the Atomic Energy Commission has been requested to order additional caps to cover DR pile in addition to B, D, and F piles.
- C-323 (Replacement of Vertical Rods and Guides B, D, and F Piles)
 Complete and closed out.
 - C-330 (Improved Ventilation, Bldg. 313-314)
 Installation of facilities continued throughout the month.







- *C-347 (Nozzles Replacement)

 The order for aluminum inlet nozzles has been placed and first deliveries are expected April 15, 1950. Plans are being made to start work on the piles sometime in April.
- C-355 (Pile Clearance)
 Clearance for the near side of B pile will be provided during the outages planned for April and May. Action on the project at D and F has been postponed pending further evaluation of the graphite expansion problem at these piles.
 - C-399 (Rolling Mill)
 Preparation of the project proposal is proceeding.
- No development work has been started because of cold weather.
- M-713 (Flexible Vertical Rod)
 Fabrication of four alternate types of flexible rods will begin when materials now on order arrive.
 - M-715 (IBM Individual Tube Accounting)
 The H pile installation is complete and trial runs are in progress.
 - M-721 (Pile Shield Restraining Clamps)
 D and F pile installations are complete.
 - M-723 (Repairs to 107-B Basin)
 Preparations for the repair work have begun. This work has been held up by cold weather.
 - M-725 (300 Area Burial Ground)
 Complete except for the installation of a gate in the enclosing fence.

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of February was as follows:

Billets Produced	19	Tons
Rods Machined	124	Tons
Bare Pieces Machined	96	Tons
Acceptable Pieces Canned	91	Tons





Melt Plant

The casting yields were as follows:

	January	February	To Date _1950
Billet (Ave. per furnace run) Billet (Yield from total scrap	66.6	67.8	67.1
processed)	81.3	78.2	79.8
Solid Metal	87.1	87.0	87.0

A slight improvement in average furnace billet yield was attained during February. Efforts are being continued to reduce stopper rod breakage, which is adversely effecting the yield, by charging the major part of solid scrap in the bottom section of crucibles and by careful stopper rod alignment.

Machining

Machining yields were as follows:

January	February	1950
76.0	77.3	76.3

The yield for February is the highest attained for the machining of 4" slugs from alpha rolled rods. All rods were generally of good quality.

A total of 428 rods, which were alpha rolled from lead preheated billets during the February run at Simonds, were machined. The average yield was 78.6% and rod diameters ranged from 1.398" to 1.434".

A record shift production rate was established for the facing lathes on February 14 when 2376 slugs were faced.

Special gamma phase extrusion runs were made on February 17 and 24. On February 17 a total of 35 rods was extruded having the following nominal diameters: one 3.000", five 2.000", five 1.500", and twenty-four 1.405". Difficulty was encountered in shearing the 3.000" rod and the surface condition of the large rods was generally poor. On February 24, thirty-two additional rods were extruded having the following nominal diameters: ten 3.000", thirteen 2.000", and nine at 1.500". Graphite blocks were inserted between the billets and dummy blocks during the extrusion of 3.000" rods to eliminate the necessity of shearing. In addition, the dies were preheated before extruding the rods in each group to reduce poor surface on initial rods pushed through each die.





P Division

The 1.500" and 2.000" gamma extruded rods are being prepared for shipment to KAPL as outlined in Document No. GEH-15,893, (Request for Natural Uranium Bar Stock). The 1.405" and 3.000" rods were requested by the Technical Division for experimental purposes.

Chip Recovery

The chip recovery yield was as follows:

	Yield	
January	February	To Date 1950
87.4	87.5	87.5

The entire chip recovery process was operated four shifts and the press an additional ten shifts. All chips were pickled and 38,354 pounds of TXB were produced.

The yield continues to be adversely effected by the decreased size of turnings included in turning scrap from machining.

Oxide Burning

The material burned was as follows:

Weight Out - Pounds			
January	February	To Date 1950	
18,299	20,157	38,456	

Oxide on Hand at Month End (Metal Content)

To	be	burned	00.0	lbs.
To	Ъe	analyzed	6,609.5	
To	be	shipped	15,158.8	
	7	[otal]	21,768.3	

Canning Operation

The canning yield was as follows:

	% Yield	
January	February	To Date
93.9	93.2	93.6

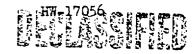
Canning rejects, by cause, were:

9 1212334









	Per Cent		
	January	February	To Date _1950
Non Seating	0.7	0.8	0.8
Marred Surface	2.0	2.9	2.4
Al-Si on Outside of Can	1.0	0.6	0.8
Frost Test	1.2	1.1	1.1
Bad Welds	0.3	0.4	0.4
Miscellaneous	0.9	1.0	0.9

The lower yield for February resulted chiefly from an increase in marred surface rejects. A continued effort is being made to control this type of reject by emphasis on the careful handling of pieces. Al-Si rejects were reduced appreciably through improved crimping techniques. A crimping tool with a universal head is being evaluated.

The following special request pieces were canned:

Request No.	Content	No. of Pieces	
P-10-A	Lithium Aluminum Alloy	402	
P-10-D	Aluminum and U-235	51	
ORNL-106	Thorium	536	

In addition, 1,166 bismuth slugs and 64 receptacle slugs were canned.

Slug Recovery

· P Division

	% Reco	% Recovered		Wt Lbs.	
	February	To Date	February	To Date 1950	
Z Slugs	88.7	85.4	3.904	3.904	
X Slugs	10.2	12.5	3.863	3.861	
Rejects	1.1 100.0	$\frac{2.1}{100.0}$			

Inspection and Testing

Autoclave rejects were as follows:

January	February	To Date 1950	
.06/M	.20/M	.14/M	

10





P Division

Ten autoclave failures occurred during February; seven being completely destroyed and three ruptured at the base of the cap.

None of the canned pieces tested during the month were penetrated within 0.010" of the outer can wall. Two pieces were penetrated within 0.015".

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

	<u> </u>	📕 🥉 Usable	
	January	February	To Date 1950
Aluminum Cans	94.4	92.0	93.2
Aluminum Caps	95.1	95.4	95.2
Steel Sleeves	95.2	*	95.2

^{*} No new sleeves were inspected.

The decrease in yield for aluminum cans resulted chiefly from marred outer surface.

Material Handling

A total of 130 tons of rods was received from Simonds Saw and Steel Company. Eighty-one tons of billets were shipped to Simonds Saw and Steel Company and 19 tons of oxide (MD-2, MD-6, CRD-6, and C-6) were shipped to Mallinckrodt Chemical Works. In addition, $7\frac{1}{2}$ tons of solid scrap (UM and G) were shipped to Los Alamos.

305 Test Pile

This unit was operated on a one-shift five day week schedule. A total of 43 tests was run on canned slugs, 27 on billet eggs, 209 on P-10-A slugs, and the following on special work requests:

Request No.		No. of Tests
124	To obtain tracks on lithium plates from exposure and to measure boron content of glass slides.	7
125	To test "Flamort" for possible boron content.	÷ ,4
127	To measure absorption cross- section of aluminum alloys.	9

¹¹ 1212336





P Division

Request No.		No. of Tests
128	To measure percent black- ness of simulated P-10-A slugs to permit using the graphite stringer to test P-10-A slugs.	16
129	To measure absorption cross section of PC tubes.	- 13
131	To measure purity of graphi bars to be used for special tests in the 105-H pile.	te 20 ¯
132	To irradiate gold foil.	1
133	To test P-10-D pieces to de termine pile loading detail	

Special Hazards

No unusual conditions developed during the month.

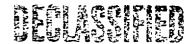
Development

Approximately 20 tons of alpha rolled rods were received from Simonds in the February shipment which had been coated with a 50% solution of Calol. Air samples were taken during the unloading and straightening operation to determine the effect on airborne contamination.

Results indicated that air contamination was reduced from an average of seven times tolerance for uncoated rods to two times tolerance for oiled rods during unloading. Air contamination during straightening was reduced from an average of seven times tolerance for uncoated rods to 1.3 times tolerance for oiled rods. The oil coating proved too heavy during the machining of rods and necessitated frequent cleaning of collets to prevent slippage. In addition, the solid scrap will require degreasing prior to processing in the Melt Plant. Tests are to be continued to determine the proportions fo soluble oil that can be used without interfering with processing the rods and still gain the desired reduction in air contamination.

Ten tons of rods that were alpha rolled from billets preheated in a lead bath at Simonds have been machined. The rods were of good quality and ranged from 1.398" to 1.434" in diameter. Analysis of the billets processed from the scrap and 305 test results on the slugs will not be available until next month.





March 7, 1950

S DIVISION

FEBRUARY, 1950

OPERATING SECTION

I. GENERAL

Sixty-eight batches were started in the Canyon Buildings, sixty-eight batches were processed through the Concentration Buildings and sixty-five batches were completed through the Isolation Building. The average purity for completed batches was 98.6 percent.

Canyon	and	Concentration	Building	Production	Performance	Data -
72.1 =0	1	2-28 EO 170111	22.22			

	B PLANT	T PLANT	COMBINED
Number of charges started Number of charges completed	34 32	3 <u>L</u> 33	68 65
For completed charges:			
Percentage of starting product in waste: This month Last month Cumulative to date	3.1(b)	3.1(a) 3.1(b) 4.0(c)	3.1 3.1 4.1
Percentage of starting product recovered: This month Last month Cumulative to date	94•7 93•3	97.2 92.8 95.6	96.0 93.1 96.3
Percentage of starting product accounted This month Last month Cumulative to date	97.8	100.3 95.9 99.6	99.1 96.2 100.4 ,
Gamma decontamination factor (Log.) This month Last month Cumulative to date		7•56 7•52 7•35	7•49 7•43 7•36





(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.012%-T Plant; 0.014%-B Plant.
(b) 0.010%-T Plant; 0.008%-B Plant. (c) 0.091%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (2-1-50 to 2-28-50, inclusive)

	% of Incoming Product					
	Prepared for Shipment		Reta: Waste Samp			
Average for this month Average for last month Average to date	96•5 98•0 95•9	4.51 4.32 4.64	-0.12 -0.0 0 0.0 0.08 0.0	37 102.4		

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	380
End of month	382
	_
Net increase	2

Remarks: The changes which occurred in the 5 Division are listed below:

2 new hires (monthly roll)

1 transfer from another division (weekly roll)

1 on leave of absence (weekly roll)

Changes in supervisory organization:

- D. S. Thompson was employed as a Supervisor-in-Training on February 8, 1950.
- T. H. Lyons was employed as a Supervisor-in-Training on February 28, 1950.
- E. F. Smith, Senior Supervisor, was transferred from 221-B operations to the Process Control Group.
- R. E. Toczek, Senior Supervisor, was transferred from 221-B operations to the Process Control Group to take charge of the supervisory training program.
- J. D. Ryan transferred from the 234-5 operations to 221-B operations.
- C. B. Foster transferred from 224-T operations to 221-B operations.
- R. A. Hultgren, Shift Supervisor, transferred from the Process Control Group to 224-T as Acting Senior Supervisor.
- 1212339 D. C. Ashbaugh, Shift Supervisor, was transferred from 221-T to the Expansion Section.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

B and T Plants and 231 Building

Extraction Waste Losses - B and T Plants

The product content of the extraction step centrifugation effluent prior to rework increased approximately 0.20 percent of a standard run above the average experienced for the January series runs; at the same time, however, the throw-away loss after rework increased only 0.10 percent of a standard run. The Technical Division has in progress a study for the determination of Americium and Curium 40, which are alpha emitters present in these wastes, but no recent data for runs originating for 400 MWD/T metal have yet become available.

Significant data for extraction wastes are tabulated below:

	B PI	TILA	T PI	TILA	
	February	January	February	January	
Analysis before rework Analysis after rework	1.48	1.27	1.65	1.40	
(throw-away) Average LTD/T	1.08 391	0.98 391	1.06 397	0.95 377	

Reduced Metathesis Volumes (Production Test 224-T-13) B and T Plants

Production Test 224-T-13, which is for the purpose of developing improved precedures for the metathesis step operations in order to reduce F Cell time cycles, was moved to B Plant late in January for revaluation of the final steps of the test. Due to abnormal operating conditions arising in F Cell at B Plant following an operating error, which was corrected through rather involved rework procedures, the test was suspended after seven runs had been processed using the new procedure and was not undertaken again until late in the month. As a result, no further data are available. As was stated in last month's report, it was indicated from the test carried out in T Plant that a twelve hour time cycle could be achieved for the F Cell process with a possible increase in waste losses of no more than 0.02 percent of a standard run.

Acid Wash Runs - T Plant

Two acid wash runs were completed through the T Flant Canyon and Concentration process during the month. Product pick-up experienced is tabulated below.

	PRO	DUCT PICK-U	2
	221 Bldg.	224 Bldg.	Total
* T-10-1-AW-1 T-10-2-AW-2	28 . 6% 36 . 2	11 .9% 9 . 2	40.5% 45.4

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* Started through Canyon in January but completed in the Concentration Building in February.

Single Distilled Hydrogen Fluoride (Production Test 224-T-12) - T Plant

In order to establish another source of supply for single distilled anhydrous hydrogen fluoride for the lanthanum fluoride process in the Concentration Buildings, two thousand pounds of this material supplied by the Pennsylvania Salt Company were used during the month to process twelve runs through the lanthanum fluoride product and by-product steps in the T Plant Concentration Building. Since no adverse effects on the process and on waste losses were encountered, material from this source meeting the specifications of the test material will be approved for process by the Separations Technology Division.

Lanthanum Fluoride By-Product Time Cycles - B and T Plants

A test was started in January and completed during February which showed that digestion period at 35°C during the oxidation of the lanthanum by-product cake rework can be reduced from one hour to thirty minutes without affecting the waste losses from the rework. This procedure was adopted as standard for both plants during the month.

WASTE DISPOSAL

Second Decontamination Cycle Waste Supernatant Cribbing - B Plant

With the cribbing of 137,000 gallons of second cycle waste supernatant from X-112-B tank during the month, the tank was essentially emptied. Approximately 497,000 gallons have been cribbed from this tank since the start of this operation in December.

Letal Waste Line Flush - B Plant

A partial obstruction appeared in the metal waste line running underground from the B Plant Canyon to the 241-BY waste storage farm. This condition was indicated by difficulty experienced with operation of the jet for transferring neutralized metal waste from the waste neutralizer to waste storage. A 10,000 pound flush with 10 percent sodium bicarbonate was successfully jetted through the line and no further difficulty has since been experienced.

Concentration Building Waste Settling Tank Sludge Depth - T Plant

Measurement of the sludge depth in X-204-T, which is currently being used to receive and settle T Flant Concentration Building wastes before discharge of the supernatants to an underground crib, showed ten feet, two inches of relatively compact sludge present. Wastes from a total of 226 runs have been sent to this tank since it was placed in service. Although this depth of sludge represents more than half the sludge capacity of the tank, it is anticipated that there is capacity for as much as 400 more runs, since past experience indicates further compacting of the sludge will take place.

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S Division

Waste Status

The status of the Waste Storage Areas as of February 28, 1950, is shown in the following table:

B Plant								0-	4	
Blàg. 241		Per		tage I			Reserve Batches	to to	Proces	ss
Tanks	Waste	В	<u>c</u>	BX	BA	B	<u>C</u>	BX	BY	Total
x101;2;3	Metal	100	100		7.0	0	0		654	654
×104,5,6	Metal	-	100	100	99•5	-	0	0	651	651
x201,2,3,4	Metal	_	100	-	-	-	0	_	-	0
x111,12	Metal	-	-	-	0	-	-	-	436	436
x104,5,6	lst Cycle	-	_	-	-	_	•	_	-	-
x107,8,9	1st Cycle	100	100	66.7	0	0	0	147	630	777
x110,111,										
112	1st Cycle	-	100	41.8	-	_	0	255	-	255
x110	1st Cycle	-	-	. =	0	-	-	-	510	210

T Plant								
Blag. 241		Per	centage	e Full			Capacito Proc	
Tenks	Waste	<u>T</u>	<u>U</u>	TX	T	U	TX	Total
x101,2;3	Metal	100	100		0	0	_	0
x101,2;3,4	Metal	_	-	30.8	_	-	618	618
×104,5,6	Metal	_	100	-	-	0	-	0
x105,6,7,8	Me tal	-	-	0	-	-	887	887
x107;8,9	Motal	-	100	_	-	0		Ċ
x111,12	Me ta l	-	-	-	-	-	-	-
x104 ; ,5;,6	lst Cycle	100	_		0	_		0
x107,8,9	lst Cycle	100	-		0	_	_	0
x109,10,11,13		_	-	46.8	_	-	487	487
x110,111,112	1st Cycle	-	100	_		0	· <u>-</u>	Ö
x115,118	lst Cycle	~	-	0	-	-	452	452
x104;5,6	2nd Cycle	_	_		_		-	· -
x110,11,12	2nd Cycle	81.8	-	-	105	-	-	105
x113, 14, 16, 1°		-	-	-	_	٠ ــ	1102	1102

MECHANICAL PERFORMANCE

Canyon Equipment Failures - B and T Plants

x104,5,6 2nd Cycle 86.6 - x110;11;12 2nd Cycle 67.4 -

17 2nd Cycle

x113, 14, 16

1 25 2 3 4 2 A description of equipment failures in B and T Plant Canyons, for





which replacements were necessary due to excessive radiation making repairs impossible, is given below.

- a) At B Plant, the Section 7 extraction precipitator tank spray dip leg was found separated from the assembly and the entire assembly was replaced.
- b) The Section 19 precipitator to centrifuge "A" jet assembly at B Plant developed a serious steam leak at the wall connector and was replaced. Because this assembly had formerly been used in one of the sections where high radiation levels are encountered, repairs could not be made.
- c) The Section 13 precipitator weight-density instrument dip tubes at B Plant became plugged and were replaced.
- d) In T Plant the jet assembly for transfer of product solution from the Section 13 centrifuge catch tank to the Section 14 precipitator developed a leak at the flange on the discharge side of the jet and was replaced.
- e) In T Plant the centrifuge to cake dissolving tank jet assembly in Section 8 was removed for disposal when a leak developed at the wall connector of the jet discharge line. Water pressure tests of the piping through concrete disclosed that there was a leak on the pipe nozzle (No. 53) in the circular weld between the flange and the pipe. Since very high radiation levels in this cell precluded the possibility of making repairs, it was necessary to abandon this connector. Since there were no spare lines through concrete from Cell 8-R to Cell 8-L, it was necessary to provide a trench jumper and two cell connector assemblies in order to reroute the Section 8 centrifuge to cake dissolution tank transfer through the pipe trench. The spare assemblies were mocked up in the 221-U Canyon Building. Present routing of this transfer is centrifuge to trench via connector No. 81 (with connector No. 82 supplying steam to the jet), and from trench to the dissolution tank via connector No. 1.
- f) The 5 h.p. agitator for extraction Section 8 cake dissolving tank failed and was replaced.

Concentration Building Equipment Repairs - T Plant

a) Reconditioning of the HF storage facilities was completed at the T Plant Concentration Building during the month. The storage tank was emptied and hydrostatically tested at 100 pounds. The relief valve was replaced and all other valves on the system were replaced with Teflon trimmed valves. In addition, measurements were made of the wall thickness of the storage tank, using a sonic device known as an "Audigage" which was recently acquired by the Instrument Division for this type work. These measurements indicate that there has been an appreciable decrease in the wall thickness of this tank, especially at the dished ends, as shown in the following tabulation of minimum thicknesses found. These measurements will be periodically taken in the future to determine



when replacements will be required to prevent failure in use.

	Eqpt.Dwg.Spec.	E-1Y-224-T	E-17-557-0
Dished Ends	0.3125"	0.21"	0.31"
Side	0.250"	0.23"	0.23"

IV. SPECIAL HAZARDS

Sand Filter Operation - T Plant

For the first fifteen months of operation, the sand filter efficiency at T Plant averaged better than 99 percent, but early in December at about the time a special dissolving of sixteen day aged irradiated metal was carried out, the efficiency dropped to well below 99 percent and has remained in this range since. At first the continued law efficiency figures were attributed to the presence of approximately one ton of undissolved metal with the short cooling time in one of the dissolvers and to the holding of the one ton of metal solution from the same source in metal solution storage. In February, however, this material reached the full 90 day cooling and was processed normally with the rest of the metal from the same push. There has been no change in pressure drops across various critical points in the system which would indicate any change in the operating characteristics of the filter. At month end a thorough investigation is being made of the gas sampling lines and apparatus to determine if a defect or contamination exists in these which could account for the low efficiencies presumably being obtained.

V. PROCESS CONTROL SECTION

Metal Waste Sludge Sampling

As mentioned last month, after several unsuccessful attempts to obtain sludge from a metal waste storage tank with apparatus provided by ORNL, revisions were made to the apparatus. Using this revised sampling equipment, 165 pounds of sludge were finally obtained from the X-101-U tank and this amount shipped. It is quite evident that more flexible apparatus will be required if sludge in any quantity is required in the future.

Dissolver Off-Gas Filters (Project C-337) and Silver Reactor

AEC approval was received for rescoping the Dissolver Off-Gas Filter Project for installation of the filter in the dissolver cell rather than outside the Canyon Buildings as originally planned. The final release and prints for the project have been issued, and at monthend, materials are being procured for the fabrication of the first filter.

The Silver Reactor experimental study has progressed to the point where the Technical Divisions have recommended plant installation for further study. A project is being prepared. An attempt is 12/23 Whing made to get the project approved in time to make this installation in conjunction with the off-gas filters.



Equipment Decontamination Agents

Various tests were performed using a chelating agent known by the trade name "Versene" (Di-Sodium salt of Ethylene diamine Tetra Acetic Acid) to decontaminate various surfaces. Indications are that it is as effective as any agents previously used (among which are soap solutions and nitric acid) without being hazardous to personnel and corrosive to equipment surfaces. The principal detriment to the use of this material in large quantities, such as would be required in attempting to decontaminate the inside of process vessels, is that it is a very strong chelating agent which could conceivably remove radioactive materials from the soil beneath cribs where they are now held, or if introduced in waste storage tanks, make future recovery of metal ions present there more difficult. The use of "Versene" will be evaluated on a larger scale in the immediate future.

VI. EXPANSION SECTION

1. Rala

General

Scope design is estimated to be 75 percent complete and detailed design 15 percent complete. Of eighty prints thus far received, twenty-five have been approved by the Working Committee. The rest are in the process of being studied, revised, or approved.

Fifteen work orders have been written for preliminary construction work. The estimate on these jobs is \$63,215.

The layouts for the dissolver cell and Cell TA have been agreed upon and detailed design is in progress. Cell TB is still being scoped. Preliminary construction work is fairly well scoped and has started with the removal of equipment from the cells.

Dissclving Equipment

The detailed design for the dissolving equipment, namely, the dissolver, scrubbers, scrubber catch tank and filter, is essentially complete and procurement will start in March.

Electrolytic Cell

The General Engineering and Consulting Laboratory is designing the electrolytic cell. The official authorization was delayed somewhat and work did not start until the middle of February. Since then two telephone contacts were made and a number of questions were answered by the Design Division. Progress reports are expected to start being received next month.

Analytical

Specification Letter $\frac{\mu}{\pi}$ 21, Revision 1, Analytical Space Require-





ments, was issued during the month.

AFT COURT

Nine MJ-3 laboratory scope sketches, prepared by the Technical Divisions, were given to the Design Division for scoping of the laboratory.

A Reviewing Committee, composed of members of the Technical and H. I. Divisions, has been established to review the design of special portions of the MJ-3 laboratory to insure its operability.

Cone Handling Equipment

The mechanical arrangement prints on the final product come handling equipment were accepted by the Working Committee as a basis for the preparation of specification drawings and fabrication specifications.

One dimension of the Los Alamos product carrier needs to be changed slightly in order that the mechanism will function properly. Los Alamos has been requested to make the change and is at present considering the proposal.

2. Metal Waste Recovery Plant

General

A directive was received from the Atomic Energy Commission during the month authorizing an expenditure of \$150,000, to cover the cost of engineering work on this facility.

Removal of Waste from Tank Farms

The Engineering Flow Eketch and Design Instruction for scoping of the proposed system for removing waste metal sludge and supernate from the 241-U Area underground storage tanks have been approved by the Separations Committee. This information will be submitted to the Architectural Engineer as soon as certain contractural details are settled. The preliminary plan for the extension of the proposed system to the other tank farms in both the 200 East and West Areas is being developed.

Canyon Building Process Dasign

I survey of the 221-U Caryon Building has been made and a rough layout of the process equipment has been completed. Calculations indicate that the Feed and Waste Concentration Cells, which are the limiting features capacity-wise, will have adequate capacity to meet design requirements according to present flow smeet information.

Auxiliary Facilities

Preliminary prints for the 277-U Mock-Up Facilities and the 221-U Ventilation Facilities, including a send filter, have



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declassified

been issued by Design and studied by the S Division.

3. UNH Conversion to UO3

General

A directive was received from the Atomic Energy Commission authorizing a maximum expenditure of \$25,000 to cover the cost of engineering work during the scoping phase.

Investigation has revealed that design should proceed on the basis of a batch process, similar to that now in use by Mallinchrodt, since there is a lack of personnel and time in which to develop a satisfactory continuous process.

4. Redox

General

The Contact Engineer's Group was active in the review of Kellex scope, architectural electrical, ventilation and Class I vessel detail prints. Developments of particular interest are listed below:

Cell Wash Down and Fire Fog System

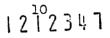
The Kellex proposal for the wash down system for all cells and the fire fog system to be incorporated in organic handling cells has been received and studied. The fire fog system will include a detection system and alarm for each cell, a manual fire valve at panel board of the corresponding cell controlling the flow of raw water from a special fire fog header to the fog nozzles, and provisions for boosting the pressure and assuring an adequate supply of water from the filtered water high tank via fire department pumper truck. A similar system will be utilized in the organic head tank enclosure in the silo area.

High and Low Speed Canyon Agitators

Data are currently being assembled by the Kellex Corporation to indicate the relative number and location of high speed propeller type and low speed puddle type azitators in the canyon equipment. This has assumed a rather large importance at this time because of the effect of the two types on lubrication and shaft water scal pipes in the cell well pattern. This problem has not been completely resolved to date.

Dissolvers

Concurrent with the receipt of dissolver drawings from the Kellex Corporation, a decition was made to release the three U Flant dissolvers made available by the TBP renovation for possible Redox use. The use of these dissolvers is receiving consideration from the Design Division at the present time in light of the







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savings involved, the changes in schedule and wall pattern which would result, and some rather major alterations which must be made to the proposed Kellex designs before they can be approved.

Auxiliary Facilities for 202-S

Design Basis letters for the 284-W Building (emergency generator installation) have been approved and the letters for the 211-S and 276-S facilities are currently undergoing minor revisions prior to final approval. These letters will form the basis for design of the outside facilities by the G. E. Power and Mechanical Design Group.

Silo Lighting and Viewing Window Studies

A study of the lighting and viewing window placement in the silo area has been received and is currently being studied. These studies recommend that at least two additional windows be installed for more complete viewing of the silo area. They also indicate that approximately 125 sodium vapor lights spaced on six foot horizontal centers and nine foot vertical centers over the face of the silo wall are necessary to provide adequate lighting in the silo area. These lights are placed in wall openings sealed from explosive vapors and properly shielded in the aqueous make-up area. The lights are replaceable from the various aqueous make-up levels.

Laboratory Waste System

As the result of cost studies on various types of waste disposal facilities for the 222-S Building, it has been agreed that hot aqueous wastes designated for storage in the 241-S Area will be accumulated in an outside tank near the 222-S Building and transferred on call to the 202-S Building neutralizer for treatment and disposal to the 241-S Area.

Connector Development

"Principle" drawings of the remaining types of female connectors are currently being inspected and approved for model construction. Stellite test specimens deposited on Type 347 stainless steel have completed static and dynamic corrosion tests in the 300 Area at both room and elevated temperatures. As a result of these tests, it has been decided to use #6 Stellite deposited by shielded are on the face of the Type 347 ss male connectors. On 309 SCb connectors used primarily on boil-up vessels, the same stellite will be used; however, it will be recessed so that there will be no contact between the stellite and the process sclutions and vapors; the junction between the stellite and stainless steel being covered by the connector gasket. Samples of the insulating material to be used in the electrical connectors are currently being exposed to high level radiation and to hexche sclutions to determine the stability of the materials.



ANN Market Survey

As a result of the ANN Market Survey, formal bids have been received from a number of potential vendors for the ANN to be used in the Redox program. These bids are currently being analyzed and it is expected that the contract for the material will be let in the near future.

Super Filtrol Slurries

Because of the large amount of flush water which must follow the transfer of Super Filtrol from the 202-S Building to the 241-S Area, the Manufacturing Divisions have requested that consideration be given to the installation of a tank in or near the 202-S Building which will allow the accumulation of several weeks: production of Super Filtrol wastes and permit the transfer of material to the storage area at less frequent intervals. The Design Division is currently studying the economics involved in the two locations.

5. First Cycle Waste Evaporation

The design scope, estimated cost and Project Proposal preparation have been completed covering fabrication and installation of a first cycle waste evaporator in each of the 200 Areas. The proposal has been submitted for approval. Every effort will be made to expedite this phase since it is essential that the first unit be placed in operation at the earliest possible date.





POWER DIVISION FEBRUARY 1950

GENERAL

The break in the severe cold weather, which occurred on February 6, permitted the resumption of normal power operating conditions, and the discontinuance of emergency measures, such as the operation of the reuse water system, the heating of raw water, supplying additional heating facilities at various locations and recirculation of water in systems normally inoperative.

Regular coal shipments were discontinued on February 6, as a result of the miners' strike. Although small quantities of coal were obtained, coal stocks were reduced consderably during the month.

The annual inspection of several Power Division boilers was made by a Traveler's Insurance Company certified boiler inspector on February 23 and 24. One boiler in each power area was inspected.

PERSONNEL AND ORGANIZATION

No. of employees on payroll - February

Beginning of month

543

End of month

538

Net decrease

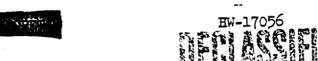
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The indicated net decrease is the result of the resignation of two employees, the retirement of one operator, and the removal from payroll of two men on account of illness.

100 AREAS

Rains and melting snow during the month caused river water turbidity surges, which necessitated increases in coagulant feeds. Although turbidities as high as 95 ppm were encountered, water quality was maintained without difficulty. Coagulant feeds as high as 25 ppm were used for short periods, but the average feed rate for the month was approximately 8 ppm, which is the lowest February coagulant feed rate since the start up of operations.

Simulated power failure tests were conducted in the 100-B Area on February 7, in the 100 F Area on February 13, and in the 100 D Area on February 23, to obtain information on the perfermance of affected equipment.



Power Division

The No. 6 refrigeration unit in the 189 Refrigeration Building in the 100 D Area was removed from its base and space made available to the Design and Construction Divisions for the installation of a heat transfer test unit.

Satisfactory progress was made during the month on the installation of 14-inch descrator by-passes in the 185 Descrator Buildings in the 100 B and F Areas.

A broken vent on the export line inside the 100 D Area, which occurred at 10:30 p.m. on February 7 required sectionalizing the export system for several hours. The system was returned to normal at 9 a.m. on February 8.

In the 100 F Area, 190 Process Pump House, the No. 11 process water pump motor tripped out on February 3, causing a 15 psi variation in process water pressure. This unit had been placed in service on January 31 after the motor and controls had been inspected and tested. The trouble was found to be in the overload thermal relay and repairs were completed on February 7.

In the 100 H Area, 190 Process Pump House, the silicate injection pumps were connected to the dichromate injection system and will serve as spare units. Also, at this location the replacement of the 30-inch water flow control valve on No. 2 tank with a 14-inch valve was completed and placed in service under controlled conditions on February 16. The No. 2 process water storage tank was returned to service at the completion of this installation.

200 AREAS

Installation of two by-pass valves in the coal transfer conveyor at the 284 Boiler House in the 200 West Area was completed on February 7, and work started on February 28 on the replacement of the 5 h.p. motor drive with a 10 h.p. unit. This work is part of the MJ-2 Project.

Alterations to the supply plenum relief dampers at the 234-5 Building were completed on February 7. Performance of the recently installed automatic controls for these dampers in satisfactory, maintaining constant plenum pressure under strong wind conditions.

The No. 5 EM exhaust fan serving the 234-5 Building was removed from service on February 6 because of excessive vibration and heating of bearings. Both the inboard and outboard bearings were found faulty and replacement with new bearings was completed on February 14. Representatives of the Fafnir Bearing Company and the Arthur Forsythe Company inspected the exhaust fans in operation and examined several bearings which had previously failed on these units. Records of operating time and lubrication data pertaining to bearing failures was forwarded to the manufacturers and their recommendations are expected at an early date.





Power Division

A shutdown of the ventilation system at the 234-5 Building was effected from 12:10 p.m. to 3:10 p.m. on February 19. New quick action pilot control valves were installed on all zone damper controls, replacing the existing Johnson pilot valves. The steam driven emergency exhaust fans were operated during this shut-down. Considerable improvement in the control and stability of the ventilation system resulted from the installation of the new pilot valves.

A break in the 12-inch senitary main near the 283 Filter Plant in the East Area, which occurred at 5:30 a.m. on February 1, resulted in this line being out of service till repairs were completed on February 7. During this period water was supplied to the area through a temporary line which by-passed the break.

300 AREA

On February 19, an underground water leak in the vicinity of the First Aid Building was found to be in an old temporary 2-inch steel line. This line was blanked off and normal service resumed on February 20.

• Insulation of the Nos. 1 and 2 boiler settings with plastic coating was completed February 9.

101 SHOPS

On February 26, water was found leaking through the roof of the raw storage room. Investigation revealed a drain pet cock missing from the betten of the spray water pump on the No. 205 air conditioning unit. Water from this drain had worn a hole through the roofing and was leaking into the building. The spray pump had been previously removed from service and had been started by mistake before the drain cock was replaced.

WHITE BLUFFS ICE PLANT

Several isolated water lines in the outlying sections were damaged by freezing. Repairs had been completed at the month's end.

No ice was manufactured during the north.

POWER ENGINEERING SECTION

The principle activites of the Results and Engineering Section included budget work, preparation of reports on simulated power failures and continuation of work on operating manual revision.



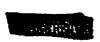
POWER DIVISION STATISTICS

From February 1

Thru February 28 ,19 50

AREAS

RIVER PUMP HOUSE (Bldg. 18 River state Feet above se River temperature Water to Reservoir	(max) 388.2	100-D 380.2 378.8 379.4 37.0 39.805	100-F 366.8 365.3 365.9 37.4 36,732	100-H 371.8 370.2 371.2 36.9 47.271
RESERVOIR (Bldg. 182)				
Water to Filter Plant Water to Condenser System Water to Export System Chlorine added # 1 inlet	gpm avg.rate 33.896 gpm avg.rate 2.988 gpm avg.rate 1.582 gpm nor.rate 3.937 pounds 7.845	35,442 2,753 1,610 3,937 8,413	33,110 3,097 525 3,937 3,000	43,633 3,418 220 3,937 3,000
FILTER PLANT (Bldg. 183)	- ··			
Filtered water Power House Filtered water to Process Filtered water to Construct Filtered water to DR Proce Filtered water Fire & San, Chlorine for Water Treatment Lime for Water Treatment Coagulant Water Treatment Raw Water pH Finished Water pH Alkalinity, M.ORaw Finished Residual ChlSettled- Finished Iron - Raw North Clearwell South Clearwell Hardness - Finished Turbidity - Raw Filtered	gpm avg.rate 31.502 etion gpm avg.rate ess gpm avg.rate 178 ent pounds 4.055 ppm avg. 96 pounds 32.100 ppm avg. 2.8	309 31,110 227 2,186 .81 28,360 2,4 96,420 .6,1 8,07 7,75 63 58 .15 .09 .30 .01 .79 10,3 0	305 29,440 154 2,000 ,42 21,000 1.9 95,680 8,6 8,10 7,73 64 60 ,18 ,15 ,02 ,02 68 11,0	277 36,759 208 5,000 53 24,000 1,6 111,520 7.6 8,10 7.77 66 62 .18 .11 .25 .01 .01 67 13.0 0



17056 HW 17056

	Power Division	-,		From Fe	bruary 1	,19 <u>50</u>
)		•		Thru Fe	bruary 28	,19 <u>50</u>
	POWER HOUSE (Bldg. 184)		100-B	100-D	100-F	100-H
	Maximum Steam Generated Steam Generated - Total Avg. rate 225 psi Steam Plant (Est.) 15 psi Steam Plant (Est.) Coal Consumed Coal in Storage (Est.) DEAERATOR PLANT (Bldg. 185) AND 190-H TANK ROOM	lb/hr M pounds lbs./hr. M pounds M pounds Tons	176,000 93,964 139,827 78,868 813 7,284 15,405	192,000 102,930 153,169 86,472 813 7,920 16,733	182,000 99,232 147,666 83,335 813 -7,752 14,382	276,000 93,660 139,375 78,611 813 7,317 15,224
).	Water Flow Chemicals consumed: Dichromate Sodium Silicate Chemical Analysis:	gpm avg.rate ed:		30,860 20,900 0 7,65 1,8 ,02 ,11	29,190 16,000 C 7.69 1,8 .02 No Anal	36,509 33,000 0 7,67 1,9 No Anal.
	PROCESS PUMP ROOM (Bldg, 190 Total Water Pumped	gpm avg.rate		30,685 32,127	29,015 31,120	36,334 40,500
	Water Temperature	avg. F.	39,8	41.0	40,1	40.1
	VALVE PIT (Bldg. 105) Chemicals Consumed: Solids Chemical Analysis: A,B,C & D Headers Standard Limits	pounds	1,400	2,000	0	0
	рн 7.5-7.8	pH (max) (min) (avg)	7.70 7.60 7.65	7.70 7.60 7.65	7,70 7,65 7,68	7.70 7.60 7.65
	s ₁ 0 ₂	ppm (max) (min)			7.00	
	Na ₂ Cr ₂ O ₇ 1.8-2.2	(avg) ppm (max) (min)	2.0 1.8	2.1 1.9	1,9 1,8	2.3 1.9
	Iron	(evg) ppm (mnx) (min)	1.9 ,02 ,01	1.9 ,08 ,01	1.8 .02 .01	2.1
	Chlorides 1212354	(avg)		1.1	1,1	02 1, 3



Power Division

DECLASSIFIED

	Power Division			
			From February 1 ,1	9_50
			To February 28 ,1	9 <u>50</u>
		Unit	200 Areas	
			200_E 20	<u>0-W</u>
	Reservoir (Building 282)		*	
	Raw Water Pumped	gpm avg, rate	1,867	2,069
	Filter Plant (Building 283)			
	Filtered Water Pumped Chlorine Consumed Alum Consumed Chlorine Residual-Sanitary Water	gpm avg. rate lb. lb. ppm	336 172 1,294	743 177 4,887 .3
	Power House (Building 284)			
)	Maximum Steam Generated Steam Generated - Total Steam Generated - Ave. Rate Coal Consumed (Est.) Coal in Storage (Est.)	lbs/hr m lb lb./hr tons tons	54,000 23,116 34,399 1,689 5,076	151,000 56,988 84,804 4,209 6,852
			300 Ares	
	Power House (Building 384)			
	Maximum Steam Generated Steam Generated - Total Steam Generated - Avg. Rate Coal Consumed - Total (Est.) Coal in Storage (Est.)		42,320 17,672 26,298 1,473 1,383	
	Sanitary and Fire System (30	<u>o</u>)		
	Sanitary Water (From 3000 Ar Well Water Pumped - Total Total Water Pumped Total Water Uhlorine Residual	ea)gal gal gal/day gpm avg. rate ppm	28,754,000 232,500 1,035,160 719	
	Thite Bluffs		MISCELLANEOUS AREAS	
	ice Manufactured 2 2 3 5 5	lbs	0	
	101 Shops Loal Consumed	tons	382	E



HW 17056 .

INSTRUMENT DIVISION MONTHLY REPORT

FEFTUARY, 1950

February 28, 1950

GENERAL

Demand for the services of the Instrument Development group continues to grow. Additional engineers and space are required to meet this demand. A project proposal is being prepared for the construction of an Instrument Laboratory in the 300 Area. The Laboratory would include Instrument Development, Advanced Measurements, portable radiation detection instrument repair, and associated activities.

100 AREAS

The quadrant monitor system which is being tested as a possible pile power level indicator continues to give trouble. Insulators within the chambers fail after exposure in the pile. On 100-B unit shutdown resistance checks of each chamber confirmed the suspicion that only one chamber of the four is operative. No replacements have been constructed due to lack of a proven design.

Special power interruption tests were conducted in 190 B, D and F Buildings during the month. These tests were similar to the test conducted in 100-H on January 26, 1950, using a 16 mm. moving picture camera to record data from a special test panel.

Present status of pressure monitor gauge replacement program in 105-H is as follows: rebuilt gauges installed - 656; rebuilt gauges on hand - 160; rebuilt gauges needed - 1239.

Five thousand banana plugs were ordered and received to make up new type jumpers for the pressure monitor electrical connections. Fabrication of jumpers and installation should be complete early in March. These improved jumpers should reduce the number of alarms on the panel and corresponding controlled shutdowns.

Shutdown Experience

The following controlled shutdowns were made by "P" Division operators due to the impossibility of resetting pressure monitor alarm within the 20 seconds limit.



D				ST. NO.	1		2	l mark
---	--	--	--	---------	---	--	---	--------

100-D	Feb.	10.	10:58	PM
100-H	Feb.		1:31	PM
		7	1:46	PM
		10	9:55	MA
		10	3:55	PM
		13	11:48	MA
		19	10:51	AM
		19	9:12	PM
100-F	Feb.	2	12:00	NOON

On February 13 at 1:06 PM the 100-F Area unit was scrammed. The Power Division was putting #10 pump in 190 Building on the line in preparation for a test to be run at 3:00 PM. Pressure was bumped to-370 psi., a number of gauges in the pressure monitor system gave high pressure alarms and could not be reset in the alloted 20 seconds.

On February 2 at 1:05 AM the 100-H Area unit was scrammed. Annunciator tab indicated that #2 Beckman was the cause. The Beckman was replaced.

Studies

Proposal on replacing all 50 psi. range gauges in 100-B Area and 100-F Area pressure monitor systems with 100 psi. range gauges was rejected by "P" Division. Work will continue on modification of all 45-95 psi. range gauges to 45-115 psi. range as conditions require replacement.

-- <u>200 AREAS</u>

T & B Plants

Rotation of the objective head of the periscope of the 75 ton crane in 221-B failed due to a seized bearing.

Since procuring a supersonic thickness gauge it has been possible to start a program of measuring wall thickness of chemical storage tanks from one side only. During the month over 1800 measurements were made on the anhydrous hydrofluoric acid tanks in 211 and 22½ T & B.

Construction Project MJ-3

Work has been started on removal of existing instruments from Sections TA and TB in 221-T, preparatory to reconditioning and modification. Approximately 40% of these instruments have been removed to date.

Z Area

A high leak rate in the vacuum system of Hood 14, Building 234-5, was experienced in furnace No. 2. The Miller tubes were replaced to eliminate possibility of error in pressure readings. Extensive leak checking over a period of six days revealed several leaks on the 'goose-neck' section of the vacuum system and at the Bourdon gauge connection. Temporary repair was made to the 'goose-neck' until a new one is available



Hi-17056

and an acceptable leak rate obtained. After failure of one thermocouple on Hood 14, couples were changed on both furnaces. Failure may be attributable to oxidation.

A ventilation system shutdown on February 19 afforded opportunity for putting into service the Moore positioners on the supply damper controllers. Normal ventilation conditions were maintained during the change-over from the original Johnson positioners and better stability of control than that anticipated has been experienced from the replacement positioners. It has been found that material access doors may be opened, supply fans changed and air locks violated without seriously upsetting the system. This change of control response will no doubt affect the plans for construction of an air lock for the material access door.

With the addition of two mechanics to the Building 234-5 crew, monthly routine maintenance schedules have been put into effect. Until this time routine work has been delayed due to urgent maintenance requirements.

300 AREA

MANUFACTURING SECTIONS ...

C-333 - H. I. Operational Division Survey Instruments

55 Portable Poppy Probes

Probes have been completed, tested and one ready for delivery.

17 Portable Poppy Chargers

These units are being modified to provide a slower charging rate as a protection factor for the high voltage condensers.

31 Constant Air Monitors

Sufficient information is not available to proceed with this part of the project. The Instrument Development group is preparing design specifications for the manufacture of a prototype.

16 C.P. Survey Meters (Revised Model)

Design has been altered to provide a fourth operating range and a prototype is being expedited thru the shops.

OPTICAL SECTION

A Work Order has been received to convert the two C-Area crane periscopes for application to the 202-S Building (MJ-1). Active work is now in progress in both the Design Section and the Machine Shop.

Two special periscopes and one special power supply are being manufactured per request of the D&C Division.





A request was received from the D&C Division to revise an outdated estimate on the cost of manufacturing a periscope for the 241 storage tanks. After submitting a revised estimate and reliminary sketch to the desired specifications, subsequent developments now indicate that a preliminary light-intensity study is needed to establish firm operational requirements. This study is scheduled for the first of next month.

MAINTENANCE SECTION

7

Portable Instrument Shop

The rubber hydrochloride that is being used to replace nylon films on the Alpha Survey instruments does not permit accurate indication at high-level radiation intensities. Nylon film is no longer available. This problem is being investigated by the Instrument Development group.

303 Area

Instruments for the extrusion process in the 314 Building were calibrated and put in service for a special process operation.

321 Building

Effective February 2, the Instrument group assumed responsibility for maintaining Building 321 air conditioning instruments.

3706 Building

A Hanford Works modification of the KAPL fluorimeter for measuring low level alpha emissions has been completed and put in service in the laboratory. The Technical Division reports that the instrument is working very satisfactorily. A continuation of testing is in progress to decide if additional instruments are to be made.

DEVELOPMENT SECTION

Temperature Mapping for 100 Area

Report HW 16092 describing the proposed system for mapping the process tube outlet water temperatures at a pile in 5 seconds has been completed and is being issued. It is recommended that the important features of the proposed system be demonstrated on a small scale field test which will provide the scanning of 46 process tubes.

P-11 Project

All radiation counting and recording equipment has demonstrated satisfactory performance in the laboratory tests. Installation work at the site is nearing completion, even though final checking of the instruments has been handicapped by delays in other phases of the work.

1212359



Slug Detector

On February 7, a meeting was held with representatives of the Plant Security and Services Divisions. General details of the proposed detector location and arrangement of shielding were discussed. It was decided that the Plant Security and Services Divisions would request the preparation of an informal project proposal to cover the planned installation. A cost estimate of the instrumentation of the two detector units has been prepared and forwarded to the Project Engineering Divisions.

Temperature Monitor - I.B.M. System

The installation at the 100-H area has been operating satisfactorily since its completion on January 27. A field inspection of associated equipment at areas 100-B, 100-D and 100-F is being made to determine the extent of changes necessary to install similar equipment at these locations. Additional funds may be required to complete this project in all areas.

700 AREA SECTION

Per request of the Community and Public Works Division, chart changing and routine maintenance has been discontinued on the temperature recorders for the commercial facilities.

DESIGN & CONSTRUCTION GROUP

MJ-2 Project - Phase I (234-5 Building)

In recent conferences it was decided that the temporarily installed pressure control on the supply plenum was satisfactory and that the only additional equipment required was a damper operator which would fail safe and a pressure recorder with alarm and safety contacts mounted on the main panel. Bids on this equipment are expected by March.

Tests run on the pressure relief duct showed that the theoretical capacity could be obtained by removing the rain louvers and by opening the dampers completely. The damper was opening only 64°. Duct capacity with above corrections is 105,000 CFM at 1.83" S.C. plenum pressure.

MJ-3 Project - Radioactive Lanthanum

Progress on Cell 5 Instrumentation

- L. The Instrument Panel Arrangement for Cell 5 is complete.
- 2. A tentative Material and Equipment list is complete.
- 3. Instruments not available on the plant have been requisitioned. No quotations from vendors have been received.
- 4. An Instrumentation Flow Sheet is complete and preliminary prints have been issued for comment.
- 5. Piping prints for individual panels is well under way with one complete print now issued for comments.

12/2360



6. Orifices calculations have been made on water flows and off-gas flows, and drawings on these have been issued for comment.

Instrumentation for the remainder of the project is progressing satisfactorily.

MJ-1 Project (Redox)

Twenty-four requisitions have been received from Kellex to date. Seventeen were returned to them for corrections. Seven have been sent to the Purchasing Division. These requisitions account for approximately 75% of the instruments to be mounted on panels.

Twenty-one instrument engineering flow diagram prints have been received from Kellex to date.

A review of the MJ-1 laboratory ventilation system control was made and comments prepared. We believe that instrument specification should be written up in detail on this ventilation system if good control is to be obtained. Experience gained from the ventilation system control of Building 234-5 should prove a valuable aid in preparing these specifications.

MAINTENANCE DIVISION FEBRUARY, 1950

The Maintenance Division backlog at the close of the month was 6,156 mandays of work, which is a 1.1% increase over the previous month.

100 AREAS

Because of internal damage done by pushing out stuck slugs in the "B" area pile, process tubes #0485 and #0553 were removed and replaced with new tubes. The "D" area pile process tubes #2273 and #2290 were removed, to permit the Technical Division to take graphite samples from the bore.

Vertical safety rcd thimbles in three pile units were inspected by bcrcscope and the following were noted as being in poor condition due to internal corrosion:

"B" pile - thimble 17, 18, 20, 26, and 34
"D" pile - thimble 14, 17, 24, 26, 29 and 35
"F" pile - thimble 19, 25, and 37

Vertical safety rod thimbles #13 and #26 in the "D" pile, which had been pressure tested and found leaking from corrosion were replaced.

Due to movement of the "D" pile and resulting offset of the thimbles safety rod #27 and #33 would no longer satisfactorily enter the pile and have been cut of service for several weeks. They have been replaced with stainless steel knuckle jointed rods, fabricated in our shops. These rods have sufficient flexibility to enter the thimbles and are now functioning satisfactorily.

The condensate sight glass on the drip legs of the steam lines servicing the 105-H steam turbines have been removed. This was done to preclude recurrence of sub-major injury to employees based on a recent experience.

The Fisher governor valves to the 190-H pump drive turbines are being machined to provide sufficient clearance to prevent sticking. Valves corrected to date are #1, 2, 4, 14, and 16.

200 AREAS

The water supply into Hood #8 of the 234-5 process line was changed from series operation to parallel operation. This allows either the cooling coil or gas jet header to be operated and controlled separately, thus eliminating condensation within the hood. A special Karbate lining was fabricated and installed in the jets to minimize errosion which is expected to increase their service life.

Maintenance Division

In order to replace a fractured Saran line fitting in Hood #7 in process line of Building 234-5 an additional glove port was installed. This eliminated the need of building a special green house or enclosure to do this work and resulted in a considerable overall savings in direct cost and shutdown time.

The press assembly in Hcod #19 of the 234-5 Building process line was completely releveled. The base plate was found to be .060" out of parallel with the press head. The base plate was securely fastened down and reground to within .001" of parallel to the press head. A new press can was installed in the operation and the resulting production was within manufacturing tolerances.

A gasket failed in the glass lined evaporator vapor tower in process hood #29, Building 234-5. Inspection revealed that the adjoining 30th glass lined speci piece was badly pitted. Replacement was made while the unit was disassembled.

Due to continuing difficulity with heating and failure of the 292-Z exhaust fan bearings, the representatives of the bearing and fan manufacturers were requested to come to the plant for an inspection of the installation. Following this two of the failed bearings removed from EM-5 fan were sent to the factory for study. The recommendations of the bearing manufacturer are being solicited to improve the service of these fans.

The hydroflucric acid storage tank, piping and valves in the West Area Concentration Building were inspected and the valves were replaced with the Teflon plug type. The reconditioned system was tested for leaks.

Eight valves in the hydrofluoric acid system at the Canyon Tank Farm, 200 East Area, were replaced with Teflon plug type valves. These valves equipped with a Teflon plug are a special adaption developed by the Maintenance Division to eliminate sticking or replacement due to a plug failure.

During the extremely cold weather at the first of the month, a 12" sanitary water main failed near the 200 East Area reservoir. Due to the difficulity of repairing the break within a reasonably short time, and the necessity of providing service to the area while repairs were made, a 6" temporary line was installed above ground between two fire hydrants 400 feet apart.

The 200 East Area shops completed fabrication of 16 Canyon cell replacement pipe assemblies and one canyon trench pipe assembly used in a process flow change.

300 AREA

The "A" furnace in the 314 Building melt plant was overhauled. A new turntable drive shaft, worm wheel, casters, packing gland, and packing rings were installed.

1212363

Maintenance Division

A 3" packed and a 3" plate pulse column were fabricated and installed in the 321 Canyon in connection with the MJ-4 development program of the Technical Division.

The Watson - Stillman rcd extrusion press in 314 Bldg. was reactivated from layaway condition to permit a test run making a special extrusion for development purposes.



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ELECTRICAL DIVISION

FEBRUARY, 1950

GEHERAL

The backlog of scheduled work for the Division at the end of the month was 8,954 mandays, a net reduction of 904 mandays during the month. This reduction was mainly in substation maintenance and line crew backlog, principally because of cancellation of some work and the completion of other work in less than estimated time.

The attached load chart for the peak day of the month, February 3, shows a peak of 88,200 KW for the entire system with a coincidental demand of 33,800 KW for the combined 115 KV and 66 KV systems. This is an all-time new peak demand coinciding with the coldest weather (-24°F) of the winter season during the morning period, 7:30 to 8:00 a.m. It had been hoped that the off-peak pumping control in effect all winter (183 River Pumps) would reduce the seasonal peak by 1800 KW with corresponding savings of \$31,500 based on \$17.50 per KW year demand rate. However, during the first days of February, such control had to be discontinued as it became necessary to keep pumps in operation so as to prevent freezing of intakes and pumps, several of the latter having been frozen. Hence, the hoped for savings were not realized.

Blackout requirements for the Village of Richland, North Richland and 300 Area have been discussed with the Security sponsored committee. Reinstatement of Budget Item B-856 has been requested covering only supervisory control for the 115 KV system to enable immediate blackout should the occasion arise.

The Electrical Standards Subcommittee has reviewed and adopted standards for outside line drawing symbols.

An agreement has been made with Project Engineering Division for interchange of engineering personnel, as work load permits, for periods approximating one year. This interchange is intended to provide a broader training and experience for the development of young Engineers and will also prove mutually beneficial to the two Divisions. Preliminary arrangements have been completed to exchange two men on this basis.

AREA ACTIVITIES

Assistance was given as necessary toward successful completion of power failure tests at 190 Buildings, 100 B, D and F.

Project M-718 (Immersion Heaters for Evacuation Buses) is now complete in all areas.

In the 300 Area, a further dipping furnace is being rebuilt in order to minimize element failures as was achieved with other similar furnaces.

Electric services have been connected to the new temporary Melting and Fabrication Building, 3730 (Project C-330).

After communication with manufacturers, Activated Alumina has been substituted for Magnesium Perchlorate as a drying agent for the gas of the 3745-A Building



--117056

Electrical Division



) 2,000,000 volt X-Ray unit. The change was made because Magnesium Perchlorate is a definite explosion hazard.

All inside electrical maintenance work is normal and up to schedule in each area.

TRANSLISSION AND DISTRIBUTION

Because of excessive deflection and one instance of cracking at the center phase suspension, four cross-arms have been replaced with heavier timber in the new 115 KV transmission line. Instructions have been issued to test several representative cross-arms to destruction so as to determine whether the margin of safety in design is ample despite a tendency toward excessive deflection under normal load.

The 230 KV line re-routing at the west tap to 151-D Substation has been completed, permitting Subcontractor to proceed at the 190 DR Water Plant site.

Temporary transformers have been removed from the Richland North Commercial Areas, and installation of the three transformer banks, just received, and final connections have been completed,

Motoring is being installed on ten representative residences in Richland to verify estimates of energy consumption and demand.

At the request of the Community Division, services have been disconnected from all buildings in Columbia River Camp to permit dismantling.

Two power surges on the Bonneville Power Administration system resulting from troubles on the Midway-Ellensburg line during extremely cold weather caused scrams to 105-B at both 8:04 a.m. and 5:45 p.m. on February 3. Stable conditions were restored in time to preclude extended shutdown.

TELEPHONE SYSTEM

Installation of customer services, telephone instruments, and cable splicing in Richland continues at an accelerated pace, using twelve temporary employees.

During the month, 604 new residential and 25 new commercial installations were completed.

Telephone cable installation plans have been reviewed with Design and Construction Divisions for 190-DR Water Plant, as well as telephone requirements for the final area including voice-powered telephones for inter-communication.

A summary of current telephone service rendered by the Richland Telephone Exchange is:

Lines in service	3077
Stations in service	4531
Vacant lines	923

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POWER STATISTICS - ELECTRICAL DIVISION FOR HOMER ENDING FEBRUARY 28, 1950

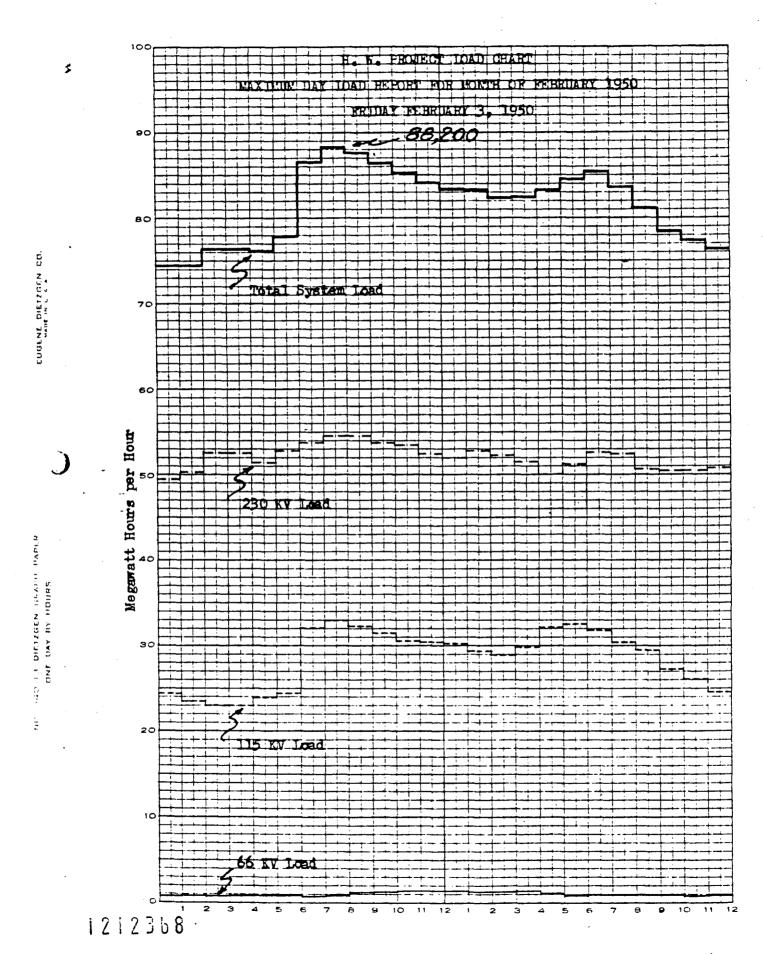
		BIERGY - 17 HRS.		HAX. DEMAID - W		LOAD FACTOR - %	
			Teb.	Jan.	Feb.	Jan.	reb.
	ITEM .	Jan.	760.	02110	Len.	0011	100.
	230 KV SYSTEM						
	A-2 Cut (100-E)	7,260	6 700	72 000	12 000	01 7	84.2
	A-4 Out (100-D)	7,200	6,790	12,000	12,000	81.3	
	A-5 Out (100-H)	•	6,870	13,400	13,300	79.2	76.9
	•	9,576	8,928	14,400	13,350	89.4	99.5
	•	6,590	6,450	11,300	11,300	78.4	84.9
	A-8 Out (200 Areas) TOTAL OUT	3,870	3,360	5,800	6,100	89.7	82.0
	HIDWAY IN	35,196	32,598	56,900**	56,050**	83.1	86.0
		35,786	32,688	55,200*	54,400*	87.1	89.4
	Transm. Loss	590	290				
	Percent Loss	1.6	. 9				
	115 KV SYSTEM	7 504					
	31-34 Out (N.Rich.)	1,584	1,373	2,765	2,650	77.0	77.1
	33-34 Out (500 Area)	425	378	816	804	70.0	69.9
	B3-35 Out "	514	498	1,400	1,720	49.4	43.1
	BD1-S1 Out (Richland)	8,864	7,006	18,360	17,820	64.9	58.5
	221-22 Out	7,928	6,566	17,100	16,740	62.3	58.4
	TOTAL OUT	19,315	15,821	40,441**	39,734**	64.2	59,2
	Benton In	03	240	18,500*	37,000*	• 6	. 9
)	S. Richland In	17,736	14,328	35,640*	34,200 *	66.9	62.3
,	TCTAL III	17,816	14,568	54,240**	71,200**	44.1	30.4
	Transm. Loss	-1,499	-1,25 3				
	Percent Loss	-8.4	-8.6				
	S6 IV SYSTEM		•				
	E7-S10 Out (W.Bluffs)	300	26 4	735	788	52.7	49.9
	Hanford Out	378	311	600	600	84.7	77.2
	TOTAL OUT	678	575	1,265**	1,389**	72.0	61.7
	HAIFCRD IN	670	578	1,500*	1,300*	60.0	6€.2
	Transm. Loss	- 8	3				
	Percent Loss	-1.2	. 5				
	PROJECT TOTAL						
	250 AV Out	35,196	32,398	50 , 900**	56,050**	83.1	86.0
	115 EV Out 66 EV OUT	19,315	15,821	40,441**	39,734**	64.2	59.2
	TOTAL OUT	678	575	1,265**	1,383**	72.0	61.7
	250 IV In	55,189	48,794	98,606**	97,172**	75.2	74.7
		35,786	32,688	55,300*	54,400*	87.1	89.4
	115 IV In	17,815	14,568	54,240**	71,200**	44.1	30.4
	66 IV In	670	578	1,500*	1,300*	60.0	66.2
	TOTAL IN	54,272	47,854	84,600*	88,200*	86.2	80.7
	Transm. Loss	-917	-960				
	Percent Loss	-1.7	-2. 0				

^{*} Denotes Coincidental Dermind ** Non-Coincidental Demand

Average Power Factor - 250 IN System-96.1



Average Power Factor - 66 KV System--92.4 Average Power Factor - 115 KV System-94,9





TRANSPORTATION DIVISION
MONTHLY REPORT
FEBRUARY 1950

DECLOSITIO

Date: 12-18-51

GENERAL

Severely cold weather accompanied by excessive snowfall handicapped most of the activities of the Division throughout the month and created a large volume of additional work. Considerable difficulty was experienced in the starting of automotive and related equipment; road and track maintenance crews were engaged in the removal of snow and providing drainage for the excessive runoff which followed; and the Area Service forces were engaged in the control and disposal of surplus water in 100-B, 100-D, 100-F, and 200 West Areas.

Transportation Division forces continued to keep Yakima River ice conditions under surveillance until after the channel became ice free and near normal on February 20. Blasting was performed February 6, 7, 15, 16 and 19 in the vicinity of the George Washington Way Highway Bridges and the Northern Pacific-Union Pacific Connection Railroad Bridge now under construction on Project C-185.

RAILROAD ACTIVITIES

Commercial inbound tonnage increased approximately 17% over January but is still far below normal. Coal receipts remained at a reduced rate as a result of the continued coal strike. Process service continued at a normal level with all movements being completed as scheduled. Cars handled totaled 1,433 compared with 1,223 in January and 2,168 in December.

Rail service to the Project was suspended February 16 because of water damage to a small bridge on the Milwaukee Railroad between Priest Rapids and Beverly Junction. Normal service was resumed the following day.

The Central Mix Plant was reactivated and carload shipments of cement are being delivered to the facility.

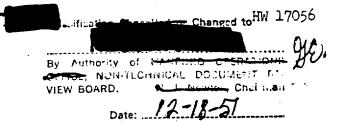
Major repairs to flat car 10-A-3614 have been completed.

Eighty-ton Diesel electric locomotive 39-3719 was removed from service on February 1 for major engine repairs.

Railroad track maintenance continued on a near normal basis throughout all five sections. Removed snow and ice from all switches and crossings and provided drainage for the excessive runoff which followed. Excavated and backfilled over pipe line on 272 Building track in 200 West Area where seepage under the track caused settlement. Placed 19 truck loads of ballast in the repair of settled track in 100-D and 100-H Areas.



Transportation Division



AUTOMOTIVE ACTIVITIES

Area and Village Bus Systems transported a total of 184,007 passengers in February which is a decrease of 23,900 over January. This decrease represents a partial return to normal brought about by a moderation of weather plus a 28 day month which included a holiday.

In addition to the regular school booster busses, an additional 50 booster runs were required during the extremely cold weather at the beginning of the month.

Two K-7 International busses were reactivated and added to the fleet for 300 Area service.

Special shuttle bus service within the Pasco Warehousing Area was made available to prospective buyers at a public sale on February 27 and 28. This service was requested by the Atomic Energy Commission Excess and Disposal Department.

Completed removal and resetting of engine heat thermostats in the remainder of the GMC coaches in an effort to increase the heater cutput.

Painting of 8 of the 15 Village passenger busses has been completed by an cutside contractor.

The Planning and Methods Section initiated purchase requisitions for 77 Sedans, 24 Sedan Delivery Trucks, 13 ½-ton Panel Trucks, 7 Carryall-Suburban Trucks, and 1 Stand-Drive Delivery Truck; and prepared a summary of the Transportation Division Weed Control Program to accompany the A. & B. Request for the procurement of additional equipment.

LABOR ACTIVITIES

Crushed and stockpiled 940 cubic yards of $3/4^n$ to $1/2^n$ crushed rock and 624 cubic yards of $\frac{1}{2}^n$ to 0^n crushed rock.

Expended approximately 700 man-hours in maintaining Area reads which included sanding operations, removal of snow, and drainage. Delivered 550 tons of coal to the 101 Building.

Transportation Division Area forces were engaged in the control and disposal of surplus water from melting snow in 100-B, 100-D, 100-F and 200 West Areas. Dikes were constructed; drainage ditches were excavated and piping installed where required; pumps and tank trucks were employed in the disposal of water from the 108-B Building and other locations where drainage was not possible; soil and gravel was hauled for the backfilling of settled areas.





Transportation Division

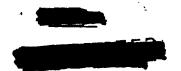
Transportation Division equipment and labor forces were furnished for Projects C-343, C-346, M-718, and Well Drilling Operations.

(Statistical information is attached to the file copies of this report)

By Authority of ENEGRE OPERATIONS OF TICE, NON-TECHNICAL DOTUMENT REVIEW BOARD.

Date: 12-18-57

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PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT

MORIL TO BE SCHEEVILE FOR WATHER WEATHER S PRESENT LINE BEING CHECKLO FOR LEAKS CERTIFIC DIAL OF AUTHOLITIC AND PENCHAG DRDER BEING PLACED FOR HEW DESIGN ¥ REVISED PROJECT IN PREPARATION CERTAIN WORK TO BE SURCOMINACIED CELONS, PROUBE SELING UNDER BILON, PRICE, PRICELLY ASIONS PROPESSING LINEAR MICH. PRICELEY NSTALLATION PREPARATIONS PROGRESSING IELG UP BY HIGHER PRIORITY WORK THO ANEAR COMPLETED - THIRD DEFENDED œ DRE VIETNALLY COPPLETE, JR B. MEA. PUBLICATED UNTIL FISCAL YEAR 1951 ELD UP FOR HIGHER PRIGHLEY HOME KLID UP FOR MIDNER PRIORITY NAV ⋖ DESTUNS IN PREPARATION PROJECT, U. PREPARATION. PROJECT IN PREPARATION 2 PISICAS PROCEESSING ш WORK PROMESSING CHARLES SOCIALISM BORK PRUGRESSING OUR PROPERSIES COMPLETED COMPLETED PERCENT COMPLETE DATE CEREVARY 18 . LEND CONPOSICE ONISO TO TV DISANA 01315 OZ 03583134 = 2-13 × 10-11 10-73 = <u>-</u> ≘' -17 7 Ξ -12 10 OIRECTIVE <u>ē</u> <u>+</u> ≥ ş 7.5 A SOUTE OF TOO TOO 27.71 ۽ ڌ 9-5 ç 5 글 ř ţ 21-61 01-10 2 <u>د</u> 12-14 고 = \$ = 됚 7.7 ī 100 AREA PROJECTS 9-1 2 12-13 ٠ ا Ī <u>.</u> 2 25 . بر ت ا 9 ة = = = Ŧ 51.75 5 2 Ŧ ş ž 3100 ş ĭ 5.73 5 77 TOBROYECT ۲ 5 P-17-10 DI-21-6 는 기 기 7-X-17 (A-41-€ 715.15 9-23-W 7-11-47 Ę 4 STATUS COMPLET √s0₀ OBTAMITED - 00 - 1 35,30 15.00 17,430 (550,000) . 8 (m, v.) (25,000) 300 605.K 240,600 328,000 (100,001) 3. 3. (mu'/8 (day aut ON 000 m.m 712.000 TOBLORA NOIS IN 10 S 3 & C- 197 C-12 C-270 1-73 2 C-358 -321 5 23.3 867 ì, 412-733 17/4 2 3 PUNER Œ. TCH. 1 CF 5 <u>÷</u> ī 5 ¥ œ 0 DISHANILIAG OF EQUIPMENT IN THE DEMINERALIZING AND DE-ARRATING PLANTS ₹ ш 0 LITTLE FROLCT LYLLUPHENI OF FIFRIBLE NORLZONIAL CONTROL F.DOS FRGINGFFING BY INSTALLATION FOR INCIVICUAL PILE ICHE ACCOUNTING z WORK PROGRESS DURING PERIOD DESCRIPTIO FILULMI DIVERSIUMARY OUTEFT (105 - 107 6 . !) REPAINS TO 107 BASIN (HINTETALL PROGNAM ONLY) PILE CLLAKANCE - INNER HOU ROOM WALLS 105807 INSTALL STILL PRUCESS SINTR 105-8 - 107-8 FALIN MMITUNING ANT STORAGE TACILITIES WORK PREVIOUSLY DONE HALLOWHI OF FLEXIBLE WRITCH SAFETY NOS KESTMAINING CLAMPS - FILE SHIELFING P-10 ALLOY PREPARATION FACILITIES 102215 GALVANIZING AND REPLACEMENT INCHESSED SHITLITHS - FRANT MYZEE CATS RETLACTIFIED YOR & WHILES IN 105 BUINDS. THE CONTRACTOR INPRACTOR ADDATIC BIOLDGY LABORATORY ILIGH TANK CONTROL VALVES COAL PETERING FACILITIES RPIKING BARAL BARIAL FARI UNINCOME MEPLACEMENT SINCOGICAL LABORATORY MEDTROM SPECINOMETER P-10 ALLIN (MINKS) P-11 PROJECT P-12 PR0JECT -12 PROVICE 4964 40 OBAIBOBA 507E 1008.0 138581 62-5 PF-CI IDYA! VEF-01 10,44 Ξ 10589 176 ŧ કુ છે. કુ છે. ##C# 9. 10 ē ٤ 'n, 7-71 1-31 ≘ ٤. 4 Ţ **R**! 17.5 ~

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PROJECT ENGINEERING DIVISIONS REPORT STATUS MID-MONTHLY

200 AREA PROJECTS

S ¥ PART IL PROJECT AND REPORT SUBM œ ⋖ SIGNS EXECUTED IN A DIVISIO Σ DESIGNS PROGRESSING BE ING PE-SUBMITTED DESIGNS PROCRESSING MAJECT IS PREPARATION POSTURED BY S. CIVISIA ш MORE MINE SCHOOLS WELL BLING STATUTO LS I DICK FROME SS DICK œ WORK-PERCENT COMPLETE DATE FORMING AS. 1859 OTSIS OF OBSESURE EV. 8'1.18. Ξ 17-71 13-19 10-11 4 11-25 3. 84 ĵ 200 11-22 Ţ 1-20-50 1 10-26 7. <u>...</u> 200 7 10-26-49 13-13 ENGINE ERING ን-12-19 21-19 STATUS -PERCENT COMPLET TSOO O3TAWITED (5,000) (5,000) (5,000) (5,000) (5,000) (150,000) (300,000) (ago 'got') (21,000) 38,700 (250,000) C-337 158,000 00Z 6 C-295 1, 500,000 9,000 3,7 NOISINIO STE TOBLOPA C-326 H-253 5 <u>=</u>; 1111 3 I Ch 5 ¥ EQUIPMENT FOR DISSOLVER OFF GAS FILTRATION (\$337.000 UNIGHALLY AUTHORIZEE) œ 0 PRELIMINARY DESIGNS AND REVILL PARE J ₹ INSTALLATION OF LABORATORY EQT. IN BLDGS. 271 F-8 (INFORML REQUEST) EBLARGING 251 SUBSTATION AND APPITIONAL 15.8 KY PLEDLES 200 E-W. UNDERCROUND GEOLOGICAL & HTOROLOGICAL INVESTIGATION PROCRAM 0 F DESCRIPTION WORK PRUGRESS DURING PERFOD WORK PREVIOUSLY DONE VAPORATION FACILITIES FOR FINST CYCLE MASTE OUCT LEVEL FLOOR COVERING AND SAFETY SHOWERS SILVER HITRATE REACTOR FOR RADIO-TODINE כשבתנו האשתור מנושווטי נפי בבן מתים. PESIGN AND INSTALL FISSION COUNTER PANELLED HOOD IN NEAN OF HOUS & TO 8 MCTCLE CONTAINERS WHEN TO LABORATORY HOT SEMINORES-*36p 40 50 18 031/3034 16 2-14 25.4220TEN 12-23 22: 10 71-11 5-13 221 79 11-12 7-22 27110 7-22 234-5 Ę 18 8-18 222-1 1-16 234-5 8 17.23 27.1 3100 034 16 7. 2-19 ĩ Ŗ ONZ ŝ ğ c

COMBINED TOTAL OF AUTHORIZED GPENDING

PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT

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000 21-9 09	EXPERIMENTAL HEIGHUNGY LABORATORY - BUILDING 3730			·	N#-2-11	11-5	11-5 11-7			-	1-1			PORK PROCAESSING
61 8-14 J13-31N	IPROVE VINITATION - BITGS, 313-314	•	C-330 200, 00C		12-9-49	12-8				2-3	9.4			SCOPE OF PROJECT REDUCED TO INCLUDE ONLY ENGINEERING & DEVILOPHENT NORE AT PRISES
NE 6-2 2	HOLLING HILL (\$60,000 AUTHORIZED 12-13 FOR ENGINEERING) EST. 1014. COST	4	C337 (2,870,00)		5-23-49	5-73	5-23 \$	1-9 12-5	17-13	17-23	12-23			PRILITIONAL TO SINGS & CONSULTANT SHIVING AUTHOR
77 12-73 313	ALINE TUBE HOCK UP TO SHOULME B. C. B F. AUTOMATIC SCREW HACKING INSTALLATION	3	C- J3H 24, 800	000	£-17-47	7.	9 - 16	-1-3	7-13	7-15	2-9			HORE PROGRESSING DESIGNS NEED PENDING FURTHER DECISIONS
10.10 1701	100 AREA BAEGL HOUSE APPELLED. (TALOMENAL REGLEST)	SERV.	14,500		12-11-41	13-14	13-10	12-14 12-31	<u>-</u>	<u>:</u>				WORK HILD UP PINDING FURTHER DECISIONS INCERED IN ADDITIONAL FUNDS
7.2 371	KINDBILLTATION, REPORTING & INCREASED VINITIATION - BLIG. 321	ن ۱۱۵۱.	C-331 227,000	_	J-18-49	3-18	J-22 3-	-	-	3	2	<u>-5-</u>		
11 11-11	SECRECATION OF PLUORITY SECURGE	-	(40,000)											DESIGNS HELD PENDING FURTHER DECISIONS ON WORK TO BE DONE
1 H-77 500	CTEINER STORAGE DOCK	I CH.	(25, 500)											PROJECT IN PREPARATION
00f 67-B	SOLVINI STOWAGE TACTLITIS - BLFG. 3706	5	(10,000)							,				PROJECT IN PREPARATION
00f \$1-6	4001110# 10 BLCs. 3745	3	00° 30° 70°		CH-H-11	-	11-R	17-1	12-19	12-23				READY FOR SUBCONTRACT
8-25 300	BURGAL BROWN EXIENSIBA	*	H-725 4.800.		11-1-19	131	1-1	1	-	17-18	12-11	£1-1		031 110
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PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT

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GENERAL PLANT PROJECTS

WORK PROGRESS DURING PERIOD

WORK PREVIOUSLY DONE

15., 1950

DATE_ILIDALAN

SUB-CONTRACT NELOTIATIONS - PROCEESSING S HILD UP FOR LIGHTA PRIORITY WORK HEED AL FOR BIGHER PRIORITY WHEE NELD UP TOR MIGHER PRICELLY, NORTH ¥ MURR PROUNTSSING PART IV AMAITING ALINURIZATION MORE HELD UP α AWAITING PEC AUTHORIZATION ⋖ ANALLING AFFRUTALL MUM DISICH WORK PROCESSING Σ PRLIECT IN PREFARATION REALT FUR SUBÇUNTRAÇI PORK BEING SCHECLES AWAITING APPROVALS w WORN PROGRESSING PROUNT SSING PRUCHESSING ISIONS SINKITE USIGNS STARTED LISIONS STARTED DAR NOW CELLERIE Lyides, Stabill MISIONS STARTED œ METURE STARTER ORK STANTED 08LU 180 COMPLET anos 1013/3 OZ 035×3134 7 ₹ 1 ج ح Š 5-13 크 2 = ٤ Į 2.5 Ξ Σþ 5.5 큐 چ <u>+</u> 10-3 712 5 Y E Ę : Į. APPROVED A 3-19 ي ل 17-28 ĩ ŧ 2 Į. ī ţ 12 - 28 3 R 몬 -5 Ī į ş 7-7 Ţ <u>.</u> 11-13 7 12-23 <u>}</u> 7 2 ĩ 7 ĭ 12-20 7 Ĕ, **7-11** -52 7 ĩ TOBROA 3 12-19-43 64 - : - 1 ₩-12-51 P-77-49 418-47 7-11-1 P-15-48 F-30-F -3-6 3-7-47 7.7 6-2-PERCENT COMPLET 450₀ OBLAWILSB Man you 16,000 470,500 £ 3 (170,000) 7,00 (C, 73) 3,800 (m, ci) ON 36,000 54,000 47,500 (m,mol 174.000 95,000 (00,717,10 100.000) 8 (350,000) (000 '...) 75.500/ ر. نيد 35.000) (**8** mg) (10,700) 10,000 103LOAQ 378ISNOWS36 NOISINIOS36 96-138 38 613 C-357 1 33 -57. -325 1 **₹** Ē, Ţ 1110 1110 titei. 11101. ¥111. LILLE I. 11161. Hete. SER. tifel. SI ky. LECT. <u>.</u> 1110 titei. 1110 5 <u>:</u> Ę. UC. ¥ LLECINICAL WORR NECESSITATED BY RICHLAND PERPANENT LEVEES (INFORTAL REQUISE) œ 0 KELMAL, SANTIARY AND FIRE PROTECTION FACILITIES - PAINOL PISTOL RANGE ₹ SURGICAL WING AIR CONDITIONING - RADLEC HUSPITAL (INFORMAL REVOLST) (IN UPPAR REQUEST) SALVAGE AND MECOVERS OF TILEFINDE CABLE AND EXCHANGE TUDIFICAL 0 F ADDITION TO BLDG. 707 - AUTOMATIC DIAL TELEPHONE EXCHANGE 115 KY PUNEH LINE 13 RICHLAND PLUS SUBSTATION FACILITIES PRIMAREM FEELING 230 BY AND DISTRIBUTION SUBSTATIONS IDDITIONS TO RICHLAND ELECTRICAL DISTRIBUTION SYSTEM 212375 DESCRIPTION OPITIONAL CAPACITY RICHLAND SEWAGE LIFT STAITON INSTALLATION OF PER SECURITY FENCES - ALL AREAS THE NATER PIPE LINE 284-8 TO RADIEC HUSPITAL ELOCATION OF RICHLAND LINE CHEW MINE GUANTERS 1. 1. OPERATIONAL STREET ON SURVEY INSTRUMENTS ANGHHEMIN, HEACTION HEATING FACILITIES BUDG. 3737 ADDITIONS AND ALTHRATIONS-706 LABORATORY CAINULIC PRUIFCIIUM (INIUMIAL HEQUESI) CENTRAL STORES WAREHOUSE IN 3000 AREA APDITIONAL IFLIPHONI CABLES - RICHLAND SULL INFAIMENT OF POWER LINE PULES RAMSFORMER DIL STORAGE FACILITIES AUDITION TO MITTOROLOGY BLDG. 622 LLCI POME SIRVIG TO HON CONTA RUPHUM STAVICE TO TLOS CONTER MANUE OF TEUROLOGICAL STATIONS TANT IFLIPHONE PROJECT *34b 40 507₆ Car inter 8 900 દ્ 706 A L Ħ <u>=</u> <u>5</u> Ē Ħ Ē ٤ 1 ξ Ē 8 8 Ĕ 8 ş چ ₹ 034 === -16 1-1 = ž 9

THEFT TOTAL OF ACTUARIZED AND PINCING

PROJECT ENGINE, TING DIVISIONS ENGINEERING DESIGN 100 AREA

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E P.	DATE No. 2D	BLDG 9 AREA	* 0 ' La (4.3 % 3 %)	OWGS. ORINGERING REPORT OF MPLETE ISSUED	REMARKS	DIV. RESP.	ESTIMATED COMPLETION DATE
189	-	3	"AS-BUILT" DWGS SINCE 9-1-46		MORK PROGRESSING	1	
2001	۲ -	53	0.E.C. STUDY		EXTENDED STUDY BY STANDING	Jean.	
1074	<u>-</u> 1-2	1580	DESIGN MOISTURE EXTRACTION EQUIPMENT FOR GAS SYSTEM		NOT STARTED	a a	,
1075	12-10	8 00	STUDY AND PECCHANEND ON LONG RANGE WAREHOUSING - 100, 200, AND 300 AREAS		REPORT IN ROUGH DRAFT FORM	MFG.	3-1-50
580	4	\$	STUDY PILE OPERATION WITH ICCE CO2 ATMOSPHERE		DATE IN HANDS OF "P" DIVISION	a.	05-1-4
<u>\$</u>	1036 4- 7	9	STUDY LUBRICATION OF PROCESS TUBES DURING CHARGING		CANCELLED	Q.	
117	5-t3	8 8	CAN OPENER IMPROVEMENTS		REPORT READY TO ISSUE	1504.	23250
123	=	<u>7</u>	TIE LINE - EFFLUENT VENT AND DOMNOOMER	02-1	DWGS ISSUED	۵	3
121	1-30	880	P 10 SHIPPING TUBE NUMBERING		STUDY IN PROGRESS - LARGELY AN	150	2.20.50
82	2-1-50	8	DESIGN GRAPHITE MONITORING PUSH RODS		EQUIPMENT INVESTIGATION NOT STARTED		430-50
131	2-8-50	ICE BDF	PROPOSED ROD GUIDE SYSTEMS		NOT STARTED	٥	4-30-50
79			1.212376				

PROJECT ENGINE ZING DIVISIONS ENGINEERING DESIGN

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15, 1950	ESTIMATED COMPLETIO DATE	12-31-50	·	1-30-50	5-15-50						
FEBRUMIY 15,	TADIV.	. 1		S	ග						<u>.</u>
DATE	REMARKS	ONLY MOST URGENT CORRECTIONS ARE BEING MADE TO DRAWINGS AT PRESENT	POSTPONED BY "S" DIV. 2-7-50	RECOMMENDATION REPORT COMPLETE	DRAWINGS BEING CHANGED						
AREA	DWGS. OR OR ING REPORT TE ISSUED DATE										
200 A	ENGINEERING COMPLETE		-		- 1	- · · · · · · · · · · · · · · · · · · ·		· -			
PPOSPESS CUPING PERIOD	DESCRIPTION	"AS-BUILT" DWGS. SINCE SEPT. 1, 1946	STUDY AND MAKE RECOMMENDATIONS FOR REMOTE CONTROL REGASKETING FACILITIES	PREPARE AN ENGR. REPORT ON THE USE OF A NEW TYPE STEAM JET	CHANGE PRINTS FOR RECOVERY HOOD EVAPORATORS						1212377
*∩RX *ORX		200E#	22178	221	234						
	DATE REC'D	10-28	12-1	9-6	9 -				·		
	NO.	38	2279	25 15	2517					8	'O

PROJECT ENGINEE NG DIVISIONS ENGINEERING DESIGN

COMPLETION ESTIMATED 2-20-50 4-15-50 3-1-50 3-1-50 DATE FEBFUARY 15, 1950 TECH. POWER TECH. DIV. RESPON ۵ WORK POSTPONED UNTIL ALL HOODS HAVE BEEN INSTALLED RECOMMENDATIONS BEING PREPARED RECOMMENDATIONS BEING PREPARED ONLY MOST URGENT CORRECTIONS ARE TO BE MADE TO DRAWINGS AT PRESENT DES IGNS PROGRESSING REMARKS ENGINEERING REPORT COMPLETE ISSUED DWGS. 300 AREA DESIGN AND PREPARE COST ESTIMATE FOR EXHAUST SYSTEM FOR GRAPHITE MACHINING IN ROOM 41A STOKES VACUUM PUMP STUDY HIGH WATER TANK - RIVERLAND STUDY VENTILATION REQUIREMENTS TO PROVIDE 40% HUM IDITY AND 2 MINUTE "AS-BUILT" DRAWINGS SINCE 9-1-46 z 0 1212378 ۵ œ STUDY BACKFIRING WORK PROCHESS DON'S PLANT ပ S W AIR CHANGE ۵ SNS T BLDG B AREA 3706 F25-59 314 VJ0 19-28 3706 8 DATE RECD 9-27 300g 9-1 7, 8 283 28 283 $\underline{\alpha}$ 0

PROJECT ENGINEE ING DIVISIONS ENGINEERING DESIGN

DATE FEBRUARY 15, 1950
PI ANT GENERAL
WORK PROGRESS DURING PERIOD

	ESTIMATED COMPLETION DATE		4-1-50	3-1-50					3-1-50	6-1-50			,			5-1-30	•		
	DIV. RESPON.		TRAN	5 %0		ဟ	PURCH	1	POWER		1	۵	··· •	ELECT	۵.	TRAN.			
DAIG	REMARKS		WORK PROGRESSING AS REQUIRED	WORK PROGRESSING	WORK PROGRESSING AS REQUIRED	COMPLETED	COMPLETED	WORK PROGRESSING AS REQUIRED	WORK PROGRESSING	WORK PROGRESSING	WORK PROGRESSING AS REQUIRED	NOT STARTED	AS REQUIRED	WORK PROGRESSING AS REQUIRED	WORK PROGRESSING AS REQUIRED	AS REQUIRED +			
	DWGS. OR ISSUED DATE					1-20	1-23												
	ENGINEERING COMPLETE	6 8 2 9 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		-															
PROGRESS CONTING TENTOS PREVIOUSLY DONE	DESCRIPTION		SURVEY FOR MAINTENANCE OF ALL RAILROADS INSIDE RESTRICTED AREAS	RAILROADS-REDOX PLANT CIVIL DESIGNS AND SPECIFICATIONS	ARCHITECTURAL STANDARDS	SURVEY OF 292-T STACK	DESIGNS FOR CONVERSION OF DORMITORY TO OFFICE SPACE	AS-BUILTS - 100 AREAS - LAYOUT ONLY	FDISMANTLING OF DEAERATING PLANTS ARCH. AND MECH. DESIGNS AND SPECIFICATIONS ONLY	AS-BUILTS (LAYOUT WORK ONLY)	AS-BUILTS	ROLLING MILL - ARCH. DESIGN ONLY FOR PROJECT C-339	ELECTRICAL AS BUILTS (LAYOUT WORK ONLY	ADDITIONS TO VILLAGE DIST LAYOUT ONLY FOR PROJECT C-341	PROCESS CHARTS - 300 AREA (FOR IND. ENGINEERING GROUP)	DRAFTING FOR TRANSPORTATION CONSOLIDATION STUDY		0150101	
¥OKK F	BLDG. B AREA		ALL	200W	AL	2921	001-	8	10080	ZOUEW	300	314	ALL	8 -	t	100			
	DATE RECD.		4-8	م 4	9-7	9-	1-23	5-26	6-29	1-13		5-17	1-12	<u></u>	12-2	1-20	 	5	
			337	34 IR	53	999	299	100 IC	1034S	766-U	3002L	3062A	105L	106L	3650	1375D	8	/2	

PROJECT ENGINEE NG DIVISIONS
ELECTRICAL DESIGN
PLANT GENERAL

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PLA PERIOD	ANT GENERAL	RAL	FEE DATE	FEBRUARY 15, 1950	5, 1950
RIPTION	ENGINEERING DW COMPLETE ISSL	DWGS. OR ISSUED PRESENT 8	STATUS	DIV.	ESTIMATED COMPLETION DATE
IAP. FAC 241 T-X,		HELD UP FOR ADDITIONAL INFORMATION	ONAL	S	-
- ELECTRICAL SKETCHES		TEMPORARILY POSTPONED	NED	۵	
ANDARDS		WORK PROGRESSING		1	4-1-50
IUMENT SHOP		NOT STARTED		INST.	3-15-50
LDING - ELECTRICAL		WORK PROGRESSING		Ξ	3-15-50
ELECT. DESIGNS ONLY RSION	2	2-1-50 ELECT. DESIGNS COMPLETE NOT STARTED	IPLETE	TECH. STORES	3-15-50
NNK - ELECT. DESIGNS		HELD FOR ADDITIONAL INFORMATION	AL INFORMATION	۵	
AL FAB. AND MELT LAB.		WORK PROGRESSING		тесн.	2-2-50
FILATION - ELECTRICAL		WORK PROGRESSING		тесн.	5-1-50
OR PROJECT C-339 -		NOT STARTED		۵.	5-1-50
HINING EQT ELECTRICAL		NOT STARTED		۵	5-1-50
-BUILT REVISIONS TO DWGS. ATION STUDY		NOT STARTED WORK PROGRESSING		ELECT	2-30-50
		PRELIMINARY WORK	WORK STARTED	ELECT	3-15-50
TRIBUTION LINES AND LE - HANFORD		PRELIMINARY WORK	STARTED	ELECT	3-30-50
ER PLANT - RICHLAND' LIMINARY ENGINEERING)		PRELIMINARY WORK STARTED	STARTED	ELEC	3-1-50
AL ADDITIONS		NOT STARTED		TECH	3-15-50
		NOT STARTED		TECH	3-15-50
2380					

PROJECT ENGINEE NG DIVISIONS INDUSTRIAL ENGINEERING ALL AREAS

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February 17, 1950

RECAP - ALL AREAS PROJECT COSTS

Total	\$10,384,350	323,500	8,053,800	\$18,761,650	\$18,696,650							DEC		30	CHARLES AND	ED
General	\$4,323,700	111,500	2,366,400	\$ 6,801,600	\$4,795,400 \$ 6,763,300	:				•			w	•	·	
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200	\$1,715,450	212,000	1,059,600	\$2,987,050	\$1,538,450	PROJECTS COMPLETED DURING MONTH:	nimal Farm	ement VSR & Guides 105 Bldgs.	P-10 Alloy Preparation Facilities	Rehabilitation, Remodeling & 321 Increased Ventilation - Bldg. 321	Ground Extension	Electrical Work Necessitated by Richland Permanent Levees				
001	\$3,328,600	0	1,480,800	\$4,809,400	\$5, 599, 500	_	Experimental Animal Farm	Replacement VS	P-10 Alloy Pre	Rehabilitation Increased Vent	Burial Ground	Electrical Worl Richland Perman				
	Authorized	Awaiting Approval	Work in Preparation	TOTALS	Last Month's Totals		h81-3	C-323	hEE-3 .	C-331	M-725	11-11				





TECHNICAL DIVISIONS

DECLOSITED

February 1950

SUMMARY

3/10/50

Pile Technology Division

During February the Pile Technology Division became so firmly committed to work on an expanded P-10 program that it was necessary to suspend almost all technical work in support of design of new plutonium producing piles.

The atmosphere of the B Pile was converted to a nominal 100% CO2 during the month.

Fracture tests on the two slugs which caused difficulty during discharge in January showed conclusively that both slugs had been incompletely transformed into the beta phase during canning.

Sample tubes containing Group V material were discharged satisfactorily at 556 MD/ton.

Initial results indicate that the accumulation of abnormally large amounts of pressure drop film (by excluding test slugs from the pile purge) has no major effect on slug corrosion rates.

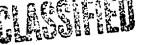
Graphite samples which had been irradiated for 2-1/2 years at low temperature recovered 75% of their original expansion during a two month irradiation at 335°C.

Metallurgical studies show that solution heat treatment of extruded P-10-A alloy for 4 hours at 580°C eliminates much of the second phase; this second phase is believed to be a large contributing factor in the initial gas content of unirradiated slugs.

Separations Technology Division

Production testing in the Separations Plants of slower rates of phosphoric acid addition, the use of single-distilled hydrofluoric acid, and metathesis routine has resulted in favorable gains in yields, essential materials economy, or time cycle advantages. A number of non-routine process operations, occurring inadvertently, were corrected by reworking operations resulting in near-standard final waste losses. Corrections of equipment misalignment in plutonium metal fabrication Pressing operations and careful attention to operational performance have produced a continuous series of satisfactory metal shapes. Improved Coating performance in these operations permitted the attainment of February production commitments, and the over-all promise of attaining the March commitments is extremely good.

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Technical Divisions



HW-17056

In Redox and Metal Waste Recovery process development, forty-one additional solvent extraction column runs were made during the past month, all on TBP process studies. Extensive improvements in TBP packed column performance were separately obtained by the addition of sodium fluosilicate to the feed and by pulsing the solvent feed. A wide range of TBP process conditions have been investigated, establishing considerable flexibility for tailoring flow sheet conditions. Pulse columns of 3 and 8 inches in diameter are being readied for nearly immediate operation and a 16-inch column is being installed for operation within about one month. Several of the submerged pumps on life-testing are continuing to give satisfactory results.

In the research laboratory, continued scouting of methods of decontaminating Bldgs. 234-5 and 224 crib wastes is showing increasing promise. TBP process studies have included work on improved performance of carbonate-washed TBP, comparison of diluents for TBP, settling rates of sludge from metal waste slurries, and continuous recovery of nitric acid. Redex studies have been continued in hexone-nitric acid reaction chemistry, continuous cross-over exidation, and ruthenium tetroxide distillation. Near-quantitative recovery of plutonium from 234-5 slag and crucibles has been obtained in laboratory tests of KOH fusion, acid dissolution, and alkaline precipitation, successively. Additional data have also been obtained on coupling of full-level Redex solutions to the 234 Bldg. process.

In the 234-5 process development laboratory, alternate modifications of the crucible recovery studies described above are also under study. Exploratory studies of skull dissolving agents other than hydriodic acid have uncovered promising results with 16 M nitric acid-0.1 M hydrofluoric acid mixtures. A filter-reactor has been fabricated for testing of direct transfer of filtered plutonium precipitates to hydrofluorination.

The T Plant sand filter efficiencies have remained lower than usual since the special short-cooled dissolving run and possibilities of monitor piping are being investigated. Filtration studies with a special paper produced by the A. D. Little Co. have revealed that this material is apparently as good as CWS Type-6 paper.

Technical Services Division

Effective February 1, an Equipment Design Unit was established in the Engineering Section of the Technical Services Division. This new unit, which is housed in Bldg. 101, is responsible for all laboratory equipment design activities in the Technical Divisions (except for that of Rala, which is continuing in the Analytical Section).

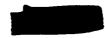
Good progress was made on the Rala Laboratory design, and plans were made for constructing a mock-up analytical line in Bldg. 101. Development of the Remote Control Transport System continued, and effective technical liaison was established with the Lionel Corporation. Arrangements were completed whereby the Instrument Division will study the feasibility of the proposed electronic controls for this RCT System.

Documents HW-16080, "SF Materials Accountability Procedure," and HW-16082, "SF Material Accounting Procedures," were issued during the month. The former details the system of control of such anterials in use in the Analytical





Technical Divisions



Section (both Control and Research), while the latter defines the various samples received by the laboratories, presents the checking limits within which acceptable laboratory results must fall, and gives references to laboratory manuals where method descriptions are detailed.

The first specimen of high density lead glass was received from the Penberthy Instrument Company of Spokane, Wash. This special glass, which is reported to have shielding properties about equivalent to that of steel on a thickness basis, shows excellent promise for use in direct viewing windows of laboratory caves and cubicles.

Architectural, foundation and structural steel drawings for the Redox Analytical and Plant Assistance Laboratory, Building 222-S, were approved and released to the field construction forces. Preparation for temporary construction buildings and site clearing was in progress.

With the recent transfer of the Engineering Files from the Design and Construction Divisions to the Project Engineering Division, arrangements were made to return the handling of all classified material formerly issued and controlled by these Engineering Files to the 700 Area Classified Files.

ABG: dg

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March 10, 1950

PILE TECHNOLOGY DIVISION

FEBRUARY, 1950

VISITORS AND BUSINESS TRIPS

- G. M. Adamson, Oak Ridge National Laboratory, was here February 13 and 14, 1950 for inspection and consultation on the special request program.
- L. W. Fromm, Argonne National Laboratory, Chicago, Ill., arrived February 13 for consultation on ANL-140. He will remain indefinitely as a resident representative on all ANL requests.
- G. A. Anderson, O. W. Childs, M. D. Fitzsimmons, F. L. Kleimola, and R. A. Stella, Argonne National Laboratory, arrived February 20, 1950 for a visit of about one month for consultation on ANL 140.
- R. A. Koehler and D. H. Marquis, General Engineering and Consulting Laboratory, Schenectady, N. Y. were here February 21 24 for P-10 consultation.
- Z. D. Sheldon, Knolls Atomic Power Laboratory, Schenectady, N. Y., was here February 20 \cdot 24 for P-10 consultation.
- J. P. Howe, Knolls Atomic Power Laboratory, was here February 23 and 24 for metallurgical consultation.

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R. K. Winkleblack, Argonne Mational Laboratory, Chicago, Ill., was here February 23 and 24 to discuss the special request program.

William Blinder, Knolls Atomic Power Laboratory, Schenectady, N. Y., was here February 24 through March 3, 1950, to make experimental measurements on irradiated material.

Disiness trips of the Pile Technology Division personnel during February were as follows:

- P. F. Gast visited Knolls Atomic Power Laboratory February 6, 7, and 9 for discussion of the P-10 studies and visited the General Engineering and Consulting Laboratory February 9 for consultation on 234-5. He visited the A. E. C. in Washington, D. C. February 8 for discussion of the P-10 program.
- A. A. Johnson and M. W. Carbon visited Knolls Atomic Power Laboratory February 5 10 for discussions on P-10 studies.
- E. P. Warekois visited Knolls Atomic Power Laboratory February 6 · 10 for graphite consultation.
- W. T. Kattner visited Simonds Saw & Steel Co., Lockport, N. Y. February 13 15 for observation of special fabrication.
- F. E. Kruesi visited Oak Ridge National Laboratory February 13 17 for consultation on P-11 problems.

ORGANIZATION AND PERSONNEL

January	February
40	40
31	35
38	32
13	17
3 125	<u>3</u> 127
	40 31 38 13 3

During the month an engineer was hired for the Engineering Section and a laboratory assistant was hired for the Physics Section.

Three laboratory assistants transferred from the Technical Services Division, one for the P-10 project and two for the Engineering Section.



HW-17056

Pile Technology Division

Two draftsmen and a designer transferred from the Metallurgy Section to the Technical Services Division. A metallurgist and two technical workers transferred from the Metallurgy Section to the F-10 project.

An engineer in the Physics Section transferred to P-10 and an engineer in P-10 transferred to the Engineering Section to work on the extraction development program.

A chemist was loaned for half-time from Separations Technology Division to the Engineering Section and an engineer from Project Engineering was loaned full-time to the Engineering Section for extraction development work, but they are not included in the personnel figures.

A technical graduate in the Metallurgy Section was transferred as a chemist from the weekly to monthly payroll.

PHYSICS

Conversion of a Pile to P 10 Production

Authorization was received from the Atomic Energy Commission to proceed with plans for loading 200 kilos of U-235 in the form of uranium aluminum alloy slugs into E Pile. Plutonium production equivalent to 400 central tubes would be sacrificed. This program has been labeled the H-10 project.

The actual loading will be made in the central portion of 500 tubes so as to use the enriched uranium more efficiently. Feed and fuel slugs will be loaded alternately and the ends of each tube will be loaded with natural uranium.

The burnup

of U-235 will be 45 kilos annually. The present vertical rods will provide adequate safety control. Operating control will not be a problem.

Experiments performed in the Test Pile at month-end showed good agreement between predicted and observed reactivity effects and neutron flux distributions, thus increasing confidence in the methods used in making the calculations.

Critical Mass of Plutonium Solutions

The proposed operating procedures and the experimental facilities for this project were reviewed by a group of consultants to the Atomic Energy Commission. In general the committee believed that the facilities were satisfactory from a nuclear safety standpoint, but recommended some changes. With one exception these changes will be made without difficulty. The procurement of a stainless steel, solenoid operated, diaphragm type valve may introduce some delay in carrying out the remaining recommendation.

WITH DELETIONS





Tests were made during the month to determine the workshility of the plutonium solution handling facilities. It was found that flow rates were unsatisfactory and that some reworking of the piping system would be necessary. This work will cause a delay of about 10 days in the completion date and it is expected that the solenoid valve can be installed during this work.

Coating of surfaces subject to contamination has been carried out with G. E. cocoon coating. Results have been highly satisfactory.

A preliminary acceptance inspection was made of the experimental site on February 27. With the exception of the piping mentioned above, required changes were minor in nature.

Exponential Experiments

Work on this project is being postponed since the personnel will be needed in experimental work for the increased P-10 production program. Standardization of foils and counters for use on the H-10 project is in progress. An exponential pile with the present Hanford lattice will be constructed to be available for neutron flux distribution measurements for the H-10 project. It will also be available for use when work on the P-12 project is resumed.

Pile Physics Work

Increase of the atmosphere of the B Pile to a nominal 100% carbon dioxide produced a reactivity gain in agreement with expectation. Reactivity coefficient tests performed at H Pile, D Pile, and F Pile also gave results in line with previous trends. The graphite coefficient at the H Pile is increasing rapidly, as was observed at the other piles when they were young.

Special Request Program

One hundred and ninety-three P-10-A slugs and four other special request pieces were discharged from the piles during the month, while one hundred thirty-six P-10-A slugs and six other special requests were being charged. There are seven additional special requests on hand awaiting irradiation.

A revision to the receptacle slug design which permits safer and easier opening of this type sample has been proposed, and is being tested. Preliminary results are satisfactory, so that prospective users are being advised of the probable change.

Of ten rubber samples exposed in the E test hole facility at F Pile, a boron-free, natural rubber sample showed the least irradiation effect. A natural rubber sample containing traces of boron survived an exposure of 50% of the boron free sample before breaking, while synthetic and silicone rubber samples broke after much shorter exposures.





Installation of auxiliary equipment at the E hole facility has doubled the allowable working time there and thus enabled more efficient use of available manpower.

Miscellaneous

A test hole arrangement allowing a beam of neutrons to emerge for neutron spectrometer work has been sketched and transmitted to Project Engineering.

Detailed calculations are in progress on the amounts of U^{236} , Np_{237}^{236} , Pu^{236} , Am^{241} , and Cm^{242} in irradiated metal to answer various requests from the A.E.C.

Two theoretical reports were issued: "Effect of Temperature on the Reactivity Absorbed by Xenon", (HW-16047); and "Slowing Down Density in an Infinite Square Lattice of Line Sources", (HW-15933).

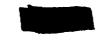
Reactivity

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

	B Pile	D Pile	F Pile	H Pile
In rods	82 ih	80 ih	71 ih	137 ih
In xenon poison	458	481	547	590
In Special Requests				
- P-10	423	392	267	120
Materials Testing Program	15	13	2	0
Other	25	47	13	0
In lead-cadmium columns	0	0	0	107
In bismuth	113	109	116	0
In plant assistance	0	2 9	0	5
In dummy columns	0	14	27	0
In over all coefficient	-240	-240	<u>260</u>	<u>-99</u>
Total cold, clean reactivity	601	915	783	910

The B Pile gained 14 inhours, the D Pile 10 inhours, and the H Pile 69 inhours. The large loss at F Pile is partly due to uncertainty in the actual effectiveness of poisoning material discharged during the month. The F Pile had an apparent loss of 69 inhours, of which 30 inhours were caused by large discharges of irradiated metal from the central zone, while the remainder is attributed to uncertainty in the actual effectiveness of poisoning material discharged during the month.







ENG INTERING

Slug Inspection

Measurements obtained from two tubes of metal discharged at 555 MD/ton under Production Test No. 105-275-P showed only a slight increase in deformations found in similar metal discharged at lower exposures.

DB Van Stone Flange Inspection

Inspections made over a five month period following the DR pile hydrostatic tests have shown that the corrosion which occurred in the stagnant water immediately following the tests was arrested by removal of all water from the tubes.

Vertical Thimble Inspection

A total of 44 VSR thimbles was inspected concurrent with pressure testing. The five thimbles that appeared to be in the poorest condition were found to leak. The corrosion in six other thimbles appeared to be serious enough to warrant replacement in the near future.

Pile Control

Testing is in progress to determine the effectiveness of an alternate third safety device in which neutron absorbing balls are added through a fluted step plug. The method permits the use of the present safety rods with minor alterations but requires substitution of a fluted step plug for the present step plug and rod guide. The tests and preliminary calculations indicate that this 3 % control will reach about 75% of maximum holding power only two seconds after the system is actuated. Demonstration tests have been completed showing that an industrial type vacuum cleaner can remove the control balls from a 40 foot deep thimble hole.

Effect of Pressure Drop Film on Corrosion - P. T. No. 105-249-P

Corrosion rates of three tubes discharged under this test showed that the buildup of an abnormally high pressure drop film did not increase the slug corrosion rates appreciably. One tube in the 240 orifice zone was not purged for 7 months and had a maximum pressure drop increase of 40 psi; another tube in the 140 zone had a maximum pressure drop increase of 90 psi. These studies are continuing.

Graphite Expansion

The H Pile has been operated for one month at 330 MW. All data indicate that this power level is safe and that higher levels are probably feasible. The heat output from the maximum tube will limit the pile power output to about 365 MW unless a more uniform heat distribution can be maintained. The Top





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Biological Shield has warped or settled down in the center a maximum of 0.2 inches since startup. The Far Side Biological Shield has moved out about 0.1 inches at the center and 0.15 inches at the middle of the upper edge. No movements of the End Shields have been detected. The carbon monoxide in the pile gas has increased slowly to $6\ 1/2\ \%$. The average maximum graphite temperature at 330 MW is about 245° C.

The carbon dioxide in the B Pile atmosphere was increased to a nominal 100 % during the month. The maximum graphite temperature is about 300° C at 100 % carbon dioxide. The increase in graphite temperature caused by changing from 50 % to 100 % carbon dioxide is somewhat more than had been estimated.

Routine motion measurements at the B, D, and F Piles indicate a continued slight contraction at the center of the piles and an expansion of the cooler graphite near the edges. Work on improved instruments for measuring graphite expansion was continued during the month.

Project C-338, which consists of installation of "B, D, and F" graphite in the nine tube mock-up, was completed on February 24. This mock-up is now available for studies of the effects of expansion on the pile structure and for development of corrective measures.

Graphite Monitoring

The total stored energy of graphite mined from the bore of a process tube block was 518 cal/gm after an exposure of 3300 MD/CT. This value is equivalent to that which might be obtained from a 2900 MD/CT test hole exposure, although the flux in the bore position is greater by a factor of about 1.5. The relatively low rate of energy storage is apparently the result of a higher temperature in the bore position compared to the test hole position in which samples are exposed at 30° C.

A previous value of 560 cal/gm was reported for a bore sample after 2500 MD/CT. Although the graphite in the bore has continued to accumulate stored energy with increasing exposure, these data and previous data from mined samples indicate that the rate of damage has been reduced considerably during the last 1 1/2 years, probably as a result of the higher temperatures maintained in the bore position by the use of carbon dioxide in the pile gas. The 610 cal/gm value was obtained from D Pile after more than one year of operation at 40 % carbon dioxide while the 560 cal/gm value was obtained when F Pile had just been raised to 40 % carbon dioxide.

Length and thermal conductivity measurements on graphite previously damaged at low temperatures ($<30^{\circ}$ C) and irradiated in the pile at a nominal 335° C show that nuclear annealing occurs at an accelerated rate compared to that previously determined at about 250° C. During a 140 MD/CT exposure (about 50 calendar days) about 75% of the original physical expansion was recovered for samples having previous low temperature exposures as long as 2 1/2 years. The large temperature dependence of the rate of nuclear annealing is of prime importance in both practical and theoretical studies.



HW-17056

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Pile Technology Division

DR Water Plant

An investigation of the advisability of increasing the capacity of the DR water plant in anticipation of converting this pile to P-10 production indicated that a saving of 60 Kg of fuel material required in the pile would probably result if the water plant capacity were increased from 36,000 to 42,000 gpm.

Heat Transfer

Continuation of pressure drop-flow rate measurements of water being boiled while flowing through a small diameter tube have resulted in two tube burnouts when attempts were made to find a point at which a fixed pressure could be applied to the tube and a flow rate maintained while boiling occurred.

Materials Testing Program

Part of the Navy fuel element test rig (ANL-140) has been received and is being installed. An operating crew is being trained. Details are presented in Document No. HW-17189.

P-10 Project

A total of 175 slugs was extracted on three operating lines. The fourth line was used for experimental process development work. One technical man and two operators have been transferred to P-10-A to speed slug fabrication for the H-10 program.

Design work on the "cold" experimental facilities to be installed in the second floor of 100-B building is essentially complete. At month's end the removal of chemical addition equipment was underway.

Knolls Atomic Power Laboratory has initiated experimental work to investigate new extraction processes. The General Engineering and Consulting Laboratory is proceeding with work on design of a metal extraction line.

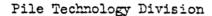
P-10 A Slug Manufacture

Fifteen acceptable billets were cast during the month, and 664 slugs were machined and delivered to 300 Area P Division for welding.

Only one billet tested for alloy composition fell out of the specified range of 3.2 to 3.7 %.

P-10 extraction and slug preparation are scheduled for 6 day per week operation starting in March, 1950. Additional shifts for billet casting will be added to the operation as soon as personnel case obtained and trained.

WITH DELETIONS



METALLURGY

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Uranium Billet Casting

DECLASSIFIED

A group of 164 uranium billets (previously reported erroneously as 231) for Production Test No. 314-59-M and cast at Hanford under furnace pressures ranging from 25 to 3000 microns was rolled at Lockport on February 14 and 15 under the observation of a representative of the Metallurgy Section. No increase in pyrophoric tendencies appeared to result from casting in the higher pressure ranges. However, it was observed that billets made from unpickled chips showed a much greater tendency to tear during rolling than those made from pickled chips. The effect of furnace pressure on over-all yield remains to be evaluated.

The practice of casting 500 lb. charges in the uranium melt plant, instituted about the middle of January, has not resulted in the expected yield improvement. This has been attributed partially to failure to increase the heating time of the charge in proportion to the increased mass. Heating time has now been raised from 2 hours to 2 hours and 20 minutes, but results have not yet been evaluated. Present indications are that the greatest improvement in yield may be expected to result from improved removal of oxide from the scrap comprising the furnace charge. It has been observed that pickled chips, as normally delivered to the furnaces for charging, are often badly tarnished. Efforts are being directed toward the improvement of pickle rinsing techniques, and toward expediting the transit of pickled chips to the furnaces in order to reduce oxide formation.

The 10 tons of uranium rods rolled at Lockport in January, using a lead preheating bath, gave a machining yield of 70.7%, which is about 5% above the average for gas furnace preheated material.

Continued efforts to develop a reliable method for quantitatively determining the uranium content of air filter sample papers have been unsuccessful. The evaluation of the various filter media for the crucible burnout station filter mockup depends upon the successful development of such a method.

Uranium Rolling

Battelle has completed all of the experimental rolling work requested by Hanford and is preparing a report giving the final data. Included in this report will be data on the effect of speed on the deformation strength of uranium at 300 and 600°C, temperature rise in rolling at 300 and 600°C, and deformation strengths obtained in rolling uranium at 250°C. A summary of these data was obtained by phone. In the first 5 to 7 passes, the temperature rise per pass was 6 to 12°C at 600°C and 24 to 53°C at 300°C. The deformation strength of cast metal rolled at 250°C is 12 to 21 per cent higher than at 300°C. Increasing the rolling speed from 65 to 125 feet per minute had little effect on the deformation strength at 600°C, and an increase from 65 to 85 feet per minute had little effect on the deformation strength at 300°C.





HW-17056

Pile Technology Division

Document No. HW-15959 was issued during the month, presenting additional data received from Battelle since Document No. HW-15750 was issued.

Some of the X-ray data concerned with the variation in orientation around the periphery of production rod have been inconsistent and a check is being made to determine the cause of this inconsistency. In relation to the method used for determining orientation, the possibility of using an aluminum diffraction line rather than the (lll) uranium line as the standard for intensity calculations is being investigated.

Uranium Slug Canning

Additional slugs canned by the quad-dip process using agitation conditions similar to those used in the tests reported in January were examined for completeness of transformation. This program involved dipping approximately 100 slugs under ten different time-temperature conditions. These data together with the January data fix the time-temperature boundary for transformation in the temperature range

. Additional data are still needed to fix the boundary above

for the present agitation conditions; however, the boundary above

is known approximately from previous data in which slightly different agitation conditions were used.

The design of devices to insure that all slugs undergoing processing shall be subjected to the specified canning conditions is essentially complete.

A temperature survey taken in an idle bronze pot operating at showed a 13° higher temperature in the 2-1/2 inch sludge layer at the bottom than in the liquid metal above, while the thermocouple placed against the bottom of the crucible indicated a temperature 22° higher than the bath. The liquid bronze appeared to be of fairly uniform temperature, although the flux layer on top was 112° C colder than the molten bronze.

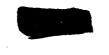
Sludge samples obtained from treatment of chip recovery waste solutions with calcium chloride are being analyzed for comparison with samples previously obtained from calcium nitrate treatment. The latter treatment has with one exception, furnished sludge meeting Hanford Works and Mallinckrodt process specifications.

Dilatometry

In the nominal 0.1 and 1.0 atomic per cent chromium alloys, a break in the dilatometric curves indicating a possible phase transformation was noted at 420.436° C on heating the "as rolled" samples. The normal alpha to beta transformation was present at 660° C. Except for the possible additional transformation, the chromium alloys, similar to most of the other alloys, had a less than random alpha coefficient on cooling from the beta transformation.







DECLASSIFIED 17056

Pile Technology Division

Runs were made on longitudinal and transverse alpha rolled, cycled gamma extruded, cycled chill cast, and several other alloy specimens, but the curves have not been analyzed.

Radio-Metallurgy

On February 7 and 8 two class 4 and two class 5 alpha rolled, triple dipped uranium slugs were safely fractured in the storage basin of the 105 F building. The fractured surfaces of the class 4 and 5 material that had been canned in July and October 1940, respectively, and had caused discharging difficulty, were examined and compared with normally discharged slugs from the same tubes and from the same classification.

Observation of the fractured surfaces of the bowed pieces showed that they were incompletely transformed into the beta phase. The transformation had penetrated about 1/2 inch on one side only of the class 5 slug. This maximum depth of penetration decreased uniformly on both sides of the maximum to less than 1/16 inch in slightly more than one half the circumference. The fractured surface of the class 4 slug showed that the transformation had penetrated about 1/4 inch similarly to the class 5 slug except that this penetration was of approximately the same depth for greater than one half the circumference before starting to decrease to less than 1/16 inch penetration. It was estimated that about 80 % of the circumference indicated some penetration. In both observations it was noted that the concave side of the bow occurred on the side that had the maximum depth of phase transformation.

Observation of the fractured surfaces of the normally discharged slugs of the same categories revealed them to be completely transformed.

In fracturing these pieces it was noted that the irradiated pieces fractured with less deflection than the unirradiated slugs. This effect had no definite measure since it was related to the number of strokes of the hydraulic jack that was necessary to cause the fracture, however, it does appear to substantiate the previously observed increase in hardness due to irradiation.

The fractured surfaces of irradiated slugs were photographed at approximately twelve feet using the telephoto lens. The image obtained by this method was too small to show the partially transformed areas. These fractures were rephotographed using the viewer in the viewing pit. The pictures obtained by this method show lack of detail but definitely record the transformed and untransformed areas. A lack of good focus (inherent in this method) and/or vibration of the camera during the exposure (30 seconds to 2 minutes) are responsible for the lack of definition.

The equipment used in making these fractures was removed from the 105-F basin and installed in the 111 B building where it is being modified to permit shielded operation in air. Comparisons with other types of metal will be made as soon as possible.



HN-17056



Pile Technology Division

The proposed use of leaded glass as an optical means for making shielded observations is being substantiated as practical by the Penberthy Instrument Company of Spokane, Washington. Leaded glasses with densities up to 6.3 g/cc have been received that have excellent transparency through 1-1/2 inch and the properties of strain relieving, thermal expansion and gamma ray attenuation are similar to steel. It is claimed that plug size (10-1/2" x 6-1/4" D) leaded glass can be cast as one unit and if so, the optical problem in cell design will be greatly simplified.

P-10 Alloys

Considerable time was spent in developing a satisfactory metallographic technique for P-10-A alloy specimens. Electrolytic polishing and etching was attempted and gave good results insofar as grain delineation was concerned; however, this method was of doubtful value for studying second phase and inclusions. Solution heat treatment of the "as extruded" P-10-A alloy for 4 hours at 580° C eliminated much of the second phase, but some of the large particles ranging up to 25-30 microns in size remained even after a 24 hour heat treatment. X-ray diffraction data confirmed the presence of a second phase in the "as extruded" alloy. This phase was found to have a diamond cubic structure rather than a body-centered cubic structure as reported in the literature.

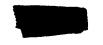
Plans have been made to install a gas analysis line and a vacuum annealing furnace for use in the P-10-A alloy development work.

A four-inch long cast R-52 alloy slug containing 5.2 per cent natural uranium in aluminum was examined for soundness and distribution of the second phase. The grain size as observed in a macro-etched longitudinal section was large, but the metal was sound except for a small amount of pinhole porosity. Chemical analyses indicated that the alloy concentration did not vary along the exis of the slug. Metallographically, the second phase was observed to be present as lamella in a eutectic-like structure around and within the aluminum grains.

To emplore the possibilities of using the 300 Area frost-test equipment in determining the bond quality of R-52 type canned slugs, seven during 2S aluminum slugs were canned with intentional effort to produce voids and unwet areas in the bond. Considerable difficulty was experienced in producing typical unbonded areas in the aluminum slugs. Only one of the slugs appears to have a typical unbonded area.

A brush with Ta-W bristles has been designed to replace the steel wool heretofore used in promoting wetting of R-52 slugs. If successful, this device may eliminate one canning operator. Proliminary studies indicate that the Ta-W alloy is quite resistant to attack by molten Al-Si and that it maintains its elasticity at canning bath temperature better than any material heretofore investigated.





DECLASSIFIEDS

Pile Technology Division

Corrosion

The special stellite test specimens which included stellite Nos. 1, 6, 5-2A, 12, and 21, welded to austenitic stainless steel, were exposed to Redox streams IAS, IAF, and IIAF in dynamic tests and to IAX in static tests. After a three week exposure period no significant corrosion effects were detected. The tests were run at room temperatures. Several of these test specimens were then exposed at boiling temperatures to IAF, IAS, and 60 % HNO3. All types showed varying degrees of tarnishing in the IAF and IAS tests but appeared to resist corrosion. All showed considerable corrosion in the 50 % HNO3 test.

The Pyle National Company phenolic jackets were tested in nitric acid, IAX, and Hexone atmospheres for seven days and found to be acceptable for service currently enticipated.

The corrosion testing of non-irradiated uranium in 100-B process water, Stoddard solvent, and Calol environments was begun in support of the Radio-Metallurgy program.

Miscellaneous

Following an unsuccessful attempt on February 17 to gamma extrude some 1-1/2", 2", and 3" uranium rods from standard sized billets, it was recommended that the extrusion die orifices be lapped smooth and brightly burnished with graphite powder, and that the dies be preheated with a torch immediately prior to beginning the extrusion. This procedure was followed in a second extrusion attempt on February 24, with generally good results. Ten rods of each of the three diameters were successfully extruded with rough surfaces being produced in only a few cases.

The following pieces were processed and/or disposed of under the Special Request program:

529 six-inch pieces myrnalloy (ORML-105)

l piece UCRL-117

5 pieces ANL-147

128 pieces R-13-5

51 pieces R-52 type experimental slugs

3 pieces UCRL-118

6 pieces ORML-126

2 pieces ORIL 127

After 3200 hours, the creep rate for the 2S specimen loaded to 60 psi at 450° C, was 0.000004 per cent per hour and its total deformation was 0.304 per cent. Four more tests required to determine design curves at 400 and 450° C are in progress.





DECLASSIFIED 7056

Pile Technology Division

The new steel cabinet for storage of SF material held by the Research and Development Group of the Metallurgy Section was set up and the proposed piece accounting system will be put into effect as soon as the rearrangement of the material and change-over of the records can be completed.

It is estimated that Building 3730 is now El per cent complete. Except for some electrical wiring and piping, no work was done on the building during the past month. Sheet metal work required for the exhaust equipment has been held up by higher priority jobs.

DIVENTIONS

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

Signed

W. K. Woods Division Head

WK Woods:bb



March 10, 1950

SEPARATIONS TECHNOLOGY DIVISION

FEBRUARY, 1950 MONTELY REPORT

VISITORS AND BUSINESS TRIPS

- C. V. Ellison and T. C. Runion of the Oak Ridge National Laboratory visited this site on February 15 and 16 for discussions on the Metal Recovery Program.
- A. Turkevich of the Argonne National Laboratory visited here on February 16 and 17 for Krypton 85 discussions.
- J. Marsden, Knolls Atomic Fower Lab., visited the Hanford Works from Feb. 27 through March 3 for Redox and Metal Recovery Program meetings.
- G. T. Seaborg of the Radiation Laboratory, University of Calif., visited this site on February 28 and March 1 for discussions of the separations program.
- B. W. Farnes and R. W. Martig of Farnes & Martig, Inc., Portland, Oregon, visited this site for inspection of the Fischer & Porter pumps.
- J. B. Work visited the Los Alamos Scientific Laboratory from February 8 through 10 for 234-5 consultations.

ORGANIZATION AND PERSONNEL

Personnel totals in the Separations Technology Division are as follows:

	January	February
Administration	2	2
Special Assignment	. 3	2
Process Section	24	26
Development Section	90	91
Research Section	<u>35</u>	32
	153	153



Separations Technology Division



Process Section: One Steno-Typist C returned from a leave of absence and one Steno-Typist D was transferred from the Employee and Community Relations Division.

Development Section: One Chemical Engineer and one Chemical Trainee returned from their leaves of absence, and another Chemical Trainee was granted a leave of absence due to illness.

Research Section: A Chemist, a Chemical Engineer, and a Draftsman were transferred to the Technical Services Division. Two Technical Graduates were transferred to the monthly roll as Chemists.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Study of slow phosphoric acid addition during the second cycle by-product precipitation has been continued. Although losses at B Plant continue to be somewhat erratic, data at both plants indicate that losses with the phosphoric acid added at two pounds per minute may be significantly lower than those with the addition at five pounds per minute.

Tests at B Plant indicated that the caustic coating waste contained approximately 0.1% of the product in an average run while the acid flush following contained 0.3 to 0.4% of an average run.

The first cycle product precipitation waste assay of Run B-10-02-B-4 was 91% of 6-3MR. Records indicated that ammonium silicofluoride had possibly been added instead of bismuth nitrate for the precipitation. Reworking the waste solution resulted in an effluent assay of 4%. This was reworked a second time with a total loss of 0.41%. The run following through the section, Run B-10-02-B-6, resulted in a waste assay of 0.7%. This was reworked to 0.31% and discarded.

The extraction waste assay of Run B-10-02-D-21 was 10% of 6-3MR. It was indicated that this may have been the result of an improper skimmer setting during cake solution. Routine reworking reduced the loss to 1.25%.

Concentration Buildings

Erratic metathesis losses at both plants prevented final evaluation of Production Test 224-T-13, aimed at decreasing the run time cycle. A return to standard conditions, however, resulted in essentially no change in performance. At month end, losses were sufficiently stable at B Flant to allow a return to Production Test conditions.

Approximately 63% of Run B-10-01-D-24 was inadvertently skimmed from the metathesis centrifuge into the catch tank during the cake dissolution of a run at B Plant. The product was recovered with a total metathesis loss of 0.35% for the run. Approximately 47% of the original run was recycled back to the Concentration Building when the recovered product was processed in the Isolation Building. The original portion of the run resulted in an amount of recycle which was comparable to recent averages.

HW-17056

DECLASSIFIED WITH DELETIONS

Separations Technology Division

Nitric acid flushes of the bismuth phosphate by-product precipitator tanks at B and T Plants lowered the background activity 50% in both cases. Losses of 0.14% and 0.09% of a standard run occurred at B and T Plants, respectively, during the flushes.

The oxidation period of the lanthanum fluoride by-product precipitation rework was decreased to 30 minutes from 60 minutes. No significant change in losses has occurred.

Penn Salt single-distilled hydrofluoric acid of improved specifications has been tested at T Plant under Production Test 224-T-12. No significant difference in plant performance was noted comparing results of runs using this acid with those of runs using a blend of 22% double-distilled acid and 78% Harshaw Specification 102 single-distilled acid.

Hydrofluoric acid was inadvertently added to the lanthanum fluoride by-product precipitator tank prior to the oxidation of Run T-10-02-F-15 at T Plant. This resulted in a waste assay of 2.4%. Reworking resulted in a total loss of approximately 0.4%.

Isolation Building

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Filter aid, accumulated from cell filter clean-outs, is being processed for product recovery. Processing has not yet been completed.

The second cycle product peroxide precipitate of Run T-10-01-F-36 was inadvertently washed with 60% nitric acid instead of 6% nitric acid following the first of three standard washings. Since the precipitate was dissolved, the run was processed to AT with a resultant purity of 95%. The run was sent through a third peroxide cycle without sulfate addition, resulting in a purity of 99.6%. Approximately 5% of the run was recycled to the Concentration Building from the additional purification cycle.

The dip tube in the still, S-1, of Cell 4, used to transfer runs to AT, was found to be corroded and was replaced following Run B-10-01-D-25.

Purification and Fabrication Building

Attempts to correlate oxalate weights (after drying at 250°C) and oxide weights in the Dry Chemistry process have been made. The correlation is poor. The theoretical weight ratio of $PuO_2/Pu_2(C_2O_4)_3$ is 0.7304. The ratios obtained experimentally on 8 batches were between 0.5005 and 0.6034. A poor correlation between the oxalate weight (dried at 130°C) and the oxide weight was also reported for January. Attempts to establish oxalate weights for process control and accountability purposes will be discontinued.

The base on which the press can rests during Pressing was leveled early in February. Fieces pressed prior to this leveling were out of level with respect to the top of the die by as much as 0.012 inches. The maximum variation after leveling has been 0.005 inches. Dimensions for the new die cavity have been recommended. The die diameter is to be





Separations Technology Division

The c/q summation for light element impurities reported during the month has averaged 0.35.

The Coating operation improved during the month. Care in cleaning pieces to correct dimensions prior to coating plus better coating results have resulted in encouraging production results at month's end.

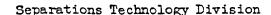
REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Solvent Extraction Studies

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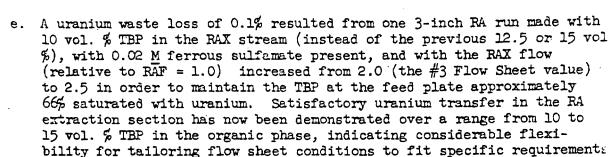
Continuing with the development of the TBP Metal Waste Recovery process, a total of 41 solvent extraction studies were completed during February, using a 3-inch diameter column packed with 1/2-inch Raschig rings and an 8-inch diameter column packed with 1/2-inch and 1-inch Raschig rings. New information from these RA Simple Extraction Column and RC Column runs is summarized below:

- 1. Studies made using a 3-inch glass column packed with 21 feet of 1/2-inch stainless steel Raschig rings as a simple RA extraction section have resulted in the following information:
 - a. At TBF-HW #3 Flow Sheet conditions (nominal 6 M nitrate ion salting strength), the use of 0.004 M sodium fluosilicate in the RAFS was even more beneficial to uranium extraction than addition of 0.02 to 0.05 M ferrous sulfamate reported last month. Whereas ferrous sulfamate resulted in a four-fold reduction in uranium waste loss, the sodium fluosilicate reduced the waste loss by approximately ten-fold and did not affect the complete flooding capacity significantly (2200 ± 200 gal./(hr.)(sq.ft.), sum of both phases).
 - b. These beneficial effects of ferrous sulfamate and sodium fluosilicate on uranium extraction at 6 M nitrate ion concentration were not realized with a low-acid flow sheet (nominal 3.6 M nitrate ion concentration), uranium waste losses being approximately 3% with or without additives present (i.e., waste losses 10- to 100-fold higher than for TBP-HW #3 Flow Sheet using 6 M nitrate ion salting strength).
 - c. Pulsing the RA packed column significantly improved extraction performance at low-acid flow sheet conditions (nominal 3.6 M nitrate ion, 1/2-inch Raschig rings, pulsing frequency 50 cycles per minute, pulsing amplitude 1/2-inch movement in the column). Uranium waste losses were reduced from approximately 3% without pulsing to 0.3% or lower with pulsing, corresponding H.T.U. values being reduced from approximately 4 feet to 2.5 feet. The flooding capacity with pulsing was greater than 2500 gal./(hr.)(sq.ft.), sum of both phases, compared to approximately 2300 without pulsing.
 - d. Since essentially all TBP solvent extraction studies made to date by the Development Section have been with simulated total waste (sludge plus supermate), one 3-inch RA Column run was made with simulated supermate feed, and two more runs were made with two widely different simulated sludge feeds (RNFS containing 0.2 M and 0.05 M phosphate ion concentrations). Performance of both sludge runs was normal with uranium waste losses of less than 0.1%. Since the uranium waste loss for the supermate run was 8%, this run will be repeated with slightly altered flow sheet conditions.



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- 2. Using the above 3-inch glass column packed with 21 feet of 1/2-inch stainless steel Raschig rings as an RC Column resulted in the following new information:
 - a. In contrast to the beneficial effect of pulsing the packed RA extraction section, pulsing the packed RC Column (50 cycles per minute, 1/2-inch amplitude) was neither significantly helpful nor harmful to uranium transfer but decreased the flooding capacity from approximatel, 1300 gal./(hr.)(sq.ft.) without pulsing to 850 at 0.5-inch amplitude and 950 at 0.3-inch amplitude. These scouting runs were limited in scope, however, and other pulsing conditions might be found to be beneficial.
 - b. The effect on uranium transfer of adding nitric acid to the RCX stream was investigated over a range from zero M to 0.3 M nitric acid. At 0.2 M and 0.3 M nitric acid in the RCX, uranium waste losses were approximately 5- and 50-fold higher, respectively, than with no nitric acid added. Over the range from zero to 0.1 M nitric acid in the RCX stream no highly significant effect was noted, although a slight benefit (1.5- to 2-fold decrease in waste loss) was noted at 0.01 M nitric acid compared to no nitric acid in the RCX.
 - c. For TBP-HW #3 Flow Sheet conditions (12.5 vol. % TBP, 0.8 vol. ratio RCX/RCF, no pulsing) the effect of volume velocity on extraction performance has been well established by seven H.E.T.S. runs and two flooding runs. With a complete flooding capacity for 1/2-inch Raschig rings of approximately 1300 gal./(hr.)(sq.ft.), a minimum H.T.U. of 2.3 feet (H.E.T.S. = 7.0 ft.) was observed at 840 gal./(hr.)(sq.ft.) or approximately 65% of flooding. The uranium waste loss varied from 0.15% at 300 gal./(hr.)(sq.ft.) down to 0.01% at 840 gal./(hr.)(sq.ft.) and then increased again to 0.2% at 1100 gal./(hr.)(sq.ft.).
 - d. Two RC studies using 10 vol. % TBP in the organic phase indicated essentially the same extraction performance as for comparable runs using 12.5 vol. % TBP (0.1% waste loss or less).
- 3. RA and RC Column studies using 18.4 feet of 1/2-inch stainless steel Raschig rings in an 8.42-inch column were completed, and additional studies in this column using 18.4 feet of 1-inch stainless steel Raschig rings were initiated. The following new information has resulted from these runs:
 - a. Operating with feed uranium concentrations approximately one-fourth of normal TBP flow sheet values for one RA-type run and one RC-type run resulted in H.T.U. values in line with previous runs at flow sheet uranium concentrations (approximately 2.8 and 5-ft. H.T.U.'s for 1/2-inch rings operating, respectively, at RA and RC conditions).



b. The anomalous solvent extraction performance of 1/2-inch rings in 8.42-inch diameter RA and RC Columns (reported last month and attributed to changes in "wetting" of the packing by the two phases) was not observed in one new RA run and one new RC run using 1-inch rings. Ferformance of the 1-inch packing was in line with similar runs reported previously.

4. Based on H.T.U.'s from solvent extraction studies made to date, scale-up factors for height of packing (at TBF-HW #3 Flow Sheet conditions) on going from a 3-inch diameter column packed with 1/2-inch stainless steel Raschig rings to an 8.42-inch diameter column packed with 1-inch stainless steel Raschig rings are approximately 0 to 20% for the RA extraction section, and 50% for the RC Column.

In addition to the above solvent extraction studies, Scale-Up equipment was used during February to dry by distillation 11,600 gal. of water-saturated hexone (containing 13 g. H₂O/l.) to an average water content of 0.15 g./l., attaining a 96 vol. % recovery of hexone. It was desired to remove this hexone from Scale-Up tanks into black iron drums for storage, and reduction of the water content to 0.5 g./l. or less was considered essential to minimize corrosion of the black iron drums. An H.T.U. ("over-all liquid-film" basis) of 1.5 ft. ± 0.5 ft. was determined for the 6.7 ft. height of 1-inch by 1-inch ceramic Raschig rings in a 16-inch diameter column used for the hexone-water distillation.

Scale-Up equipment was also used to separate Shell "Stoddard Solvent" petroleum cleaning solvent from TBP by batch steam distillation, during which the % TBP in the boiler was increased from 15 vol. % up to approximately 85 vol. %.

Construction and Maintenance

The official copy of the close-out of Project C-331, with the exceptions mentioned last month, was received during the month. It was specified that all work on (and costs for) exceptions must be completed in ninety days from January 31, 1950. No field work has yet begun on these exceptions.

The pierced plates: for the 3-inch and 8-inch pulse columns finally arrived and the necessary shop work for fabrication of the plate cartridges was completed. All piping revisions, pulsing mechanisms and other auxiliaries for both columns have been completed and readied for operation.

Van Stone flanged sections of precision-bered 16-inch pipe to be used for the 16-inch column, either packed or pulsed, have been received from the vendor. The fabrication job was excellent and diameter tolerances are being checked. An enlarged top to complete this column is currently being fabricated in the 300 Area shops. It is anticipated that the 16-inch column can be readied for packed column TBP studies within a month.

Plans have been completed for the installation of the necessary samplers and orifices in the dissolver vent line to permit dissolver off-gas studies for the Stack Gas Development Group.





Revisions to Scale-Up tank farm equipment to permit hexone drying and distillation of Stoddard Solvent from TBP were completed and the equipment used for these purposes during the month. Necessary preparations were also completed for removal of the contents of W-14 Tank to the 200-W Area waste disposal cribs.

Maintenance during the month was mainly limited to repair of damage caused by freezing weather. One coil failure due to leakage in the Scale-Up ACF heat exchanger was corrected. Demonstration Unit pumps and control equipment gave satisfactory performance during the month, although replacement of the Holtzer Cabot motors in the Fischer & Porter controller-recorders is continuing as fast as new Brown motors can be obtained and altered for this purpose.

New work on equipment, of a minor nature, included (1) fabrication and installation of a wide-range controlling recording rotameter from parts of both Fischer & Porter and Schutte & Koerting instruments, (2) fabrication and installation of special graphitar bearings in a Fisher Scientific rotary vane pump, and (3) painting solvent-treatment room floors with Saran paint for test purposes.

Operations

A one-cut dissolver run was made during the month. Use of B-l for concentratic and re-use of Demonstration Unit RAW and RCU solutions was satisfactory throughout the month. Preparations for removal of W-l4 contents to 200-W Area were completed but transfer was held up due to use of the tank trailer for Scale-Up work.

Performance of Demonstration Unit solvent extraction equipment was highly satisfactory during the month. Sixteen RA and nineteen RC runs were completed in the 3-inch packed column during the month. During five of these runs, the pulsing mechanism for the pulse column was used satisfactorily to pulse the organic stream to the packed column. This was done while awaiting arrival of the pierced plates for the pulse column. Although no outstanding difficulties occurred during operation, two cases of sluggish interface control were noted due to low N2 pressure on the bubblers. Two pumps failed (one due to gland leakage, one due to a burned-out motor) but caused no difficulty, because installed spares were immediately put on line. Two instances of instrument failure required manual control (these instruments were still using the undesirable Holtzer-Cabot motors) and manual control was required on the pulsed runs because the pulse caused "hunting" of the Hammel-Dahl valve via the rotameter.

Rate control, aside from above-mentioned instrument difficulties, was very good. One instance of erratic flow rate control was noted on an extremely low rate run at the bottom range of the control instruments.

Scale-Up column operation during the month was at a low rate because of difficulties in the tank farm from the sub-zero weather and also because of time devoted to miscellaneous operations such as drying and removal of hexone from the system, distillation of diluent from TBP, and make-up of fresh solutions, both aqueous and organic.







Three RA and Three RC runs were completed in the 8-inch column, two of each with 1/2-inch rings and one of each with 1-inch rings. Considerable difficulty was experienced with instrument control and material balances because of water vapor in the inert gas bubbler and instrument lines condensing in the lines due to the extreme cold. The leak in the ACF heat exchanger resulted in some loss of process solution on one run. During the early portion of one run a vigorous reaction in the column was noted, and was traced to Cop evolution resulting from some carbonate wash emulsion remaining in the organic phase after a carbonate wash of the solvent. It has been noted with the Steddard Solvent diluent that phase separation after washing of solvent with aqueous solutions is extremely slow.

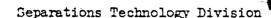
Aside from column operation, approximately 11,000 gallons of hexone were dried, barrelled out, and stored for future use, and 460 gallons of TBP were recovered from a Stoddard Solvent-TBP mixture, to be used with Shell Deodorized Base solvent for future runs. An 8000-gallon tank car of Shell Deodorized Base was received and the solvent transferred to the tank farm via the Scale-U waste tank trailer.

Equipment Development

Submerged Pump No. 2 (G.E. & C.L. turbine pump driven through a two-foot vertical shaft supported on carbon-filled fluorothene bearings) has completed 72 days of operation in 1.8 \underline{M} Al(NO₃)₃ solution at 3450 rev./min., discharge pressure 40 lbs./sq.in., and flow rate of 1.35 gal./min. The shut-off pressure has remained unchanged over the last 30-day period at 54 lbs./sq.in.ga. Operation has been steady and uneventful.

Submerged Pump No. 3 (Roth No. 147 turbine pump suspended from a 10-foot torque tube containing two process fluid-lubricated graphitar bearings) has been in continuous operation for 87 days in 1.47 M Al(NO3), solution at 1750 rev./min. and a discharge pressure of 86 lbs./sq.in.ga. The discharge rate has averaged 3.5 gal./min., including 0.5 gal./min. recirculated to the bearings. The previous month's report (January) indicated a flow rate of 2.7 gal./min. Because of the rapid decrease in capacity with increase in head and the difficulty in maintaining identical discharge pressures at all times, a single value for Rate vs. Head is not regarded as a satisfactory index of performance. The shut-off head appears to be a better criterian. This diminished from 97 to 95 lbs./sq.in.ga. over the last 30-day period. Bearing wear has been insignificant, as found by flow to bearings versus pressure drop

Roth D-62, prototype turbine pump (10-foot vertical drive shaft supported on process fluid-lubricated graphite-filled fluorothene bearings with a waterflooded double Duroseal vapor seal) for the Redox Production Plant operated fo 28 days in 1.8 \underline{M} Al(NO₃)₃ solution at 1750 rev./min., and a flow rate of 15 gal./min. at 60 lbs./sq.in.ga. discharge pressure. The shut-off head remained constant at 250 feed (140 lbs./sq.in.ga.). The seal consumed an average of 210 ml. or 0.057 gal./day of water over the 28-day period, and over the last 12-day period consumed an average of 60 ml. or 0.016 gal./day. The 2 H.P. motor has been replaced with a 5 H.F. motor (the 2 H.P. unit was drawing 167% of its rated amperage under the test conditions indicated above).





Peerless Double Volute, which is also a prototype turbine pump for the Redox Production Plant, is essentially two turbine pumps operating in parallel. Eaclelement employs 180° of the peripheral channel. The pump was dismantled for examination of the middle bearing which was inadvertently operated dry by the manufacturer while on test. It was found that some scoring had occurred, but the clearance appeared satisfactory and testing will proceed on schedule.

Peerless 4"-LA, a four-stage centrifugal pump, completed 130 days of life-testing in $1.5~\mathrm{M}$ Al(NO₃)₃ solution. This was followed by 259 "on-off" cycles in the same test solution, which had no adverse effect upon the boron carbide seals or sleeve bearings, but did cause imminent failure of the seal collar anchor pins. These were replaced by heavier pins (1/8" to 1/4") and doubled in number. A second series (532) of "on-off" cycles was made and it was found that no significant wear occurred at any point.

Moyno 1B2, pump with Kel-F stator and stainless steel rotor driven through a 10-foot vertical shaft (no bearing pin-type universal joints) completed 21 days of operation in 1.8 M Al(NO₃)₃ solution at 900 rev./min. at a discharge rate of 1.8 gal./min. and a head of 8.0 lbs./sq.in.ga. The shut-off pressure diminished from 40 to 21 lbs./sq.in.ga. Operation was noisy and accompanied with vibration.

G.E. & C.L. motor-pump unit, (1/3 H.P. submerged electric motor and G.E.& C.L. turbine pump) completed 118 days of operation in 1.3 M Al(NO₃)₃ solution at 10 lbs./sq.in.ga. discharge head and flow rate of 0.4 gal./min. The unit was dismantled and inspected. Sleeve bearings (graphitar) decreased 0.6 to 0.8 mils in diameter and there was no change in journal dimensions. The upper thrust ring (graphitar) was unchanged and the lower one decreased 0.8 mil. The unit was reassembled and carried through 559 "on-off" cycles from which measurements of wear have not been obtained.

Submerged Jabsco Pump, employing a 10-inch i.p.s. pipe 37-feet long for a caisson-type motor housing, was designed and constructed for use in removing supermate and slurry from the 200 Area metal extraction waste storage tank. Tests indicated a capacity range from 5 to 20 gal./min. at heads of 70 to 22 feet of water.

Flow measurement and control, as represented by Fischer & Porter and Schutte & Koerting rotameters in the 321 Building, was critically examined with emphasis on mechanical and electrical components, and a digest of the components requiring improvement or correction was prepared in conjunction with the Instrument Division. Adaptation of the Foxboro recorder-controller unit to the Fischer & Porter rotameter-transmitter by changing the resistance in the bridge circuit was demonstrated. Some further work is required to maintain sensitivity. The fabrication of rotors with extension armatures in our own shops has been successfully accomplished and has resulted in a much wider latitude of changes in stream flow rates.

Process Chemistry

The solubility relationships at 25°C. for the two major solid phases, uranyl acid phosphate and sodium nitrate, in the aqueous system containing ${\rm UO_2}^{+2}$, ${\rm Na}^+$, ${\rm H}^+$, ${\rm NO_3}^-$ in independently variable concentrations and ${\rm SO_4}^{-2}$, ${\rm PO_4}^{-3}$ equivalent







to the ${\rm UO_2}^{+2}$ concentration (molarity) have been determined over the titratable range of 0 to 10 $\underline{\rm M}$. For the region from 0 to 3.15 titratable acid, the uranyl acid phosphate phase occurs. Its solubility may be defined by the following expression:

 $\log UO_2^{+2} = \log H^+ - 0.84$

The Na⁺ concentration in this region varied from 10 to 15 times the ${\rm UO_2}^{+2}$ concentration and was found not to influence significantly the solubility. For the region 3.15 M and greater titratable acid, sodium nitrate phase occurs. Its solubility is expressed by the equation

$$\log Na^{+2} = 15.02 - 1.46 \log H^{+}$$

The H⁺ ion concentration in the foregoing expressions is base4 on titration to Na_2HPO_4 , Na_2SO_4 , and $NaNO_3$.

Preliminary studies on the direct batch dissolution of metal extraction waste in the form of supernate, sludge, and slurry mixtures have revealed a foam volume seven times the volume of the aqueous phase in the dissolver, if the required amount of acid is added rapidly (1-minute period). Slow acid addition with agitation did not produce a significant amount of foam. Dissolution of a slurry simulating the material to be handled in the TBP process showed a rapid increase in the settling rate of the solid phase during acidification and an increase in viscosity to a maximum of 3580 centipoises at a pH of 0.4. The dissolution in 15 M HNO3 of a synthetic slurry with a composition equivalent to that shown on the TBP process flow sheet to produce an unconcentrated RAF solution results in a heat evolution of 367 g. cal./g. of U, which is equivalent to 5000 g. cal./mole of HNO3 added.

The physical properties of TBP-Shell Deodorized Base system have been determined for a range of composition of 10 to 20% TEP. The disengaging time for the system, 50% NaOH and 15% (vol.) TBP-Shell Deodorized Base, was found to be 56 seconds. For 12.5% (vol.) TBP the disengaging time was 84 seconds. These values are indicative of a low volume throughput capacity for a RO Column if these conditions are chosen.

The stability of the ferrous ion added as ferrous sulfamate in RAF per HW #3 TBF Flow Sheet at 25°C. is equivalent to a half-life period of 53 hours. In RAFS, comparable to feed-point composition, the half-life was 59 hours.

SEPARATIONS PROCESS RESEARCH

Flutonium Analysis at the Chalk River Conference Liquid Waste Tolerance Level

The standar LaF3 procedure for plutonium was modified to permit statistically meaningful analyses at the Chalk River Conference tolerance level of 4×10^{-6} Ag/cc Pu. Increasing the sample volume to 25 ml. (equivalent to 7.5 ct/m at 4×10^{-6} Ag/cc) and the amount of lenthanum to 1 mg. gave satisfactory plutonium recovery (100 ft 15%) in central runs in the concentration range 4×10^{-6} to 10^{-2} Ag/cc. At the CRC tolerance level a counting time of ca. 30 minutes is required as well as a correction for the alpha activity due to impurities in natural lantharum.





Plutonium Decontamination of 200 Area 234-5 Crib Wastes

Scavenging of a sample of 234-5 laboratory waste (D-5, Serial #3245) at pH 10 reduced its plutonium concentration to 1 x 10⁻⁶ and 4 x 10⁻⁶ Mg/cc using 10-3 M cupric and 10-3 M ferric ion, respectively. The volume reduction factor on centrifugation (waste solution/ppt.) was ca. 125 for both, of these scavengers. This waste received at pH 6.5 contained only 2.2 x 10⁻⁴ Mg/cc plutonium, of which all but 3.5 x 10⁻⁵ Mg/cc had already been scavenged by an unknown solid impurity of negligible volume.

Scavenging of a sample of 234-5 process waste at pH 10 reduced its plutonium concentration from $4.5 \times 10^{-5} \text{Mg/cc}$ to 13, 4, and $0.6 \times 10^{-5} \text{Mg/cc}$ with 0, 10^{-3} , and 10^{-2} M ferric, respectively. These decontamination studies on process and laboratory 234-5 wastes will be extended to higher initial plutonium concentrations using actual wastes or by spiking, if necessary.

Plutonium Decontamination of 200 Area 224 Waste

Treatment of a sample of 224 crib waste with 10^{-2} M persulfate followed by neutralization to pH 10 reduced the plutonium concentration from 5 x 10^{-3} Mg/cc to 1 x 10^{-4} Mg/cc. This decontamination factor of 50 represents a considerable improvement over that obtained without persulfate pretreatment. In analogy to the experience with off-standard Redox wastes (HW-15074), this is thought to be due to the elimination of Cr(III) interference in plutonium carrying. An interim report on 224 waste decontamination has been written and will be issued soon.

1131 Removal from Dissolver Solution

The glass laboratory apparatus required for this investigation has been assembled and tested for dissolving cold uranium metal. Radio-iodine studies will be initiated shortly.

Tributyl Phosphate Process Extraction Studies

A batch countercurrent run was made on a simulated concentrated composite uranium waste solution with carbonate-washed 15% by volume tributyl phosphate in Deo-Base. The scrub concentration was 2.75 M HNO3, which gave an acidity in the column near the lower limit, to prevent solid formation (uranium phosphates). Flow ratios of 1/2/3.5/2.5 were used (scrub/feed/extractant/strip). The uranium loss in the RAW for seven extraction and three scrub stages was 0.00% while five strip stages gave 0.01% loss in RCW. Both losses are very low and point to adequate uranium extraction at low acidity and excellent strip column behavior with carbonate-washed solvent.

Comparison of Diluents for TBP Metal Recovery

Dec-Base, Stoddard Solvent, Shell Spray Pase, Varsol, Carbon Tetrachloride, Hexane, and AMSCO 125-90W were compared as diluents of tributyl phosphate (15% by volume) in contact with aqueous phases corresponding to RAFS, RAW, and RC corresition with the conclusion that all extract uranium to the same degree, and the choice of a diluent will best be made on its (1) FP decontamination and (2) physical properties which may affect extraction column behavior. The latter is being given particular attention.



Settling Rates of Hanford Sludge from Slurries

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A sample of sludge taken from the Hanford uranium storage tanks was slurried with different ratios of supernate at 25°C. and the free falling (initial) rate of settling measured. The rate increased from seven inches clears/hour for 5.5 cc supernate/gm. sludge to 58 inches clears/hour for 35 cc supernate/gm. sludge. The final sludge volume for a ratio of 10 cc supernate/gm. sludge was 9.5% of the initial slurry volume or one gram solid suspended per cc sludge. The results with Hanford sludge were closely verified with a sample of synthetic sludge that had been equilibrated at 80°C for three months by the Chemical Development Section.

A sample of 20 grams of Hanford sludge suspended in 100 cc of supernate in an open container gave a radiation of 350 mr./hr. beta and 10 mr./hr. gamma at 12 inches.

Concentration of RAW and Nitric Acid Recovery in the TBP Process

The waste solution (RAW) from the extraction column of the TBP process was concentrated continuously by distillation at distillate to feed ratios of 0.5, 0.6, 0.7, and 0.8 to give recoveries of HNO3 of 31, 53, 72, and 94% of the available HNO3 (3.28 M HNO3 initially available). For an RAW with 2.03 M HNO3 initially available, recoveries of 63 and 89% were obtained for distillate to feed ratios of 0.7 and 0.8, respectively. Freezing points of these solutions during concentration, and of the waste residue before and after caustic neutralization, were determined as a function of dilution. A summary report on the recovery of nitric acid and concentration of waste is being published as HW-16054.

- Hexone - Nitric Acid Reaction Studies

The rate of reaction at $40\,^{\circ}\text{C}$ between hexone and nitric acid in the presence of nitrous acid was found to be appreciably faster than at $25\,^{\circ}\text{C}$ and occurred at lower nitric acid concentrations. At $40\,^{\circ}\text{C}$ 0.01 M nitric acid in the presence of 0.01 M nitrous acid gave detectable amounts of dinitroisobutane and methylsiopropyldiketone. No reaction was observed in the absence of nitric acid.

The formation of the oxime has been postulated as the first reaction between hexone and nitrous acid. Its formation and disappearance was followed quantitatively by utilizing the anion absorption at 276 millimicrons in alkaline solutions. These data indicate that the nitrous acid content follows the oxime concentration.

Continuous Cross-over Oxidation of IBP

Spectrometric and distribution studies were completed indicating rapid and complete exidation of Pu(III) to Pu(IV) in simulated IBP by 0.02 M dichromate. Accordingly, it appears feasible to carry out the required exidation in or immediately prior to the IIA Column by addition of dichromate to the scrub and/or feed. Results of this investigation are reported in EW-16053.





Ruthenium Tetroxide Distillation

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Preliminary data indicate that ozonization gives the desired decontamination when aged (>50 days) dissolver solution is in contact with stainless steel during the ozonization step. In a control run (no stainless steel in contact with the solution) the decontamination factor through the ozonization step, an extraction stage, and two scrub stages was 6.5×10^4 . With stainless steel present during the ozonization step, decontamination factors varied from 2.2×10^4 to 7.4×10^4 . Further studies will be made on the ozonization in the presence of stainless steel, particularly with dissolver solutions one to ten days old.

The solvent extraction behavior of ruthenium left in dissolver solution after ozonization does not appear to be greatly affected in Filtrol_scavenging steps. The decontamination factor through an extraction and two scrub stages only was 11,000 after ozonization; after Filtrol scavenging of this solution and standing for 29 days with adjustment to -0.2 M acid deficiency, the decontamination factor was 5600.

Recovery of Plutonium from Slag and Crucibles

It has been decomonstrated that KOH fusion of crucible fragments containing plutonium results in a product which is easily soluble in nitric acid. Silica settles out of the acid solution (in one experiment the settled volume of silica was 1/4 that of the solution) and adsorbs about 15% of the plutonium. This plutonium can be leached from the silica with hot nitric acid. Removal of the silica can be accomplished by filtration with the use of a filter aid. The plutonium in the resulting $Mg(NO_3)_2$ solution can be quantitatively precipitated as the hydroxide at a pH of 7.

A preliminary study of leaching slag and/or crucible materials with nitric acid to dissolve the plutonium and leave the major portion of the non-plutonium solids in the undissolved residue has indicated that the method is promising. Slag leaching appears to be very effective with 9% of the plutonium dissolved with 2/3 to 3/4 of the slag. Leaching of the crucible is slower, but can be made to give near-complete plutonium dissolution with fractional dissolution of the crucible material.

Coupling of Redox to 234-5 Operations

Data have been obtained indicating the feasibility of eliminating 231 Bldg. operations between the Redox end-stream and 234 Bldg. operations. IIBP solution (1.14 g. Pu/l.) obtained from full-level Redox runs (first cycle at ORNL, second cycle at ANL) was concentrated to a small volume (ca. 180 g. Pu/l) by evaporation and the concentrate used directly for plutonium(III) oxalate precipitations. Incomplete spectrographic analyses of two plutonium(III) oxalate precipitates prepared in this manner indicate that the purity of the product is comparable to that obtained in current 234 operations.

Important in both process and design considerations is the fact that the still residue after Redox end-stream evaporation will contain a high concentration of nitric acid. If evaporation to only ca. 10 g. Pu/l. is employed, as specified in the present flow sheet, the final HNO $_3$ concentration will, according to HDC-1256, be about 5 $\underline{\mathrm{M}}$. Observations made in this work indicate

that it may be as high as 8 M; i.e., HNO3 removal up to this point is slight. This HNO3 concentration is too high even for peroxide precipitation in the 231 Building and would require either partial neutralization or dilution almost back to the original volume, both of which are objectionable. A higher degree of concentration giving more efficient HNO3 removal appears to be in order. This, in fact, is essential if the economies of 231 Building elimination through direct oxalate, arsenate, or phenyl arsonate coupling of Redox and Metal Production are to be realized. Such coupling methods appear to require concentration to at least 300 g. Pu/1., since only a small-volume isolation operation can be accommodated in the 234 Building and preparation of large volumes of oxalate, arsonate or phenyl arsonate supermate for recycle to the Redox Process would be difficult. ANL IIBP solution has been concentrated to ca. 400 g.Pu/1. with no evidence of precipitation and deposition of only a small amount of readily-soluble crust above the water line.

234-5 PROCESS DEVELOPMENT

The solution obtained from the incomplete nitric acid dissolution of the combined slag and crucible residues from five 10-gram scale laboratory reductions has been processed through two hydroxide precipitation cycles. Analysis of the second cycle precipitate indicated 1.74 units of plutonium to be present. On the basis of the calculated plutonium material balance for the reduction processing, the crucibles and slag contained 1.71 units of plutonium. In view of the analytical uncertainties, the plutonium recovery may be considered complete. A flow sheet has been prepared for this process, which can also include handling the solutions used to pickle and rinse the buttons. Analytical data indicated that the supernatant solutions from the precipitation of plutonium hydroxide, the proposed method of treating laboratory wastes containing plutonium, contained 3 x 10⁻⁴ grams plutonium per liter of solution.

Exploratory experiments were made to find a material other than hydriodic acid with which to dissolve skulls resulting from the remelting step in the operations, as well as plutonium oxide from the process. Although very little of a 0.5-gram sample of oxidized plutonium was dissolved with boiling $16 \, \underline{\text{M}}$ nitric acid, the entire sample went into sclution after refluxing it for ten minutes in a $16 \, \underline{\text{M}}$ nitric acid-0.1 $\underline{\text{M}}$ hydrofluoric acid mixture.

A filter, which consists of a sintered platinum disc encased in a Hastelloy C tube, has been fabricated for use as a filter-reactor. It is planned to filter and wash precipitates on this equipment, and then transfer the unit without disturbing the precipitate to the subsequent hydrofluorimation part of the process cycle.

STACK GAS DISPOSAL

All recorded efficiencies at the T Plant sand filter continued in a lower runge (97 to 99.1%). The possibility of contamination in the piping of the downstream monitor is being investigated.

An investigation of the filtration efficiency of "AA" Fiberglas is in progress. A sharp break in the efficiency trend (resulting in markedly higher values) has been obtained with velocities in excess of 100 ft./min. The study is being continued to determine whether this increase in efficiency is due to impingement or an increased packing density resulting from bed compression.



DECLASSIFIED IM-170

A filter paper produced by A. D. Little Co. as a CWS Type 6 substitute was tested on the Canyon ventilation air for contamination removal efficiency. CWS Type 6 paper was employed as the downstream monitor. The filtration efficiencies (ranging from 99.0 to 99.85%) are of the same order as the values obtained for CWS Type 6 paper. Definitive efficiency values in this high range could be obtained only by performing a large number of tests and statistically evaluating the results

INVENTION AND DISCOVERY STATEMENT

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

Name

Title

A. G. Blasewitz

Removal of Iodine from Gas Streams by a Silver-Reacting Bed.

R. H Beaton

Separations Technology Division

Date: March 1, 1950



TECHNICAL SERVICES DIVISION

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FEERUARY 1950

VISITORS & BUSINESS TRIPS

3-10-50

There were no offsite visitors to the Division during the month.

Business trips of Technical Services personnel were as follows:

- M. Lewis spent February 1 and 2 at Louisiana State University, Baton Rouge, where he attended the Symposium on Modern Methods of Analytical Chemistry sponsored by the American Chemical Society.
- A. F. Bushey spent February 13 and 14 at Schenectady discussing analytical techniques with personnel of KAPL and the Research Laboratory. He attended the A.C.S. Analytical Symposium in Pittsburgh on February 15, 16 and 17, and recruited technical personnel at the University of Chicago on February 20, and at the University of Wisconsin on February 21.
- F. B. Quinlan spent February 20 at the Penberthy Instrument Co. plant in Spokane, Wash., discussing their special fabrication of high-density lead glass.
- C. G. Stevenson spent February 23 and 24 at the Argonne National Laboratory, discussing technical information problems, and February 27 and 28 at the Mound Laboratory, Miamisburg, Chio, attending a meeting of the Technical Information Panel.
- N. C. Lembert attended the Spectrophotometer Service Course conducted by G. E. in Schenectady on February 27-28.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	January 31, 1950	February 28, 1950
Analytical Section	322	319
Enginoering Section	51	56
Information Group	61	60
Statistics Group	12	13
Administrative	7.	3
Totals	449	451

The Analytical Section employed one exempt research chemist, one non-exempt chemist, two laboratory assistants and one draftsman; one stenc-typist and two laboratory assistants were lost by resignation. Three draftsmen were transferred into the Section, and three laboratory assistants, one designer and one engineer were transferred out. Three Analytical Section personnel





went on leave of absence.

Effective February 1, 1950, an Equipment Design Unit was established in the Engineering Section. This new unit is responsible for all laboratory equipment design activities in the Technical Divisions (except for that on Rala, which is continuing under Analytical Section supervision). Five personnel were transferred into the Section in establishing this new Design Unit (one design engineer as Unit Leader, two engineers, and two draftsmen). In addition, one carpenter was transferred in from the Maintenance Division for the Technical Shops in Eldg. 101. One stockkeeper went on leave of absence.

The Information Group employed one Technical Graduate for abstracting work, and lost two clerks through resignation. One new exempt statistician was added to the Statistics Group.

The first Technical Graduate to report for work under the new Rotational Training Program was assigned to the 100-H Area analytical laboratory on February 24.

ANALYTICAL CONTROL

Work Volume Statistics -

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

	J	January		ebruary
	Samples	Determinations	Samples	Determinations
Routine Control - 200 Routine Control - 300	3,604 571	10,136 1,350	3,734 507	8,798 1,072
Water Control - 100, 700	1,148	3,546	1,102	3,063
Redox & TBP Programs	2,212	4,694	2,273	4,520
Process Reagents	1,447	1,837	1,362	1,680
Essential Materials	81	437	87	355
Special Samples	2,633	7,509	3,430	10,270
Stack Gas Filters	57	104	53	76
Totals	11,753	29,613	12,548	29,834

100 Arcas Water Control

Tests have been started to determine the effects of pH, chlorination, and bentonite clay addition on the flocculation of Columbia river water. These tests are planned to continue intermittently for a period of several months in order to include conditions of high and low turbidities in the river.

200 Areas Control

The precision of the results of the analysis of the canyon starting solution (6-3-1R), the Isolation Building starting and final solutions (F-1 and AT, respectively) and the 234-5 Building starting solution (P-4) may be summarized







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as follows:

Precision + %

Sample	Expected	January Average	February Averago
6-3-MR	1.58	1.12	1.32
P-1	2.39	3.63	3.21
TA	1.98	1.94	1.87
P-4	2.51	2.64	2.52

In order to maintain closer control of C cell operation in Bldg. 224-T, quantitative analysis of all 2% lanthanum salt solution samples from tank F-1-A has commenced. Also, gross gamma analyses are being made on certain canyon solution samples (13-4-BP, 16-4-BP and 18-4-BP) in B and T Plants to provide information on current difficulties with process decontamination.

300 Area Control

Mothods for the evaluation of used Prestone were studied for the A.E.C. Investigation showed that a potentiometric titration of the organic inhibitor (tri mothylamine) with standard HCl was satisfactory.

Methods have been investigated and written for the determination of the rare earths and chloride in plant process uranium oxide samples.

Numerous samples have been received from the uranium chip recovery process as a result of the production test substituting calcium nitrate for calcium chloride flocculating agent, as recommended by the Analytical Section. These samples were analyzed for halogens, rare earths, boron, molybdenum and phosphorus.

A sample of MgOCl was analyzed for carbon to determine whether the CO2 reported in the gas collected from irradiated MgOCl could account for the carbon present; 9.37% carbon was found, which would account for the CO2 centent of the gas.

Chemical Research Service Laboratory

A sample of waste from the 321 Building (W-14 Tank) was found to have approximately 2,000 d/m/ml of Pu. The sample was checked for active Ru and Zr with negative results.

Samples submitted for fluoride determination are being analyzed by means of a HoSiFadistillation followed by a thorium nitrate titration. The method is time consuming but gives satisfactory results.

Chemical Development Service Laboratory

At month's end there were 43 people assigned to analytical control service for the Chemical Development Section's programs. The efforts of the laboratory this month were devoted to the support of TBP process development activities in Bldg. 321.





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Methods Adaptation

Further investigation of the determination of 40-8 by ferrocyanide titration following a hexone extraction indicated that the method gave increasingly high results with increasing amounts of 40-8. This effect was attributed to the precipitation of such double salts as K(40-8) Fe(CN)₆ along with the expected $(40-8)_4$ /Fe(CN)₆73. It has been found that the ammonium double salt may be precipitated under certain conditions to yield determinations of 40-8 within $\frac{1}{2}$ 1.5% of the actual value and with improved end-point. Satisfactory titrations in a hexone emulsion have not yet been achieved.

An RAW type sample without UNH gave a polarographic reduction wave comparable to 0.1 g/L UNH. The first reduction wave of uranium is lost when iron is present, since the phosphate ion prevents the reduction of iron by hydrazine sulfate.

Determinations of specific gravity by the falling drop technique, using reference liquids of the same specific gravity but with varying viscosity, indicated that use of the reference liquids of high viscosity resulted in a desirably greater region of linear calibration.

The precision of various sampling pipets proposed for use in the Rala Laboratory was determined by delivering a measured amount of standard acid from the pipet and then titrating the acid with a standard base.

Results to date indicate that U(VI) can be titrated in the presence of either PO_4^{-3} or Fe^{+3} with good precision using chromous sulfate as the titrant. When both Fe^{+3} and PO_4^{-3} are present, the ferric iron and the UO_2^{+2} are quantitatively reduced at the same potentiometric endpoint and the iron correction must be made.

Preliminary investigations indicated that preparation of new standards will permit the determination of impurities in the P-4 sample by the carrier concentration spectrographic method with moderate precision and sensitivity. Four films for each of the following impurities in U₃O₈ have been prepared by the carrier concentration method: 10,000 ppm. Fc, 4,000 ppm. Ni and 2,000 ppm. Cr. In most cases of interference, substitute lines can probably be used.

Counting Standards

A great deal of difficulty was experienced early in the month in obtaining satisfactory counting results. Investigation revealed the difficulty to be due to (1) fluctuations of + 12% to -4% in the regulated and normal voltage supply, and (2) line frequency deviations as great as 0.8%. The net result of these changes was a complete loss of control over the instruments.

Several sets of electroplated "pie plates" were received for use in the coincidence study. The ranges of these samples are such that the coincidence may be determined from 350 c/m to 100,000 c/m. No coincidence loss was observed from 350 c/m to 700 c/m.







One set of electroplated pie plates was tested. Plateaus obtained with these electroplated discs were, as desirable, much flatter than normal, reflecting the effect of the discrete energy characteristics of the plutonium on the discs prepared by this technique.

Rala Laboratory Design

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Seven drawings showing plans, elevations and isometric views of cubicle, storage area, decontamination area and are chamber facilities for this laboratory were completed and issued for comment.

Two additional lists have been propared itemizing catalogued and non-catalogued equipment required. The catalogued items will be issued as a revision to "Rala Project Specification Letter $\frac{n}{17}36$, Analytical Equipment Requirements," document HW-13523. The list of non-catalogued items will be forwarded to the D & C Divisions for inclusion in their M & E lists.

The second Rala Analytical Laboratory Design Progress report, document HW-16060, was issued during the month. It described plans for "mocking up" the analytical line in the 101 Eldg., and listed the prints issued specifying foundations for the various components in the laboratory. This latter work was completed ahead of schedule so that D & C could proceed with the building shell and foundation plans.

A draftsman was employed for assignment to Rala Laboratory design and is on loan to D & C while awaiting formal security clearance. The loan of one design engineer from D & C has been extended for one month.

Mr. Siess, West Coast sales representative of the Lienel Corporation, met with the Rala Laboratory design unit on Feb. 11. Considerable general information on model trains and parts availability was developed for use in designing the Remote Control Transport (RCT) system. Arrangements have been completed whereby the Instrument Division will study and report on the feasibility of the proposed electronic controls for the RCT system.

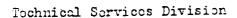
Special Hazards Control

A special air sampling test program was started during the month of February in Bldg. 222-T by the H. I. Operational Division. This test program, which is expected to take approximately four months to complete, should furnish information as to the source and concentration of the air borne radioactive particles detected in both of the Bldg. 222 Laboratories. The same program is planned for the 222-B Laboratory.

Six special stainless steel cans with lids were received from the Maintenance Division for use in transporting liquid wastes from the 234-5 Analytical Laboratories to the 231 Analytical Laboratory for transfer to the 231 Eldg. RC can and return to the process.

The high radiation level of second cycle by-product samples (18-4-EP) in B Plant has made it necessary to use doorstop type sampling equipment rather than bayonet type equipment. This procedure change was effected January 27.







The installation of "Banjo" type air samplers in the 231 Laboratory was completed.

The underground wood-timbered dry waste disposal crib at the rear of Bldg. 222.B collapsod late on February 8. The sunken ground area was backfilled promptly, and a work order was issued to the Project Engineering Division to cover the design and cost estimation of a replacement crib.

Foot treadle valves were installed for the decontamination sinks and the liquid waste aspirator in Bldg. 222-B, and similar work is scheduled for 222-T during March. These valves should reduce water consumption by a factor of ten.

Analytical Hanuals

Issuance of the Laboratory Manual has been delayed pending completion of the apparatus prints. Work of editing new methods to keep the manual up to date has continued. The daily and monthly SF materials accountability reports have been prepared as scheduled.

SF Materials Accountability

Documents HW-16080, "SF Materials Accountability Procedure," and HW-16082, "SF Material Accounting Procedures," were issued during the month. The former details the system of control of such materials in use in the Section (both Control and Research), while the latter defines the various samples received by the laboratories, presents the checking limits within which acceptable laboratory results must fall, and gives references to laboratory manuals where method descriptions are detailed.

ANALYTICAL RESEARCH

Present Separations Process

Experimental work has been completed in the development of a spectrophotometric procedure for the simultaneous determination of plutonium in its several valance states in P-1 solutions; the accumulated data are being examined to establish the accuracy and precision of the procedure.

Studies aimed at the preparation of counting discs suitable for use in the alpha pulse analyzer, the fission counter and other counting equipment have produced a method yielding 94 to 99% efficiency for plating plutonium on the platinum disc. The method involves the prior exidation to Pu(VI) in acid solution with ezone, and the subsequent electrolysis from alkaline solution; the caustic concentration was found to be a very critical factor in the operation.

234-5 Process

Parts for the apparatus to be employed for the determination of carbon in plutonium metal have been constructed for assembly and testing. Research has been undertaken on the use of a TTA-extraction procedure for the determination of impurities in plutonium materials; it was found that some impurities can be extracted from solution if plutonium is held in the trivalent



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state with hydroxylamine hydrochloride.

Document HW-15846, carrying the title "A Comparison of Two Methods for the Spectrochemical Analysis of Plutonium," was issued; it concerned the cupferron-copper spark and carrier concentration methods.

Redox Process

Encouraging results have been obtained from laboratory tests designed to shorten the determination of radiocerium; the method tested is similar to the present established one, but eliminates a number of the steps involved in it.

Document HW-15944, carrying the title "The Determination of Total Plutonium in the Presence of Aluminum," was issued.

Metal Recovery Process

Continued study of the determination of TEP in Shell base by infrared absorption techniques has led to improvements and shown the method to have a precision at the 99% level of + 0.2% TBP in the concentration range of 5 to 15 weight percent. Interference was found to result from the presence of nitric acid and of UNH in concentrations of greater than 20 g/L; it was found that these interfering substances may be eliminated by treatment with anhydrous E_2CO_3 followed by centrifuging.

Rala Process

An autotitrator, such as proposed for the determination of acid in Rala streams, was tested by making repeated analyses of acid solutions; an accuracy of -0.4% and a precision (99% limits) of ± 0.97 were obtained. Document HW-16079, carrying the title "The Behavior of Electrodes in a High Intensity Radiation Field," was issued.

Pile Technology

Laboratory work has been undertaken on the use of an infrared absorption method for the determination of possible impurities in CO₂ used in pile atmosphere; such a method promises to detect all but that limited number of impurities having no infrared absorption. Preliminary tests have established a suitable and convenient method of preparing synthetic gas mixtures for sensitivity studies.

ENGINEERING SERVICES

Tochnical Sheps

General

The Pad Room of Eldg. 101, which is in use by Pile Technology for the P-12 Project, was made an exclusion area. Necessary contacts and arrangements were made with the G.E. and A.E.C. Security Divisions, as well as with the H.I. Divisions.





Estimates were submitted for mock-up work in connection with Rela Laboratory design, including the remote control transport (RCT) features.

Scoping was continued on layout and equipment requirements for the mechanical development shop planned for the new Laboratory Area.

Bldg. 101 Shops

Fabrication work was completed on the graphite cutting tool to be used for the removal of a filler block graphite sample from D pile. A complete mock-up of graphite was made and the cutter tested under conditions simulating those in the D pile. Tost results were extremely satisfactory, and were witnessed by representatives from the P, Maintenance and H.I. Divisions. The cutter was accepted (as fabricated) for use in the field by the P and Pile Technology Divisions.

At the request of Pile Technology, a tool for the removal of the graphite sample cut by the above-mentioned tool is being devised. Design work was completed on this tool and fabrication started. This retrieving tool is similar to the cutter tool, and is to be operated and controlled from a distance of 20 ft. from the point of the actual retrieving operation.

Fabrication was completed on a warp gage for measuring the warpage of slugs, regardless of oversize or undersize diameters. This gaze is for operation under approximately 20 ft. of water, in conjunction with a turntable now being used by the File Technology Division. It has undergone simulated test conditions and some revisions were made to correct minor faults.

A number of specialty items for use on the P-12 Project were designed and fabricated. These included such items as source cup holders, source bar table, source cap guide, split screw driver with 12 ft. handle and source plate holders. In addition a die was fabricated for stemping aluminum feil dishes.

Design work progressed on the first P-12 unit. At the same time, design was nearly completed on development of bases that can be used for P-12 units through minor adjustments regardless of lattice arrangement.

Machine work was completed on a "Rotobin Dolly" for the Metallurgy Section. Machine work also was completed on an aluminum cylinder with plugs for each end and a specimen holder.

Shep work was completed en mechanical tongs and the mounting of accessories in the cave mock-up. This work was done for the Chemical Research Section. A number of jobs for this Section were worked on, including the fabrication of pipottes for manipulator ball and syringovalve control tongs, mechanical jaw tongs for manipulator ball and swivel jaw tongs.

Development and machine work were continued on a vertical lift for use in conjunction with the RCT system planned for the Rala Laboratory. Some work was done on revisions to the RCT equipment itself.



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HW-17056

Work continued on the revision of 135G sheet rod test graphite details for use in connection with the Design Division Ball 3 X test. Additional machining of graphite details for this job was held up pending receipt of drawings from the Design Division.

Hachine work was completed on the revision of graphite details for the Design Division's stress concentration test.

Work was commenced on the fabrication of an automatic experimental sampler for use in connection with the Rala Laboratory design. The sampler will have a capacity of one ml. The cost of fabricating an additional sampler of 0.06 ml capacity is being estimated.

Bldg. 3706 Machine Shop

Fabrication work on a motor driven Ultramicroburette was completed. The commercial model was manually operated and had no provision for rotating the sample dish for stirring. The revised unit has one motor for operating the solution feed plunger and two others for raising, rotating and lowering the sample table. The completed model controls are operated at close range, but could be fabricated for remote operation.

A Syringe Microburette was fabricated for the Chemical Research Section. It consisted of a micrometer feed for the syringe and a number of tips of varying design for testing drop size and reaction under variable conditions. The success of this device depended entirely upon extremely close tolerances and fine machining.

During the month there were a total of 46 jobs received in this shop, of which 37 were completed. At month end there was a job backlog of 13.

Glass Shop - Bldg. 3706

The Glass Shop completed 122 jobs, which could be broken down as follows:

New Jobs	75
Repairs	22
Revisions	25

E. F. Gates, of the Bldg. 3706 Glass Shop, gave some 700 Area Instrument Division laboratory personnel special instruction in some of the glass working techniques which are normally associated with their work.

300 Area Services

Stockroom and Work Order activity is reflected by the following work volume statistics:

Purchase requisitions processed	59
Purchase requisitions requiring emergency handling	'n
Purchase requisitions requiring special expediting	15
Stores stock requests processed	2
Store orders processed	865
Emergency deliveries	10
Work Orders processed	84



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New Laboratory Planning

Project C-187-E - Redox Laboratory - Bldg. 222-S

Soveral sections, including the architectural, foundation and structural steel drawings were approved and released to the field construction forces. The electrical, plumbing and process piping plans were reviewed and several changes were recommended. Review of the heating and ventilating plans was continued, with special attention given to control systems and noise levels. Outline drawings, similar to "scope" drawings of all major equipment pieces except the Junior Cave, were submitted for AEC approval. Final medifications, dictated by field testing, were made to the Junior Cave design. Several cost reducing building design changes were initiated, including a reduction of underground drains. Pre-censtruction design work is estimated to be 90% complete.

Alternate proposals for waste disposal systems were outlined and submitted to the Design Divisions for cost estimating. The completed estimates were returned to the Technical Divisions on February 27.

Study GET-14 - Radiochemistry Building

Cost estimates of the Radiochemistry Building, being prepared by the Design Divisions, were virtually completed. Information as to the service loads was accumulated to expedite the completion of Study GET-16 (see below).

Study GET-15 - Radiomotallurgy Building

An assembly sketch of the 30 curie cell manipulator-positioner was completed. Sufficient progress was made on the preliminary designs of the 1,000 curie cells to permit estimating.

Study GET-16 - Laboratory Area Plot Plan and Utilities

A preliminary plot plan was submitted by the Dosign Divisions for review by Technical.

High-Donsity Glass

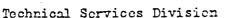
The first specimen of high-density lead glass was received from Penberthy. This glass, which is reported to have shielding properties about equivalent to that of steel on a thickness basis, is of great interest for direct viewing windows.

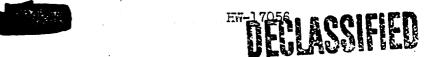
Laboratory Equipment Dosign

The Equipment Design Unit formed on February 1 is using two offices and a mock-up area in Eldg. 101.

The Junior Cave program for Bldg. 3706 proceeded on schedule, and three such caves are being fully outfitted for the Chemical Research Section. Assistance was given in the outfitting of one cave for the Chemical Development Section.







The standardization of gloved box designs was pushed. Four commercial boxes were received from the Radioisotope Applications Co. the week of February 20.

The design of the tensile specimen cutter was completed for the Metallurgy Section. Work on slice and dice equipment was resumed.

Miscellaneous designs completed or nearly completed were for: (1) A magnetic stirrer, (2) a tilting-jaw manipulator for junior caves, and (3) an automatic timer for an automatic sampler for use with resin columns.

STATISTICAL STUDIES

300 Area Operations

The statistical study of analytical results obtained to date from the uranium sample exchange program between Hanford and Mallinekrodt was completed. Several statistically significant differences in results were noted (Document HW-17019).

The correlation study of Bldg. 313 weekly canning rejects, occurring during the year 1949, was completed. It was found that the reject causes having the most variable effect on the yield were bad welds, marred surfaces, and thin caps; those which correlated significantly with each other were frost tests with non-seats, aluminum-silicon with non-seats, and aluminum-silicon with air pockets.

At the request of the Pile Technology Division, a procedure for sampling P-10 lots for Test Pile evaluation was devised. A report is being written. Other computational work and chart making for the P-10 program was performed.

A statistical analysis of aluminum magnesium hardness data was made for the Metallurgy Section to determine the effect of 30, 90, and 180 days of irradiation on the metal.

Other statistical work performed on 300 Area problems during the month included (1) a correlation study between density and carbon of billets B-9831 to H-862 for the 300 Area Plant Assistance Group, (2) initiation of controls for LD-2 and CRD-2 oxides to be used for medification of experience factors, and (3) the determination of coefficients of thermal expansion for the Metallurgy Section.

100 Area Operations

Due to the lack of strict comparability of pre-exposure and post-exposure dimensional measurements of slugs, it has been recommended to the Pile Engineering Section that slug measurements from each tube be taken before and after exposure by the same method, and that an individual slug measurement record be kept so that a direct comparison can be made.

Dimensional measurements of uranium slugs exposed under PT 105-258-P, PT 105-255-P, and PT 105-278-P, are being compared to Group V alpha relled





uranium emposed to 400 M.W.D. to determine unusual dimensional changes or increase in variability as the exposure level is increased.

Computational work was performed on four different problems for the Pilo Physics Soction during the month.

200 Arca Operations

Further statistical study of the optical density method for determination of percent tributyl phosphate resulted in satisfactory calibration of the method by means of quadratic equations. In addition, various sources of error in the method were separately evaluated from experimental data.

A program to study F-10 and P-1 comparisons, with special emphasis on plant sampling, was planned in cooperation with the Analytical Section.

Investigation of possible connection between shifts in the ΔT -Specific Gravity R_clationship and the periodic changing of nitrogen supply cylinders at Bldg. 231 was begun.

Further computations were made on data from Bldg. 234-5 spectrographic standard analyses, at the request of the Analytical Section.

Collection of data from 200 Area waste and yield samples for the past several months was begun, in preparation for correlation studies of wasto losses and enrichment level, and for a comprehensive study of process performance.

Miscellaneaus

At the request of the Design and Construction Divisions, solutions to simultaneous equations at various values of constants were made.

In cooperation with Pile Technology personnel, a proposal for a Technical Divisions IBM Computing Laboratory was submitted for consideration. Details included equipment, space, and personnel requirements.

LIBRARY AND FILES

Plant Library

The bound periodical collection of the Plant Library was enriched by the receipt of a substantial run of the "Proceedings of the Royal Society of London" for the years 1905-1949. In addition, a 17-year run of the "Biochemical Journal" was received.

Application of the Library's technical reference resources to the problems of the Plant centinued on a routine basis. Following is a representative sampling from the many literature searches made:

Plaster casting of aluminum.
Design of aquariums.
Load analysis of timber ring joints.







Heat capacity of nitric oxide.

Neutralizing static charges on analytical balances.

Classification of laundry sours.

Iodine content of molasses.

Preventing attack of soil bacteria on canvas.

Temporature coefficient of gasoline.

Library statistics were as follows:

	January	February
Number of books on order received	232	200
Number of books fully cataloged	215	271
Number of bound periodicals processed but		
not fully cataloged	1	209
Pamphlets added to the pamphlet file	5	2
Miscollaneous material received, processed, and routed (Including maps, photostats,		
patents, etc.	37	28
Books and periodicals circulated	1,655	1,592
Unclassified reports processed	110	98
Unclassified reports circulated	99	162
Reference services rendered	725	680
Main Library	W-10 Branch	Total
Number of books 5552	2185	7737
Number of bound periodicals 4006	100	4106

Classified Files

A supply of the newly-designed "Receipt of Material" form was received for use in the Classified Files. It is anticipated that use of this form, which is numbered, prepared with snap-out carbons, and color controls will greatly expedite offsite transmittal of classified documents, and eliminate a number of posting operations.

With the recent transfer of the Engineering Files from the Design and Construction Divisions to the Project Engineering Division, arrangements were made to return the handling of all classified material formerly issued and controlled by these Engineering Files to the 700 Area Classified Files.

A meeting was held with representatives of G. E. Security, D & C Classified Files, Operations Classified Files, and representatives from the Print Shop and the area Duplicating Units to discuss the problem of reducing the number of rough drafts and extra copies of classified documents. Those present were asked to draft tentative procedures covering the matter which could be incorporated by the Security Office into an effective Instructions Letter.

The work of the Audit and Inventory Unit showed a 100% increase in the number of files inventoried. This procedure has already discovered 12 documents proviously accounted missing in the earlier inventory. Unfortunately, the increase in the return of documents to Files has accentuated the critical





space problem in the 300 Area Classified Files.

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Work statistics for the Classified Files were as follows:

	Januery	February
Documents Routed	21,045	16,772
Documents issued	7,536	5,969
Reference services rendered	3,452 -	3,650
Reports abstracted	378	260
Registered packages prepared for offsite	275	317
Inter-area mail sent via transmittal	17,331	17,150
Holders of classified documents whose files were inventoried:		
a. Because of normal perpetual inventory procedure	17	31
b. Because of transfer of work assignment	3	4
c. Because of termination	3	- .
Volume of unclassified mail handled by 300 Area	•	
Mail Room	20,335	19,487
Central Report Publications Unit statistics were as	follows:	
Ditto mesters run	· 820	973
Mimeograph stencils run	2,630	1,328
Ditto master copies propared	26,110	33,264
limocgraph copies prepared	72,493	59,888
Formal Research and Development reports	,	•
is sued	7	8

INVENTIONS

All Technical Services Division personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during February 1950. Such persons further advise that, for the period therein covered by this report, notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Sigmed

T. W. Hauff

Division Head

T.H:mcs

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FEBRUARY 1950

Surmary

The Medical Divisions: roll changed very little from 362 to 361.

A meeting of our medical consultant group was held in Richland on February 10th, 11th and 12th. The problems of Industrial Medicine and Public Health wore considered, and further attention was given to the problem of balancing the Hospital Budget. Dr. Ellis Scx, Chief of Local Services Division, Public Health Dept., State of California, joined the consultant group to advise on the public health aspects of the program here. It is expected that this will be the last visit of the consultant group, and their final report is expected shortly.

Dr. Eckles attended the Information Meeting of the A.E.C. Division of Biology and Medicine in Washington, D. C. Dr. Norwood gave a paper at the annual meeting of the Academy of Occupational Medicine in Cincinnati, and visited the Medical Divisions at the Apparatus Dept. in Schenectady and the Knells Atomic Power Laboratory.

Industrial

There was no evidence of injury to any employee due to radiation.

Employee physical examinations were up 41% from 1695 to 2394, due largely to increased subcontractor employment. Dispensary treatments dropped from 5473 to 4965. Two major and five sub-major injuries were treated. One of the major and two of the sub-major injuries were sustained by G. E. employees.

The health topic urged allergic employees to seek aid now before the start of the major pollen seasons for best preventive treatment.

Sickness absentecism declined from 2.23% to 1.96%, while total absentecism was down from 2.84% to 2.44%. This compares with 3.20% for February, 1949.

Communities - Hospital and Clinics

The average daily hospital census changed very little from 86.7 to 85.7, the adult census being 74. This compares with a total average census of 127 a year ago.

Clinic visits changed very little from 5482 to 5506.

Public Health

It was gratifying to note attendance at public health lectures and talks exceeded 500 for the second consecutive menth. A mental health series of lectures concluded during the month received excellent community support.

Eleven focd establishments were given Grade A ratings while two received Grade B ratings.

FEBRUARY 1950

Costs

The net cost of operating the Medical Divisions (before assessments to other divisions and workmen's compensation costs) was \$83,260., a decrease of \$8,762., and \$28,894. below the budget figure. The improvement was due to a large increase in revenue which more than offset an increase in total expense.

The net cost of the Richland Community Medical Program was \$6,504., a decrease of \$3,305., and \$16,794. below the budget estimate.

Kadloc Hospital cost was \$3,374. as compared to \$1,216. for December and a budget figure of \$14,750.

The clinic cost was \$3,130., a decrease of \$5,463. due to increased revenue.

FEBRUARY 1950

Industrial Medical Division

General

Examinations increased from 1695 in January to 2394 due chiefly to an increase in subcontractor examinations, of which there were 1054. The number of first aid treatments, however, decreased from 5473 in January to 4965. General Electric employees sustained one major injury and two sub-major injuries. Subcontractor employees sustained one major and three sub-major injuries, or a total of two majors and five sub-majors treated.

The Industrial Medical program was reviewed by the consultant group on February 10th and 11th. This group consists of Dr. Herman Smith, Mr. William S. McNary, Dr. R. A. Moore and Dr. S. T. Cantril. There was a detailed discussion by the group as to the overall program including costs, followed by a trip to the operating areas. A report of their findings is to be submitted at an early date.

To better coordinate control of chemical hazards on the plant, a permanent committee was organized during the month, which will be called the Chemical Hazards Committee. The function of this committee will be similar to the Special Hazards Committee, which functions in the control of radiation hazards. The membership will be made up of a representative from the Industrial Medical Division (Chairman), the Safety Division, the H. I. Divisions Industrial Hygiene group, and the Manufacturing Divisions.

The subject of the industrial physicians: scientific meeting dealt with summaries of two recent meetings. They were the A.E.C. Washington meeting of Biology and Medicine, and the Cincinnati meeting of the American Academy of Occupational Medicine.

The Health Activities Committee met on February 16th and the topic of the month - Allergy was presented. Material on this subject was prepared for distribution throughout the plant. The absentee rate has been slowly climbing during the past two years and in 1949 was up to 4.05 days lost per employee per year. Special emphasis was placed on at least holding the present absentee rate, which is about one-half the national average. Supervisors were encouraged to refer the chronically absent employee to industrial physicians in an effort to help some of the problem cases.

The absentocism for sickness was 1.96% in Fobruary as compared to 2.23% in January.

There were no findings attributable to radiation to any employee during the month.

FEBRUARY 1950

Physical Examinations	Jan. 1950	Feb. 1950	Year to date
Operations	C.E.	83	148
Fre-employment	. 65	52	92
Rohire		474	924
Annual			1064
Interval		520	21
A.~E. C		9	
Recheck		166	298
Termination		36	84
Sub-total	. 1291	1340	2631
Sub-contractors			
Pre-employment	. 98	156	254
Rohire		756	935
Recheck		73	133
Termination	•	69	136
Transfer	•	0	0
Sub-total	•	1054	1458
DUD-TOTAL	• 404	1004	1100
Total Physical Examinations	. 1695	2394	4089
Laboratory Examinations Clinical Laboratory			
Government	. 84	0	84
Pre-employment, terminations, transfers.		6218	8799
Annual		2478	4797
Rechecks (Area)		2729	5593
First Aid		20	39
Clinic		2696	5325
Hospital		2793	5870
Public Health		16	63
Total		16950	30570
10041	. 10020	10300	00010
X-Ray			
Government	9	0	9
Pre-employment, terminations, transfers		1083	1474
Annual.		507	967
First Aid.		101	177
Clinic		211	428
Hospital		196	391
Public Health			
		9	18
Total	1357	2107	3464
Electrocardiographs			
Industrial	F0	00	100
		77	127
Clinic		1	4
Las pital.	30	26	56
Tctal	63	104	187

FEBRUARY 1950

Allergy	Jan. 1950	Feb. 1950	Year to date
Skin Tasts	. 26	16	42
First Aid Treatments Operations			
Occupational Treatments Occupational Retroatments Non-occupational Treatments Sub-total	. 1274 . 3579	303 1353 2876 4532	721 262 7 6455 9803
Construction		•	
Occupational Treatments Occupational Retreatments Non-occupational Treatments Sub-total	. 107 . 44	81 266 86 433	132 373 130 635
Total First Aid Treatments	5473	4965	10438
Major Injuries			
General Electric	. 2	1 -1 2	1 <u>3</u> 4
Sub-major Injuries			
General Electric	. 0	2 3 5	9 3 12
Absenteeism	•		•
Wockly employees, all causes	2.23% 2.109 2.23%	2.44% 1.96% 1525 752 2277	2.64% 2.09% 3634 1872 5506
Total calls requested	. 28 . 0	15 15 0 0	43 43 0 3

FEBRUARY 1950

Villago Medical Division

General

Medical Divisions' roll decreased from 362 to 361. The average daily adult hospital census decreased from 75.0 to 74.0, as compared to 112.2 a year ago. The figure for a year ago includes both Kadlec and North Richland Hospital.

Ratio of hospital employees to patients for the current month is 2.34.

Clinic visits increased from 5482 to 5506, which is a 0.4% increase as compared to the previous month, and 43.8% below a year ago. North Richland medical center accounted for 3.1% of the total clinic visits this month.

The net expense of the Richland community medical program for January, 1950 was \$6,504. as compared to \$9,309. for December, 1949. Breakdown is as follows:

Kadlec Hospital net expenses
This is an increase of \$2,158. over December, 1949, due
primarily to: (1) a decrease in services to Industrial
Medical by the Clinical Laboratory and X-Ray Departments;
(2) the elimination of salary charges on an intra-division
basis to Industrial Medical of 35% of salary costs of
delivery room, obstetrical ward, physical therapy, operating
room and anosthesia on a standby basis.
Clinic net expense

This is a decrease of \$5,463. as compared to December, 1949, due primarily to increased revenue.

Clinic Visits	Jan. 1950	Feb. 1950	Year to date
Medical	1062	1094	2156
Pediatrics	670	728	1398
Surgical	641	644	1285
Gynecological	373	437	810
Obstetric (new)	68	66	134
Obstetric (recheck)	705	673	1378
Venercal Disease	15	43	58
Ecr, Noso, Throat	300	301	601
Eyo	201	. 258	459
Visits handlod by nurses	724	573	1297
Night clinic visits	723	689	1412
Total	5482	5506	10988
Avorage clinic visits per day	211	229	220

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<u>.</u>	Source of Richland Clinic Visits	Jan. 1950	Feb. 1950	Year to date
1	Richland	2.7%	90.7% 3.6% 5.7%	91 .9% 3 .2% 5 . 0%
	Home Visits (Pay Cases)			
	Doctors Nurses Total	476	365 311 676	957 787 1744
	Kadlec Hospital			
	Admissions - Adults	2345 363 2708 5.4 5.6 75.0 11.7 86.7 3 63 85.1% 146.2% 84.3% 9.8%	380 2071 327 2398 5.4 74.0 11.7 85.7 2 39 83.2% 146.2% 6.1% 11.8% 78.5% 2.6% 2.9% 4.7% 1.3% 10.0%	818 4416 690 5106 5.4 5.5 74.5 11.7 86.2 5 102 84.1% 146.2% 83.2% 6.0% 10.8%
	Surgery			
•	Major Minor Eye, Ear, Nose, Throat Transfusions Dental	68 54 37	70 65 35 64 3	146 133 89 101 3
	Vital Statistics	•		
12124	Deaths Live Births Still Births	63	2 60 0	6 123 2
,				

FEERUARY 1950

Physiotherapy Treatments	Jan. 1950	Feb. 1950	Year to date
Clinic Hospital Industrial: Plant Personal Total	71 65 146 18 300	37 57 280 45 419	108 122 426 63 719
Pharmacy No. of prescriptions filled Patient Meals	2862	2540	5402
Regulars Specials Lights Tonsils & Adenoids Liquids Surgical Liquids Total	1020 74 2059 137 136 67	2975 818 37 1717 77 163 65 5852	6143 1838 111 3776 214 299 132
Cafeteria Meals Noon	276	1480 261 1741	3414 537 3951

Public Health Division

General

There was a slight increase in the number of communicable diseases reported; however, a decrease of 48% in norbidity home visits was noted.

Special educational services for the spastic child and other orthopedic conditions will start next month in the Richland Schools.

The Mental Health Program series was completed during the month. A committee was selected to give further thought and study to the merits of a Mental Hygiene Society in this community, or to apply for active membership in the Richland Health Council.

One restaurant and one fountain were issued permits and Grade A placards. Eleven Grade A and two Grade B establishments are now in operation. Four of the Grade A establishments have been given time limits of three weeks to complete necessary imprevenents. Failure to do so will result in lowering of the respective grade.

Mosquito control operations will commence in early March.

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	Administration	Jan. 1950	Feb. 1950	Year to date
	Newspaper Articles Committee Meetings Attendance Staff Meetings Lectures & Talks Attendance Conferences Attendance Radio Broadcasts	7 52 4 7 517 13 48	15 0 0 4 9 511 37 125 0	21 7 52 8 16 1028 50 171
	Immunizations			
·	Diphtheria	. 1 . 39 . 48 . 1	288 0 75 0 0 3 366	481 1 114 48 1 6 651
	Social Service			
	Cases carried over	. 22 110 . 13	97 22 119 21 98	185 <u>44</u> 229 34 195
	Sources of referral: Public Health Doctors Intcrested Person School Personal Application Other Agency Miscellaneous	. 13 . 2 . 2 . 2 . 1	4 9 3 1 2 2 1 22	6 22 5 3 4 3 — 1 44
	Senitation .			
	Inspections made	207	169	376
	Bacteriological Laboratory			
	Treated Water Samples	65 248	155 70 229 454	326 135 <u>477</u> 938
		, 1 01	201	

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		•	
Communicable Diseases	Jan. 1950	Feb. 1950	Year to date
Chicken Pox	. 19	15	34
German Measles		. 24	30
Gonorrhea	_	1	l
Measles		. 0	1
limps		1	1
Pinkeye		0	1
Ringworm	_	0	1
Roseola	_	۔0	1
Scabies	_	1	3
Scarlet Fever		9	21
Syphilis		6	6
Tuberculosis		i	1
Whooping Cough		. 2	2
Total		60	103
Total No. Nursing Field Visits	. 1056	739	1795

Dental Division

General

Dental visits were 2% less than the previous month, and 39% below the figure for a year ago.

PERSONNEL SUMMARY

February 28, 1950

	1100 Area				3000 Area				Outlying Areas						
	TOTAL	Administration	Industrial	Clinic	Hospital	Public Health	Clinic	Public Health	100-B	100-D	,100-F	100-н	200-E	200-т	300
Physicians	29	2	5.8	16	1	1	1	i	.3	-3	.2	.3	.2	.5	.4
Dentists	10			9 1			1	-	i			i			
Kurses **		2	9	11	51	10	1	1,	1	4	4	1	4 1	5	2
Anesthetists	3				3					 i			-	i	
Nurse Aides *	31	!	<u> </u>	2	27	1		1							
OrdAmb. Driver	6	.	 _		6			1	1					i	
TechDent. Hyg.	i			1 1				-						1	
TechClin. Lab.					11.4				.41	.4	•4	.4	.4	•B!	٤,
TechX-Ray		<u>.</u> .			4		1			-				1	
TechBact. Lab.		• ;			1									i	
Tech Phys . Ther .		1 4			1		i								
Secretary	2	2					;	. :							
Cler. Wk. Leader	2	11.		· · · · · · · ·	1		ľ	1							
StencTypist	9	, 3			2	2 ·									
Off. Mach. Oper.	3	12:	1	1			,								
Telephone Oper.	4	4					ļ								
General Clerk	62	20	18	9	10	1	1	!	•5	•5	•5	5	5ء	.5	1
Pharmacist	4				4								1		
Dietitian		•	:	i	2		i				ļ	!			
Cook	; 5	:	1	-	5		:	1				•			1
Kitchen Worker	10	1	i	1	10		1	1		}		i]		
Soc. Serv.Coung.	3	:	:	:		3							<u> </u>	!	-
Senitarian	1 3	i	;	i		3	i	1			!	1			
Health Educator	1	:	1	!	1	ì	!	i		,	1				
Dental Asst.	: 9		;	8	!		1 1	!	i			;		<u> </u>	!
Janitors	16	. 1	4.9	2.8	6.6	1.7	:	•	1	!					
Bacteriologist	2	1	1	1	2	i	i	1	1	:	1	:			
Records Supv.	2	2	<i>'</i>			1				1	!				1
Acctg. Supv.	3	3			1			1		1	1	L -			
Admin. & Assts.	3	3	1		1			1		!	1				1
Others	9	1		3	6	1	1	1		<u>.</u>		i		i	1
Total	361	45	41.7	61.	154.0	22.	7 4	1	2.2	5.2	5.1	2.2	5.1	6.8	4.2

^{*} Two nurse aides working part time.
* Two nurses working part time.

Number of employees on payroll:
Beginning of month 362 End of month Net decrease

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HEALTH INSTRUMENT DIVISIONS

FEBRUARY, 1950

Summary

The force increased by two. No Special Hazards Incident investigations occurred.

Considerable progress was made in P-10 hazard detection and evaluation through joint intradivisional effort during this period. Surveys by the Operational Division showed no major deviations from normal practices nor any above normal personnel exposures.

Routine air, water, and vegetation samples obtained through Development Division control activities showed the normal pattern of activity distribution. Bioassay of urine samples for plutonium showed no confirmed positive results. A maximum result of 130 µg/liter of uranium was obtained. Seven percent of the urine samples analyzed for P-10 were above the detectable limit. Four of these came from one individual.

Biology Division work proceeded satisfactorily. Analytical work on two-year old algae from the 107-F basin showed unexpected presence of Pm147.



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HEALTH INSTRUMENT DIVISIONS

FEBRUARY, 1950

Organization

The composition and distribution of the force as of 2/28/50 was as follows:

10	00-B	100-D	100-F	100-H	200-E	260-M	300	<u>700</u>	P.G.	Total
Supervisors Engineers Clerical Others Tctal	1	1	6	2	2	9	13	5	0	39
	4	3	16	4	11	15	9	4	0	66
	0	0	1	1	1	2	4	4	0	13
	9	15	37	11	29	64	57	1¢	8	240
	14	19	60	18	43	90	83	23	8	358

Number of Employees on Payroll	February 1950
Beginning of month	356
End of month	<u>358</u>
Net increase	2

Additions to the roll included six clerks, an inspector, and one laboratory assistant. Removed from the roll were a group head (physics), two engineers (assignment), a technical graduate, and two laboratory assistants.

General

Prometheum 147 activity was second only to Iron 59 activity in the long-lived constituents of algae exposed in pile effluent basins. It is important to determine whether this came from escaping fission product activity or from the decay of neodymium activated in passage of water through pile tubes.

No investigation of special hazards incidents was required.

The following trips were reported:

- 1. KE Herde and RF Foster consultation with Dr. LR Donaldson, and inspection of Biology facilities, at U. of Washington.
- 2. HM Parker Schenectady, Laboratory Directors meeting, Washington, D.C., Argonne National Laboratory, Chicago.

Dr. ME Ensminger visited the experimental animal farm, and Mr. P. Persiani (ANL) examined the liquid waste disposal studies.





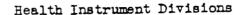
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During the period covered by this report, all persons in the Health Instrument Divisions engaged in work which might reasonably be expected to result in inventions, or discoveries, advised that to the best of their knowledge and belief, no inventions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

Inventor Title

None None





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OPERATIONAL DIVISION

100 Areas

General Statistics

	January			February				1950			
	В	D	F	H	Total	<u>B</u>	<u>D</u>	F	<u>H</u>	Total	To Date
Special Work Permits Routine & Special Surveys 107 Effluent Surveys Air Monitoring Samples	525 95	563 400 93 75	427 89	468 446 105 193	1,798	492 80	889 339 100 80	356 61	340 333 85 298	2,625 1,520 326 503	5,303 3,318 708 946

Retention Basin Effluent

The activity of the water leaving the retention basin was as follows:

		100-B	100-D	100-F	100-H
)	Power Level (MW) Average beta dosage-rate (mrep/hr) Average gamma dosage-rate (mr/hr) Average total dosage-rate (mrep/hr) Average integrated dose in 24 hrs. (mrep) Maximum integrated dose in 24 hrs. (mrep) Maximum integrated dose in 24 hrs. (mrep) Maximum integrated dose in 24 hrs. (mrep) 100-B Area	275 1.1 1.9 3.0 72 84 84	305 2.3 1.2 3.5 84 101 101	305 1.2 2.4 3.6 86 108 108	330 1.1 2.0 3.1 74 91

Pile and Associated Buildings

Radio-active gas was found in the 105 Building valve pit and was caused by the sudden closing of the No. 8 exhaust damper. The condition was readily corrected by opening the damper and the miscellaneous storage area doors. A lock mechanism will be installed on this damper to prevent recurrence. Active gas was found in the inner instrument room due to leaks in the lines. Air contamination due to effluent vapors continued to be prevalent in some of the sample rooms.

The gamma radiation in the beam at the top, far edge of the pile was about 15 mr/hr. There was some indication of slow neutrons in this beam.

P-10 Operations - 109 Building

An experimental survey instrument for detecting contamination was demonstrated





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during the latter part of the month. Surveys of smears taken in the hood room, on operators' shoes and clothing and at other locations showed general contamination which was presumed to be P-10 oxide. Previous surveys with the Portable GM and Zeuto instruments showed no contamination. Considerable progress was made in sampling techniques and procedures. A method of drawing a known volume of air through a dessicant and recovering the P-10 oxide was developed. Methods of carturing moisture from breath samples using dry ice is currently being explored.

Four operators washed their hands in a solution of alcohol and soap and collected the washes for analysis. Three showed no significant results and the fourth showed a result of 2.25 µc P-10 oxide/liter.

100-D Area

High level contamination was encountered in the discharge area during the removal of process tubes and the subsequent sampling of graphite from the tube channels. An air sample taken during the cutting of one of the tubes showed a beta concentration of 1.5×10^{-4} µc/liter at 10 feet from the tube. Masks were worn throughout all the work.

Two vertical safety rod thimbles were replaced. Contamination and personnel exposure control was good. Sections of the thimbles were transported to the hurial trench, and it was necessary to enlarge the Danger Zone limits outside of the fence until such time as the sections could be covered with dirt.

The rol guide for Vertical Safety Rod No. 20 was removed from the pile and a shield installed. After the power level reached 305 MW, entry on the top of the unit was severely restricted due to radiation scattered from this shield. Additional shielding was placed around the bumper plate assembly on the subsequent shutdown and all dosage-rates appreciably reduced.

Air contamination due to effluent water vapors continued to be prevalent in the water sample rooms. The maximum air sample taken showed 2.3 x 10^{-4} $\mu c/liter$.

The gamme dosage-rate in the beam at the top, far edge of the pile decreased to about 1.5 roentgens per hour from about 2.5 roentgens per hour reported last month. A slow neutron flux of about 40 mrem/hr was observed in the beam.

100-F Area

Four irradiated metal pieces were broken under water for examination and study by members of the Pile Technology Division. No unusual exposure rates were encountered Water samples showed no indication of spread of contamination from this work.





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The rod and rod tip of Vertical Safety Rod. No. 19 were removed from the pile due to a leaking thimble and the thimble plugged and shielded prior to startup. However, shielding was inadequate and the entire top of the unit was restricted Increased radiation fluxes were reported in the discharge elevator machinery room as well as on the front face of the pile due to scattered radiation from the shield.

A gas leak in the base seam of the pile resulted in spread of active gas to the work area. Air contamination due to effluent water vapors was similar to that reported in the other areas. No additional readings in the beam at the top, far edge of the pile were taken during the month due to the high dosage-rates in this area.

100-H Area

Gas leaks were still prevalent along the base seam of the pile in the reactor development room and the near side of the front face. Air contamination from effluent vapors was found in the sample rooms, in the reactor development room, in the discharge elevator machinery room, tool dolly machinery room, gas instrument room, and the No. 1 experimental level. Appreciable neutron fluxes were observed in the decontamination room at the reactor development holes, but were substantially reduced when the steel doors were closed across the holes.

Installation of shields over the vertical "T" seams on the No. 1 experimental level was completed and the shield proved effective. Considerable neutron leakage is evident at the experimental holes, but is below the daily permissible level five feet from the pile face.





200 Areas, T and B Plants

General Statistics

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	Jenuary			· -Feb	1950		
	T	B	Total	T	<u>B</u>	Total	To Date
Special Work Permits Routine & Special Surveys Air Monitoring Samples Thyroid Checks	275 417 414 65	253 1·36 681 66	528 853 1095 131	300 434 543 106	331 492 781 75	631 926 1324 181	1,159 1,779 2,419 312

Air Sample Results

		Number abov	re			
Location		10-12 1	.0-7	Maxi	ma	
T Plant No.	. Taken		.p./liter			ter. Remarks
Canyon	224	μg Pu/cc μc f ***94	216	1x10-9	5x10-4	Crane work, Sec.15
221 'Galleries	, 123	9	14	2.4x10 ⁻¹²	4.3x10 ⁻⁷	Sec.18,Oper. Gallery
R-13 Changehou	se 48	13	10	5x10 ⁻¹⁰	5.4x10 ⁻⁶	Positive pressure in canyon.
222	69	11	4	3x10 ⁻¹¹	2x10-7	Room 7.
224	76	7	14	7x10 ⁻¹¹ .	1.9x10 ⁻⁷	Unloading&jetting
Others	***3	-	2	<10-11	4.5x10 ⁻⁷ °	at F-10 cage. Samples at 101-U tank.
3 Plant Canyon	120	***18	77			Jetting,blocks
221	303	18	7	9.5x10 ⁻¹¹	7.6×10^{-7}	off Sect.19 Sec.13 Pipe Galler
Galleries	Extre	mely high airborn				
R-13			_	-12		
Changehou		2	0	1.8x10-12	***	
222	95	2	36	*2.3:10-11		*Mens'locker room
224	195	2	C	1.5x10 ⁻¹²		*Room 7 F Oper.Gallery
Others	28	1	1	1.9x10 ⁻¹²	1.5x10 ⁻⁷	224-B roof near water tower
***Sensit	ivity 1	imit 10-11 40 Pu/c			•	

***Sensitivity limit 10⁻¹¹ /rg Pu/cc





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Canyon Buildings

In the T Plant, gross canyon deck and paper contamination occurred from sections nine through thirteen as a result of considerable cell crane work. Short time limits were imposed during cleanup operations of this contamination and during unplugging of a jet assembly at section 18. Monitoring assistance was required during sampling on five occasions. Contamination was found to be rather general over the 75 ton crane bridge and the craneway. A door was installed at the inner stairwell of R-13 in an effort to keep canyon air out of the R-13 change house.

In the B Plant, considerable contamination was expected and occurred during the removal of a specific gravity dip tube. Cleanup and decontamination was quite effective except for a few cell cracks where the contamination evidently washed down and was not readily removed. Unusual air conditions were experienced and contamination found in the Operating and Pipe Galleries. This was attributed to unusually high airborne contamination in the canyon coinciden with frozen carrier units, Installation of ten sampling positions from Section 4L through 14L were completed in the Operating Gallery and permit the remote sampling of canyon air. Close comparison was found between these samples and samples taken in the canyon proper.

... Control Laboratories

	T Plant	B Plant
Items conteminated and not regulated	196	138
Skin contamination, alpha	. 0	2
Skin contamination, beta	0	2
Contaminated floor locations	26	47

In the B Plant, hand contamination occurred when a rubber glove was punctured, but no injury was experienced and the contamination was readily removed. A ground cave-in occurred near the laboratory contaminated dry waste pit and was promptly backfilled preventing drainage of any large amount of surface water into this area.

Concentration Buildings

In the T Plant, nine maintenance repair jobs were completed with contamination confined to the work area and protective clothing. Routine cell surveys showed an estimeted 25 µg Pu in C Cell and 58 µg Pu in E Cell.

In the B Plant, air sampling at the roof vents was resumed as weather permitted. Several minor maintenance jobs were completed with excellent contamination control.





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Stack Areas

	In the T Plant large amounts of water were found in the inlet and outlet by-
-—	-
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Air Sample Results

Location	Number Taken	Number Above 10-12 pg Pu/cc	Meximum pg Pu/cc	Remarks
Operating Cells Control Laboratory Development Laboratory Ducts Cthers	194 153 8 9 35	0	2.3 x 10-11 1.4 x 10-9	Cell 4 - Routine SWP - Room 34

Building Surveys

		Operating Cells	Control Laboratory
Items not regulated	found contaminated	13	92
Number above 20,000	d/m	0	0
Skin Contamination		0	Ō
Floor contamination	locations	0	8

Maximum levels of gamma radiation reported were 20 mr/hr on PR containers, 3 mr/hr at process hoods, and 5 mr/hr on S.C.

. 234-5 Building

General Statistics

	January	February	1950 To Date
Special Work Permits	158	169	327
Routine & Special Surveys	321	369	690
Air Monitoring Samples	1016	1246	2262

Air Sample Results

Location	Number Taken	Number Above 10 ⁻¹² µg Pu/co	Maximum pg Pu/cc	Remarks
234 Operating Section	253	101	1.7x10 ⁻⁸	SWP Work - inside Hood 6
235 Operating Section	211			plywood airlock. Glove change Hood 22.
Technical Control	263	36	2.9x10-11	Leaking drain-contamination
General	361	7	$1.9x10^{-12}$	in Room 143.
Ducts after primary filter 26 inch vacuum line 10 inch vacuum line Stack Breech	66 22 22 48	45 22 0	2.7x10 ⁻⁹ 9 4x10 ⁻¹² <10 ⁻¹³	

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Merimum (estimated)

234 Building - Operating Section

Eight incidents of contamination spread occurred within process rooms with an associated 29 floor spots found in adjacent corridors and rooms. One instance of skin contamination occurred and was readily cleaned. Ten major maintenance jobs involving work in Zone IV or on process lines were completed with contamination generally confined to the work area and protective apparel.

235 Building - Operating Section

Contamination was well controlled with no contamination spread in the process rooms or detection of contamination in adjacent corridors and rooms reported. One instance of skin contamination occurred and was successfully cleaned. One unusual incident occurred when the inlet filter of hood 14 was ignited during maintenance repair work and was finally extinguished by removal and submersion in water. No air or surface contamination was found as a result of the incident.

Control Laboratories

	Number	rickimam (ob time odd)
Items contaminated and not regulated Skin contamination	243 4	3.5 µg Pu on sample carrier .07 µg Pu
Laboratory floor contamination	29	7 µg Pu Room 149, leaking sink trap
Corridor floor contamination	26	.7 pg Pu

Number

A near serious incident occurred during work in a dry box in Room 134 when a glass sliver caused a puncture wound of the finger. No contamination was found on the glove or skin.

General Building

Five items, not regulated with respect to handling, were found contaminated, with a maximum of about 1.6 µg Pu reported on a Poppy in the Instrument Shop.





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The 300 Area

General Statistics

	January	February	1950 To Date
Special Work Permits	178	160	338
Routine & Special Surveys	184	226 -	410
Air Samples	130	177	307

Metal Fabrication Plant

Fifty-seven of eighty-nine air samples taken were above $5 \times 10^{-5} \mu g$ U/cc as follows:

Location	Number Taken	Number above 5x10 ⁻⁵ µg U/cc	Maximum Con	Conditions
Chip Recovery Railroad cars	22 5	17	4.1×10^{-3} 2.0×10^{-4}	Floor being swept. Unloading rods.
Furnace room Burn-out room	1	0	1.2×10^{-4} 2.0×10^{-5}	"A" Furnace operating.
Out-gassing furnace	ī	i	1.8 x 10 ⁻⁴	Air blowing through furnace.
Straightener	11	8	2.6×10^{-4}	Straightening "Pb" dipped rods.
314 Main room Miscellaneous	18 30	5 21	5.0 x 10 ⁻⁴ 3 2 x 10 ⁻⁴	Extruding. Hand count station - Extruder operating.

In Building 314, the extruder was operated for a short period requiring respiratory protection throughout the building. It was also necessary to impose a one hour time limit for the quenching operator due to the proximity of banks of rods.

Air samples taken during the unloading of oil treated rods indicated a substantial reduction in air contamination during this operation as compared with untreated rods. Ten high hand counts were all successfully reduced.

Associated Laboratories

Alpha contamination was reported on enclosed shipping papers and source buckets during the uncrating and canning of ten one-quarter gram Ra-Be sources. One high hand count was reported and no attempted reduction shown.

Technical Building

Continuous H.I. monitoring was provided during the removal of dry waste and





during sampling of sludge from a 200 Area waste tank. A total of fifty-six air samples was taken with a maximum of 3.8×10^{-11} µg Pu/cc reported, this was obtained in Room 55 during the removal of a hood. There were nine high hand scores recorded, all of which were reduced.

Cold Semi-Works Building

A total of thirty air samples was taken and all were below $5 \times 10^{-5} \, \mu g \, \text{U/cc}$.

Fifteen high hand scores were recorded and all were reduced. About 1,495 pounds of uranium have been discharged to the waste ponds and about 273 pounds to the 300 N crib.

Hand Score Summary

A total of 37,045 alpha and 39,402 beta hand scores was recorded. About 0.08% of the alpha and about 0 09% of the beta scores were high. Seventy per cent of the high beta scores were recorded in the 100 Areas.

14 2 1 5 3



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PERSONNEL METERS

Pencils

	100-B	100-D	100-F	<u>100-H</u>	E&N 200	200-W	300	Total	1950 To Date
Pencils Read	8,911	9,539	13,226	9,171	16,097	24,214	32,977	114,135	237,302
Single Readings (100 to 280 mr) Paired Readings (100 to 280 mr) Single Readings (Over 280 mr) Paired Readings (Over 280 mr)	16	15	31	10	25	49	60	206	417
	1	ı	0	0	0	1	0	3	9
	10	11	15	21	26	37	74	. 194	377
	ø	. 0	0	0	0	. 0	1	, 1	4
Paired Readings Lost	0	2	0	0	0	0	1	3	. 8

No significant pencil result was confirmed by the badge result. Investigation of lost readings indicated no possibility of an overexposure.

Badge Resume, Construction Areas

	200-W Redox	100-DR	Total	1950 To Date
Badges Processed Number Readings	110	1,582	1,692	2,795
(100 to 300 mrep) Number Readings	0	0	0	0
(Over 300 mrep) Lost Readings	0	0	. 0	0

The lost reading was due to badge lost in area.

Badges	100-B	100-D	101-P 100-F	100-H	200-E	R.R.T. 200-N	200-W	300	Total 1	1950 To Date
adges Processed umber Readings	1,606	1,911	2,326	1,762	1,910	496	3,415	5,864	19,290	38,844
(100 to 300 mrep) number Readings (Over 300 mrep) nost Readings	2	. 8	18	6	26	0	38.	144	242	480
	0	0	0 2	0 2	0	0	1.	1	2	11 11



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Investigation of the two badge results above 300 mrep showed that one was a defective film and the other, a reading of 535 mrep, occurred in the Metal Fabrication Plant covering a period of thirteen days.

Lost readings were accounted for as follows:

Badges lost in area	2
Recovered lost badge	l
Film packet lost in area	1
Stuck film	2
Lost in processing	1

Investigation of the above lost readings revealed no possibility of an overexposure.

Total	badges	processed	1950,	Operations	38,844
				Construction	2,795 41,639
				Total	41,639

In addition to the badge program, a total of 2,202 items of non-routine nature was processed during the month. The 1950 total is 3,907.

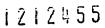
Slow Neutron Pencil Summary

	100-B	100-D	100-F	100-H	Total	1950 To Date
Number of pairs issued Number of significant readings Number of significant readings	62 3	95 4	102 11	253 31	512 49	904 86
(above 100 mrem)	0	0	0	0	0	0

All Health Instrument records stored in 303-F Building were moved to 3705 Building, and the 303-F Building returned to the "P" Division.

Badge and pencil coverage was provided for personnel working in the 101 Building at Hanford.







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CONTROL AND DEVELOPMENT DIVISION

Site Survey

Drinking water analyzed for alpha activity did not deviate from results of previous surveys. Beta activity from Na-24 averaged 163 and 65 puc/liter in samples taken from the Kennewick Highlands and from a Kennewick Standard Station. Small decreases in river activity were noted, resulting from a slight increase in the Columbia River flow.

Monitoring of radiation in air by fixed and ionization chambers remained normal. Measurement of active particles in the atmosphere did not deviate from last month's data at any locations except inside the 222-B laboratory where another small increase was noted; during February it was estimated that the average deposition rate of active particles was 0.47 particles/cubic meter.

Deposited activity on vegetation continued to decrease. I¹³¹ on vegetation at off-area locations including Ritzville, Ellensburg, Pasco, and Richland, approached a background level of 3 muc/kg. Corresponding decreases on the vegetation at all locations were observed. The maximum activity from I¹³¹ measured during the past month was 460 muc/kg sampled just outside the 200 West Area gatehouse.

With the cooperation of the H.I. Operational Division, a stack monitor for the P-10 project was set up in the 100-B Area. Samples are also being collected from the hood room in the P-10 Area. Formation of oxide in the P-10 furnace is being studied by sampling air directly from a thermocouple well of the furnace.

Geology

Activity levels in the two contaminated areas of the water table as measured in samples from wells 361-B-1, 361-B-9, and 241-T-361, remained at about the same levels as previously reported. A special analysis of a large sample from 241-T-361 indicated that most of the activity was due to ruthenium with small amounts of zirconium and rare earths. This analysis gave essentially the same result as a similar one taken from 361-B-1 during 1948.

The three wells adjacent to the 201-B crib, which receives the 224-B wastes, were cleaned out and despend from 150 to 153 feet to determine if activity had penetrated to that depth. No activity was detectable on rough field checks, and the samples are now being analyzed in the laboratory. Well 224-B-4 which was originally drilled to water was also cleaned and deepened to 278 feet so that more nearly representative samples can be obtained.





Meteor	logy	Number	Percent
	Forecasts	Made	Reliability
•	Production Forecasts	84	75•7
	24-hour forecasts	56	82•9
,	Special forecasts	7	85.7

The average temperature for the month was 30.7 degrees which is 4.9 degrees below normal. This low figure was caused by the extreme cold on the first three days which averaged 12 degrees below zero. Minimum temperature on these three days were -23, -21, and -23 degrees. The maximum temperature was 63 degrees on the 25th. The range of 86 degrees between maximum and minimum was the greatest ever experienced at the Meteorology tower. Precipitation totaled 1.06 inches including 3.1 inches of snow.

Bioassay

During February, 512 urine samples were analyzed for plutonium. The average activity for the blank urine samples was 0.04 dis/min. The average yield for spiked urine samples was 86%. Six samples exceeded the detection limit of 0.33 dis/min; these are being resampled. The three high samples reported last month are still in process. During a short interval period in January, twelve sets of urine samples were not accepted because of a low yield on the spiked urine samples. The yields varied from 30% to 58%. No confirmed specific cause can be attributed to these particular low yields. The urine samples rejected are to be resampled. Contrary to previous preliminary investigations, it was found that varying quantities of urine salts in urine apparently affect the recovery yields. This effect is under further study. The current TTA procedure has been revised to cope with high salt content in urine by introducing a double lanthanum fluoride precipitation. Since the introduction of the reprecipitation stop, yields averaged about 92%.

Four hundred and fifty-two urino samples were analyzed for beta emitters. Four samples were greater than the reporting level of 10 c/m and are being resampled.

One hundred and sixty-two urine samples were analyzed for uranium by the fluorophotometer method. The maximum individual result was 130 $\mu g/liter$ measured in a sample from an employee in the machining operation. Another sample containing 106 $\mu g/liter$ was taken from a member of the inspection operation.

One hundred and fifty-six urine samples were analyzed for the P-10 project. Eleven of these samples were above the background of the analysis, with four of the high samples coming from one individual. Analysis of a soap handwash indicated a value below background. However, an analysis of an alcohol handwash indicated 2.3 µc/liter. Analysis of the digested portion of a laboratory coat used in the laboratory indicated about 0.08 µc/sq.ft. of laboratory coat; this value expressed in terms of the digested solution was 80 µc/liter.





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Methods Development

Attempts to electrodeposit plutonium uniformly on the end of a small steel rod 3/32 inches in diameter (surface area 4.5 sq. mm.) gave promising results but further work is needed for consistent results and higher yields. If this method of electrodeposition can be successfully applied, a greatly increased sensitivity for detection of plutonium by NTA film can be obtained. Preliminary data on use of the electrodeposition method for plutonium as set up in the Bioassay laboratory indicated yields on spiked samples slightly better than 80%.

Further work on developing techniques for track plate study continued. Small sources of tritium, S-35, and C-14 were exposed to NTB₂ film during a study of this film. Although cleancut tracks were observed for Pu²³⁹, questionable tracks or none at all were noted for the other is topes with present developing techniques.

An experimental program has been started to evaluate the K^{40} content of vegetation in this area. This will be evaluated by measuring the total potassium in various types of vegetation using a calibrated spectrophotometer.

Work continued on ether extraction analyses of air filter papers on a reduced scale as considerable counter difficulties were experienced the past month.

Yields were somewhat lower than those obtained last month; there is no apparent assignable cause for the slight decrease in yields.

Methods Control

Preliminary studies indicated no fatigue effect on the low background alpha counters for activity below 20 dis/min. Better control methods to insure uniform operation of these counters are being initiated by adding additional control tests. The Tracerlab mica window tube under test indicated good operation within statistical counting errors. At counting rates up to 3500 c/m, negligible fatigue effects were observed; the effective geometry of this tube is slightly less than the standard mica window tubes used, and is directly an effect of a recessed window common in Tracerlab tubes.

Some revisions in the ether extraction of water samples for plutonium and uranium have resulted in more consistent analyses, although the yields have only increased slightly. A new procedure for water analysis has been tested, and results indicated 100% yields for alpha analysis, and about 90% yields for the beta analysis. This procedure is to be further tested by turning over this process on a limited scale to laboratory assistants. Investigation of analyses of 12-liter water samples revealed possibilities of gross contamination which could have accounted for occasional erratic results; the procedure was revised and recent data indicated a definite improvement. Investigation of inconsistent results by the fluorophotemeter method indicated accumulation of moisture on the principal components of the unit; this is being corrected. A sample of







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water containing l uc/ml of tritium was received from Dr. Brues of the Argonne National Laboratory, and analyzed by the acetylone method. The results indicated that previously reported values were 76% of the standard. Results will be corrected by this amount in the future.

A summation of work performed follows:

Laboratory	No. of Analyses
Vegetation	980
Water	1,511
Solids	213
Fluorophotometer	422
P-10	156
Miscellaneous	86
Total	3,368
Counting Room	
Beta measurements	3,558
Alpha measurements	3,886
Control points	2,208
Decay curve points	1,082
Absorption curves	23
Total	10,757

Physics

Work is continuing on measurements with high pressure ionization chambers and with a lucite-moderated BF₃ counter. The latter is being used in attempts to study methods of measuring intermediate energy neutrons.

A possible method of making measurements on low energy beta radiation is being investigated. The process is that of counting the low energy X-rays produced by the beta rays with a thin window argon-filled geiger counter. The estimated efficiency is quite low, being of the order 0.01%, but it may be sufficient on concentrated samples.

Some measurements were made with step wedge absorbers of gold and aluminum to help determine whether beta or garma radiation was causing the dark windows on film badges of workers in the 234-5 building. First results indicate a garma ray with an energy of about 100 KeV or less.

Industrial Hygiene

A study was made of exposures to nickel carbonyl in the 234-5 building. This study included a survey of the process as well as sampling of the workroom atmosphere.

The study of general atmospheric contamination was completed with the exception





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of the analytical work on the most recently acquired samples. A report covering this study will be submitted when the data has been compiled and analyzed.

Instrument Development

A successful instrument for qualitative monitoring of surface contamination for the P-10 project was built following tests performed by the Methods group. The detector is a windowless methane flow proportional counter equipped with a gasket around the sensitive area to exclude air from the counting volume.

The combined alpha-beta proportional counter design and circuit work was completed, and one pilot instrument is being built. This instrument will measure either alpha or beta radiation from a sample without interference from the presence of the other.

Bismuth-coated screen cathode geiger counters were obtained for counting I¹³¹ deposited in sheep thyroids. They proved to be five times as efficient as copper wall tubes for counting these low-energy gamma rays. A limiting factor in extending the lower limit of detoctable iodine will be the relatively high background of about 200 c/m per tube.

The high pressure ionization chamber was also used to check a sheep thyroid which contained an estimated one microcurie of I^{131} . A reading of 7 x 10-13 amperes was obtained with an observed background of 2 x I^{0-13} amperes.

The portable BF_3 counter progressed to the construction stage. The counting rate meter was improved so that it was linear up to 100,000 c/m. When used with a special small counter it gave 0.7 c/m per nv.

Calibrations

	Number of Rout		
RADIUM CALIBRATIONS	January	February	1950 To Date
Fixed Instruments Gamma	<u>390</u>	<u>343</u>	<u>733</u>
Portable Instruments Alpha Beta Gemma (Redium) X-ray Scanning Noutron Total	240 434 749 3 88 1,514	228 452 722 3 <u>66</u> 1,471	468 886 1,471 6 <u>154</u> 2,985
Personnel Meters Beta Gumma (Radium) X-ray Neutron	973 6,711 6,412	130 7,802 3,306 11,238	1,103 14,513 9.718 25,334
GRAND TOTAL	16,000	13,052	29,052



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BIOLOGY DIVISION

Analyses Group

1. Plutonium Analysis in Tissues

The required equipment for the analysis of the "chronically" fed rats has been purchased and assembled. Analyses will be started next month.

2. Adsorption of Plutonium on Surfaces

No progress.

3. Chromatographic Procedures

No progress.

4. Radioactivity in Carcasses

Methods for the chemical separation of Ra in a form suitable for counting are currently being investigated. Two methods are under study: The first involves the separation of the alkaline earths from the dissolved ash with a carbonate precipitation, followed by a separation of Ra from Ca with a Pb chromate precipitation in the presence of acetate ion and finally the removal of the lead carrier with H₂S. The second involves the separation of Ra from the alkaline earths with ion column techniques. Yields of approximately 60 per cent have been obtained with the first method. The second method has not been tested to completion.

5. Analyses of Active Particles

No progress

6. Composition of Effluent Water

Analytical work on a 2 year cld algae sample from 107 F was started. Investigations indicate Fe-59, and Pml47 are the prime contaminants. The finding of Pml47 is new and unexpected. Unless fission products escaped into the 107 F tasin in significant amount, it must have grown from the decay of Nil47. This reaction does not appear to have been reported previously in the water.

7. Determination of Natural Background

No progress

8. Alpha and Beta Analyses of Organic Materials

Experimental work was done on three procedures for the analysis of Il31 in







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sheep thyroid. A simple digestion in dilute NaOH followed by plating and counting gave the highest yields and most reproducible results.

The effect of excessive amounts of potassium on the rare earth analyses was investigated. Despite the possibility of a soluble potassium, rare earth fluoride salt, no loss was experienced.

The possible loss of Ru during wet ashing of vegetation was studied. Samples were investigated. Considerable loss was experienced indicating new methods are required. Investigations are continuing.

Aquatic Biology Group

1. Effect of Pile Effluent on Aquatic Life

The developmental rate of the chinook salmon fry in the monitoring test is increasing with slightly warmer water temperatures. A disease (presumably bacterial) continues to cause abnormally high mortalities in all groups, but fortunately has not reached the catastrophic proportions encountered on similar fish at the University of Washington and some other hatcheries in the state.

With the increased developmental rate the specific activities of the young fish have slightly increased. They are currently about 10 times that of the water. It was of interest to note that the specific activity of salmon fry in uncooled 5 per cent effluent was nearly twice as much as that in cooled effluent.

2. Biological Chains

Loss of appetite during cold weather by the yearling trout being held in 5 per cent effluent and fed a diet containing algae from the 107 Basin continues to depress the specific activity of these fish. Fish not receiving the contaminated diet are now less active by a factor of only 2.

3. Radiobiological Survey of the Columbia River

Field collection was inhibited during the first part of the month by ice along the shore line and fluctuating river levels, but was facilitated during the last part by lower water levels. The specific activity of the water and of all aquatic organisms sampled remained at approximately the same level as found during January. The highest specific activity found in fish was in the scales of a sucker $(0.2 \times 10^{-3} \, \mu c/g)$, while the highest among organisms collected was found in plankton $(6.1 \times 10^{-3} \, \mu c/g)$.





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Biochemistry Group

1. Collection and Analysis of Active Particles

A report is in process.

2. Deposition in Lungs of Active Particles

One rabbit is being exposed to stack gas inhalation.

3. Pathology of Active Particles

About 60 autoradiographs of frozen lung sections of 2 rabbits exposed to stack gas inhalation have been examined. The radioactive particles found range in size from 5 to 100 microns approximately. A few of these particles appear to be lodged in the alveoli, but the majority are present either in interstitial tissue or are off the tissue completely.

In order to avoid dislodging the radioactive particles from their original location, NTB stripping film and NTB slide will be used in future autoradiographs.

5. Gestro-intestinal Absorption of Plutonium

The oral administration of plutonium to 5 male and 5 female rats is proceeding without incident.

Botany Group

1. Separations Area Control Plot (200 East R-3 Danger Zone)

Arrangements have been made to grow Russian thistle and alfalfa plants in this area during the growing season of 1950.

2. Agricultural Field Station

Thirty soil samples taken from the treatment plots of the station averaged $2 \times 10^{-5} \, \mu\text{c/g}$.

The drilling of a well for control water was terminated at a depth of 607 feet.

3. Use of Algae for Removal of Radioactivity from Pile Effluent Water

The blue green algae Nostoc growing in liquid culture continues to disperse long half-life isotopes in pile effluent through the new growth.



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Escherichia coli grown on culture media which contains pile effluent (0.1 $\mu c/cc$) produce more than the normal number of dissociations or possibly mutant forms. This fact may be of significance in the ability of these micro-organisms to concentrate radio-active elements.

4. Translocation of Radioelements in Plants

In preliminary observations it was noted that oats, wheat and rye grown in liquid culture prepared from pile effluent concentrated activity from 5 to 60 times. Roots were about 2 to 6 times more active than plant tops.

Physiology Group

1. Physiological Response of Animals Intubated with Active Particles

Compilation of details of construction, air conditioning requirements and choice of subjects for the proposed project dealing with active particles is being continued.

2. Techniques in Autoradiography

NTB plates were demonstrated to be the material of choice for the autoradiography of thyroid sections containing I¹³¹ in amounts expected in local experiments.

A faint autoradiograph was obtained on sheep # 146, fed 0.5 microcurie I^{131}/dey for 160 days.

Preliminary data on the blood picture of normal sheep are being collected. Deviations from the normal human are not pronounced.

Zoology Group

1. Biological Monitoring

Recent surveys indicate that losses (presumably due to the cold wave) of quail at collection stations were greater than 50 per cent and at some locations may be near 100 per cent. Losses of rabbits, waterfowl and larger upland fowl were significant, but will not complicate adequate sampling.

2. Toxicology of 1131

Phase II (141-N waste disposal system) of the animal laboratories was accepted after changes were made in the design. With close attention the unit may give satisfactory service. Unless unforeseen difficulties arise the feeding of I¹³¹ will be started within the next 30 days.





Routine procedures for feeding, bleeding, and thyroid counting of sheep have been developed and with some minor adjustments will be adopted. Suitable counting equipment for sheep in the higher feeding levels has not been completely developed.

Five hematological parameters and eight to twelve blood chemistry parameters will be routinely taken on the sheep.

Complete radioanalysis of thyroid tissue of the 180 lb. Eampshire ewe agreed very well with that of two similarly fed ewes sacrificed earlier. The equilibrium I^{131} activity has been confirmed as very nearly five times the daily oral administration.

GENERAL ACCOUNTING DIVISION

FEBRUARY 1950

GENERAL

Considerable time was spent in the preparation of an Appendix C to the Prime Contract. This appendix covers in detail all employee benefit plans, and all policies relative to travel and living allowances. Methods of payment in connection with these plans and policies were covered together with the resultant reimbursement from the government.

Assistance was rendered to all General Divisions in the preparation of fiscal year 1952 budget estimates and revisions of 1951 estimates covering within-division, construction, research and development, and balance sheet budgets.

Hanford Works and Nucleonics Department Financial Statements for the month of January were completed and distributed on February 16, and February 21, 1950 respectively. General Divisions Operating Reports covering January operating costs were completed on February 15, 1950.

Advances from AEC remained at \$4,000,000 at the month end. Items comprising the balance in the advance account as of February 23, 1950 compared with those of January 31, 1950 are detailed below:

and the second s	January 31	February 28
Cash in Bank - Contract Accounts Salary Accounts Travel Advance Funds Advances to Subcontractors Cash in Transit	\$ 3 178 952 55 000 50 000 300 000 416 048	\$ 3 405 716 50 009 50 000 300 000 194 284
Total	\$ 4 000 000	\$ 4 COO DOO

Employees and Payroll Employees on Payroll at beginning of month Additions and transfers in Removals and transfers out Transfers from Weekly to Monthly Payroll Transfers from Monthly to Weekly Payroll Employees on Payroll at end of month	Monthly Totel Payrol 7 434 1 633 99 9 (68) (8) 7 (1 7 465 1 640	Payroll 5 801 90 (60) (7)
Employees on Payroll at end of month Manufacturing Design and Construction Community Other Total	January 3 174 547 731 2 982 7 434	February 3 170 557 728 3 010 7 465
Overtime Payments Weekly Paid Employees Monthly Paid Employees Total	\$28 910 2 291 (1) \$31 201	\$33 270 4 818 \$36 088
Number of Changes in Salary Rates and Job Classifications	637	396
Gross Amount of Payroll Manufecturing Design and Construction Community Other Total	\$1 116 720 186 460 231 033 942 785 \$2 476 993 (3)	\$1 099 254 197 086 223 443 941 590 \$2 461 373
Annual Going Rate of Payroll Manufecturing Design and Construction Community Other Total	2 391 787 2 895 571 11 859 744	\$14 127 322 2 492 219 2 862 508 12 030 548 \$31 512 597
Average Salary Rate Per Hour (4) January Menufacturing \$2.017 \$2.654 Design and Construction 1.561 2.748 Community 1.766 2.322 Other 1.638 2.527 Total \$1.817 \$2.582	\$2.127 \$2.015 \$2 2.048 1.578 2 1.875 1.763 2 1.846 1.637 2	nthly Total .654 \$2.125 .726 2.021

(1) Payments cover period from 16th of previous month to 15th of current month except overtine payments to Design and Construction Division employees which cover period December 16, 1949 to December 31, 1949

(2) Payments cover period from 16th of previous month to 15th of current month except overtime payments to Design and Construction Division employees which cover period January 1, 1950 to January 31, 1950

(3) Includes 4 weeks in case of weekly paid employees (4) Includes shift differential and isolation pay. Ex

(4) Includes shift differential and isolation pay. Excludes overtime premisms, commissions, Suggestion Awards, etc.

Employee Plans	•	
Pension Plan	January	February
Number participating at beginning of month	6 562	6 708
New participants and transfers in	179	41
Removals and transfers out	<u>(33</u>)	(31)
Number participating at end of month	6 708	6 718
% of eligible employees participating	93.4%	94.5%
Employees Retired	February	Total to Date
Number	2	114
Aggregate Annual Pensions Including		
Supplemental Payments	\$160	\$27 956*
Amounts contributed by employees retired	\$401	\$10 932
*Amount before commutation of pensions		
in those cases of employees who		
received lump sum settlement		
Group Life Insurance	January	February
Number participating at beginning of month	5 808	5 796
New participants and transfers in	38	35
Cancellations	(17)	(23)
Removals and transfers out	<u>(33</u>)	(56)
Number participating at end of month	5 796 (1)	5 752 (2)
% of eligible employees participating	77.5% (1)	77.7% (2)

- (1) Excludes 34 pensioners who were granted lump sum pension settlement and who are paying premiums at Hanford Works
- (2) Excludes 36 pensioners who were granted lump sum pension settlement and who are paying premiums at Hanford Works

Group Life Insurance Claims	February	Total to Date
Number of claims	1	.37
Amount of insurance	\$3930	\$157 747
Group Disability Insurance (1) Personal Coverage Number participating at beginning of month New participants and transfers in Cancellations Removals and transfers out Number participating at end of month	January 36 -0- (7) -0- 29	February 27 -0- (7) -0- 22
Dependent Coverage		
Number participating at beginning of month Additions and transfers in Cancellations Removals and transfers out Number participating at end of month	19 -0- (6) -0- 13	13 -0- (4) -0-

Group Disability Insurance (1) (continued) Claims (2)	January	February
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	21	11
Deily Hospital Expense Fenefits	23	. 13
Special Hospital Services	20	11
Surgical Operations Benefits	19	12
Dependent Denefits Paid	-	
Taily Hospital Expense Penefits	16	6
Special Hospital Services	16	6
Amount of Claims paid by insurance company:		
Employee Renefits	\$3 664	\$2 099
Dependent Penefits	645	502
Total	\$4 309	\$2 601
Premiums		
Personal - Employee Portion	\$ 49	\$ 37
- Company Portion	30	23
- Total	\$ 79	\$ 60
Dependent- Employee Portion	\$ 12	\$ 8
- Company Portion	1	1
- Total	\$ 13	\$ 9
Grand Total	\$ 72	\$ 65

- (1) Group Disability Insurance Plan was discontinued November 30, 1949.

 January and February statistics cover employees who were participating in the Group Disability Insurance Plan but who were not actively at work on December 1, 1949, and therefore were not eligible to participate in the new Group Health Insurance Plan.
- (2) Statistics are for claims paid during the month and do not necessarily indicate that claims were incurred during the month.

Group Health Insurance (1)		
Personal Coverage	January	February
Number participating at beginning of month	6 942	6 913
New participents and transfers in	39	31
Cancellations	(20)	(1)
Removals and transfers out	(48)	(52)
Number participating at end of month	6 913	6 891
% cf eligible employees participating	93.5%	94.0%
Dependent Coverage		
Number participating at beginning of month	4 618	4 599
Additions and transfers in	23	21
Cancellations	(18)	(2)
Removals and transfers out	(24)	(23)
Number participating at end of month	4 599	4 595

Group Health Insurance (1) (continued)		'
Claims (2)	January	February
Number of claims paid by insurance compa	ny:	
Employee Renefits		.
Weekly Sickness and Accident	49	64
Daily Hospital Expense Benefits	86	97
Special Hospital Services	96	103
Surgical Operations Benefits	49	. 64
Dependent Renefits Paid		
Daily Hospital Expense Benefits	123	181
Special Hospital Services	137	204
Surgical Operations Benefits	69	106
Amount of claims paid by insurance compa	ny:	
Employee Benefits	\$ 9 986~	\$13 315
Dependent Renefits	12 404	18 912
Total	\$22 390	\$32 227
Premiums		
Personal - Employee Portion	\$14 863	\$14 816
- Company Portion	7 162 (3)	7 139 (3)
- Total	\$22 025	\$21 955
Dependent- Employee Portion	\$12 877	\$12 866
- Company Portion	10 256 (3)	10 247 (3)
- Total	\$23 133	\$23 113
Grand Total	\$45 158	\$45 068
	<u> </u>	

- (1) Group Health Insurance Plan was made effective December 1, 1945.
- (2) Statistics cover only claims paid and not all claims incurred during the month.
- (3) Gross company cost before dividend.

Vacation Plan

Number of employees granted permission to defer one week of their 1950 vacation to 1951

		February		Tota	al to Da	tə
	Woekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	23	9	32	43	10	53
Design and Construction	0	ĺ	ı	.0	ı	ĩ
Community	5	ı	6	6	ı	7
Technical	8	5	13	8	5	13
Plant Security & Services	25	5	30	70*	18	88*
General Accounting	2	Ö	2	2	0	2
Total	<u>63</u>	21	84	129*	35	164*

*Total to Date reduced by one cancellation

Annuity Certificates (For duPont Service)	February	Total to Date
Number issued	اً.	69

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	Employee Plans (continued)										
	U. S. Savings Bonds	М	fg.		D&C	Con	m'y	01	ther	ī	otal
)	Number participating at	===	<u> </u>		200					-	
1	beginning of month	ı	746		248		342	1	458	3	794
	New authorizations	_	14		- 8		6		29	_	57
	Voluntary cancellations		(28)	,	(1)	1	(9))	(20))	(58)
	Removals and transfers ou	t	(13)		(2)		(1)		(15)		(31)
	Transfers in		9		ì		`4		` <u>5</u>		19
	Number participating at	_						_		-	
	month end	1	728		254		342	1	457	3	781
	% participating		.5%		.6%	47	.0%		5.4%	Ī	0.6%
	Bonds issued		7/		- /-				,	-	•
	Mcturity Value	\$107	375	\$16	125	\$18	675	\$50	700	\$222	875
	Number		866		26 8	•	336		457		927
	Refunds issued		31		1		8		24	_	64
	Revisions in authorization	ns	22		1		4		30		57
	Annual going rate of dedu										
	G.E Employees Savings										
	and Stock Bonus Plan	\$725	857	\$103	539	\$131	981	\$578	588	\$1 539	965
	General Electric	¥1->	- ,	4 -	,,,	, -				, , ,	
	Savings Plan	\$229	565	\$ 35	825	\$ 41	869	\$159	688	\$ 466	5 947
	Total	\$955	422	\$139	<u>364</u>	\$173	850	\$738	276	\$2,000	912
		1		<u> </u>		<u></u>					
	Suggestion Awards						Febr	mary		rotal t	to Date
	Number of awards							-0-	-	47	
	Total amount of awards							-0-		\$6 99	
_	To all the out of the last							•		4	
)	Employee Sales Plan							ruary			
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\mathbf{C}	Employee Sales Plan			Tot		A	Febr Majo	ruary			fic
C	Employee Sales Plan Certificates Issued			19	14	Aj	Febr Majo	uary or ances		Traf Applia	fic inces
\mathbf{C}	Employee Sales Plan			19		Aj	Febr Majo	ruary or ances		Traf Applia	fic
C	Employee Sales Plan Certificates Issued Certificates Voided			19	14	<u></u>	February Feb	ruary or inces	······································	Tref Applia	fic nces
C	Employee Sales Plan Certificates Issued			19	14		February Major Splice S	ruary or ances o		Tref Applia 16	fic nces 9
C	Employee Sales Plan Certificates Issued Certificates Voided Salary Checks Deposited			19	14		February Major Splice S	ruary or ances o		Tref Applia 16	fic nces
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)	Certificates Issued Certificates Voided Salary Checks Deposited Richland Branch - Seattle National Bank North Richland Area Office Seattle First National Richland Branch - National Richland Branch - National of Commerce Out of state banks (Schen Total *Week ended 1-29-50 **Week ended 2-26-50 Special Absence Allowance Re	e - Bank Bank catady	r sto	19 1	14	Weel 80	January Major	ruary or ances o o o o o o o o o o o o o o o o o o o		February Port Per Property Port Property Port Property Port Port Port Port Port Port Port Port	fic ences 9 10 ery fonthly 829 7 63 3 902
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	Employee Sales Plan Certificates Issued Certificates Voided Salary Checks Deposited Richland Branch - Seattle National Bank North Richland Area Office Seattle First National Richland Branch - National Richland Branch - National of Commerce Out of state banks (Schen Total *Week ended 1-29-50 **Week ended 2-26-50 Special Absence Allowance Re Number submitted to Pensi	e - Bank l Bank ectady quests on Bon	r sto	19 1	14	Weel 80	January Market	ruary or inces o o o o o o o o o o o o o o o o o o o		February Port Port Port Port Port Port Port Port	fic inces 9 10 lery Monthly 829 7 63 3 902
	Certificates Issued Certificates Voided Salary Checks Deposited Richland Branch - Seattle National Bank North Richland Area Office Seattle First National Richland Branch - National Richland Branch - National of Commerce Out of state banks (Schen Total *Week ended 1-29-50 **Week ended 2-26-50 Special Absence Allowance Re	e - Bank l Bank ectady quests on Bon	r sto	19 1	14	Weel 80	Jenu Jenu Jenu Jenu Jenu 19	ruary or ances o o o o o o o o o o o o o o o o o o o		February 19	fic ences 9 10 ery fonthly 829 7 63 3 902

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING		
Number of Employees	Jenuery	February
On Payroll at beginning of month	173	174
Removals and transfers out	(4)	(6)
Additions and transfers in	5	7
Number at end of month	174	175
Net increase (or decrease) during month	1	1
% of terminations and transfers out	2.3%	3.4%
% of absenteeism	3.04%	3.43%

Changes by division in number of Accounting Division employees during February were as follows:

General: Decrease of one employee

One transfer to Special Assignments

Accounts Payable: No Change

Cost: No Change

General Accounts: Decrease of one employee

One transfer to Plant Accounting

Plant Accounting: No Change

One transfer from General Accounts

One illness removal

Weekly Payroll: Decrease of two employees

Three new hires . One transfer to Construction - Security Two terminations Two illness removals

Monthly Payroll: Increase of one employee

One transfer from Plant Security & Services

Special Assignments: Increase of four employees

Two new hires

One transfer from Air Conditioning Dept., Bloomfield, New Jersey One transfer from General Accounting - General

Budgets: No Change

Injuries	January	February
Major	0	0
Sub-major	0	0
Minor	1	0

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PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Number of Accounting Division employees as of February 28, 1950 were as follows:

	Number	of Emp.	Loyees
	Non-Exempt	Exempt	Total
General	3	3	-6
Accounts Payable	15	ı	16
Cost	9	ı	10
General Accounts	14	l	15
Plant Accounting	22	3	25
Weekly Payroll	71	5	76
Monthly Payroll	15	2	17
Special Assignments	1	-6	7
Budgets	_ 2	<u>_1</u>	<u>3</u>
Total	152	<u>23</u>	175

Non-exempt employees may be summarized as follows:

	Number	Number as of	
Classification	1-31-50	2-28-50	
Accounting A	3	3	
Accounting B	l	l	
Accounting C	l	2	
Accounting D	5	5	
Business Graduate	4	5	
Clerical Working Leader	5	5	
Cost Clerk A	ĺ	5 5 1 1	
Cost Clerk B	1		
Cost Clerk D	2	2	
Field Clerk B	0	ı	
Field Clerk C	3	1 .	
General Clerk A	23	25	
General Clerk B	42	43	
General Clerk C	21	19	
General Clerk D	10		
General Clerk E	1	9 1	
Office Machine Operator B	16	16	
Secretary B	1	ı	
Steno-Typist A	2	2	
Steno-Typist B	1+	6	
Steno-Typist C	2	l	
Steno-Typist D	. 5	2	
Total	<u>153</u>	152	

Open employment requests as of February 28, 1950 were as follows:

Business Graduate

	January	February
Accounts Payable * Balance at Beginning of Month Vouchers Entered Cash Disbursements Cash Receipts	\$ 74 319 885 765 904 258 Dr. 409	\$ 56 235 2 091 175 2 107 405 Dr. 219
Balance at end of month	\$ 56 235	\$ 40 224
Number of Vouchers Entered Number of Checks Issued	1 588 1 086	1 374 976
Number of Freight Bills Paid Amount of Freight Bills Paid	225 \$ 2 958	201 \$ 3 295
Number of Purchase Orders Received Value of Purchase Orders Received	818 \$ 148 776	750 \$ 122 566
Cash Disbursements Community Design & Construction General Manufacturing	\$ 35 325 1 430 973 2 847 316 352 920	\$ 48 778 1 000 140 3 938 275 420 874
Total	\$ <u>4 666 534</u>	\$ <u>5 408 067</u>
Material and Freight Lump Sum and Unit Price Subcontracts CPFF Subcontracts	\$ 711 566 363 105	\$ 607 297 45 524
Labor Others Payrolls (Net) Payrolls Taxes U. S. Savings Bonds General & Administrative Expenses Miscellaneous Pension Plan - Employers Cost	558 156 294 931 1 710 614 244 515 232 439 200 000 351 208	670 740 270 603 1 673 095 317 648 157 776 200 000 270 758 1 194 626
Total	\$ <u>4 666 534</u>	\$ <u>5 408 067</u>
Cash Receipts Community Design & Construction General Manufacturing Total	\$ 98 538 35 694 4 497 023 15 289	\$ 89 379 30 398 5 501 000 14 160
10041	\$ <u>7 979 277</u>	\$ <u>5 634 937</u>

^{*} General Divisions Only.

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•	January	February
Detail of Cash Receipts	# (0.10E	\$ 67 915
Hospital	\$ 62 407	7 948
Scrap Sales	18 849 5 362	6 336
Miscellaneous Accounts Receivable	619	1 494
Educational Program	619	563
Employee Sales Refunds from Vendors	6 704	4 245
Rents	98 391	101 465
Telephone	11 563	10 105
Bus Fares	13 229	11 416
Sales of Plant & Equipment	130	350
Advances from A.E.C.	4 395 988	5 421 048
Final Settlement from Great Lakes		·
. Carbon Co.	14 819	-0-
Refund from Metropolitan Insurance Co.	14 890	-0-
All Other	2 974	2 052
		## /s. sss
	\$ <u>4 646 544</u>	\$ <u>5 634 937</u>
Number of Checks Written		•
Community	171	. 125
Design & Construction	163	150
General	1 086	976
Manufacturing	558	467
	<u> </u>	2 020
Total	1 978	<u>1 718</u>
Ponk Polance of Find of Month		
Bank Balances at End of Month Chemical Bank & Trust Company - New York	•	•
Chemical Bank & Trust Company - New York Contract Account	\$ 699 390	\$ 994 058
Seattle First National Bank - Richland	₩ ⁰⁷⁷ 37 ⁰	w .//4 0/0
Contract Account	1 967 807	1 881 310
U. S. Savings Bond Account	69 024	224 858
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	22 314	22 797
Seattle First National Bank - Seattle		
Escrow Account	39 871	64 471
Salary Account No. 3	5 000	-0-
National Bank of Commerce - Richland		
Contract Account - Manufacturing	447 080	479 126
Contract Account - Community	64 675	51 222
	\$ <u>3 365 161</u>	\$3 767 842
	-47 107 101	W. TOT CHE
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	\$ 13 114	\$ 12 903
Cash Advance balance outstanding	•	,
over one month*	100	987
Traveling and Living Expenses:		20.0/2
Paid Employees	11 104	20 069
Billed to Government	10 420	19 715
Balance in Variation Account at end of month	75 1001 5-	1. 257 Dm
month 2 2 1	15 4 004 Dr.	4 357 Dr.

^{*} General Divisions only.

ACCOUNTS PAYABLE

The number of Accounts Payable vouchers entered in February decreased 13% from January, the same percentage decrease that occurred in January from December.

There was a corresponding decrease in the number of freight bills paid in February. Total paid was 201 compared with 225 in January, or a decrease of 11%.

The number of new purchase orders received in February likewise decreased from 818 in January to 750 in February.

Total vouchers on hand at the end of February requiring additional supporting data before they could be considered complete decreased 15% from January. Details are below:

•	<u>January</u>	February
Number on hand- Paid Number on hand - Unpaid	269 782	111 <u>785</u>
Totals	<u>1 051</u>	<u>896</u>

Accounts Payable general ledger balance at February 28 was \$40 223.75, a considerable decrease from the balance of \$56 234.66 at January 31. Most of the open balance (96%) represents Accounts Payable items recorded in the current month which are not due to be paid. Details by months of the open balance are as follows:

October 1949	\$ 37.50 Dr.
November 1949	18.00
December 1949	379.64
January 1950	1 034.30
February 1950	38 559.31
Total	<u>\$40 223.75</u> Cr.

The number of incomplete purchase orders on hand applying to General Divisions as of February 28 decreased 12% from January. As of February 28, there were 1 029 orders on hand for which complete billing has not been received.

The number of vouchers on hand more than 50 days, either unpaid, uncollected red vouchers, or paid vouchers not yet completed with supporting documents, increased slightly over January. Details are as follows:

	On January 31		On February 28	
•	No.	Amount	No.	Amount
Unpaid Vouchers Uncollected Debit Vouchers Paid-Incomplete Vouchers	7 1 <u>17</u>	\$ 244 60 19 837	. 15 4 <u>12</u>	\$ 666 306 9 885
Totals	<u>25</u>	\$20 141	<u>31</u>	\$ <u>10 245</u>
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ACCOUNTS PAYABLE (Continued)

On February 13 all files pertaining to scrap sales were transferred to the General Accounts Section, where the auditing of the various documents pertaining to these sales will now be performed.

BUDGETARY CONTROL

During the first week of the month three employees were borrowed from other sections in order to assemble fiscal year to date data relative to the budgets for fiscal years 1951 and 1952.

Detailed work sheets were prepared showing actual costs for six months ended December 31, 1949 for use of all General Divisions in preparing fiscal year 1952 budget estimates and revising fiscal year 1951 budget estimates of within-division, construction, research and development, and balance sheet budgets. Distribution of these work sheets to division managers and division heads was made, together with a detailed letter of instructions, on February 8. All work sheets, except balance sheet budget work sheets, are scheduled to be received by March 13.

Considerable time during the month was spent in contacting personnel in the various divisions and assisting them in preparing their budgets.

Detail work sheets, which were prepared to record and control appropriation requests originating in General Divisions were completed and are being kept up to date daily by posting from various reports and other papers and documents as received.

∞ST

General Divisions Operating Reports were issued on February 15, 1950. Detailed report of Research and Development Costs was issued on February 23, 1950 and Summary of Costs Report was issued on February 24. 1950.

In order to provide better control, all items designated as Construction Work in Progress were transferred to the books of the division performing the work - either Manufacturing or Community. In the future, General Divisions will report only items which are being fabricated by the Technical Divisions (Technical Shops) and which are to be charged to Investment.

Allocation of charges from the 101 Area was discussed and a revised proration of Power Division charges was agreed upon whereby Technical Shops would be charged for heat only. A revised allocation of charges for Purchased Electricity was also settled upon.

Work is currently being performed at the Pasco warehouses by Surplus, Salvage and Scrap personnel for the Bureau of Federal Supply in connection with the sale of excess stocks. We have arranged to be notified of lator supplied in this connection and are charging this (together with an EE of 65%) to General Ledger account 15.14 - "Cost of Delivering Materials to Buyers". This account is to be credited with allowances received by AEC in connection with these sales.

COST (Continued)

Cost code revisions were accumulated and revised, code sheets printed, and distribution was made to all General Divisions and Manufacturing Accounting Divisions.

a complete analysis was made of the costs of each General Division and cost estimates for February were carefully prepared. Based on these estimates, liquidation rates and amounts were established for February so as to reduce or eliminate any year-to-date underliquidation. By following the same procedure in March, underliquidations will be entirely eliminated by March 31.

GENERAL ACCOUNTS

General Ledger Trial Balances were received from all Accounting Divisions with the exception of Atkinson-Jones on February 16. Hanford Works Financial Statements were completed on February 16 and Consolidated Financial Statements on February 21 excluding details of A-J accounts. Atkinson-Jones submitted a Trial Balance on February 28 and the Consolidated Trial Balance and Hanford Works Financial Statements were reissued to include A-J detailed information.

Advances from AEC remained at \$4 000 000.

The responsibility for scrap sales was transferred from the Accounts Payable Section to this Section. All sales of tract houses to date were analyzed and revenue collected on these sales was passed to the Atomic Energy Commission through Government Cost Transfers.

An audit of Scrap Sales was made during the month and the accounting methods in use were found to be satisfactory. A detailed report on this audit has been issued. A follow-up was made on the closing of the Stationery Sub-Store in the 703 Building. The accounting procedure for the pricing of withdrawals of stationery supplies individually and charging divisions for the exact amount of supplies withdrawn was completed and made effective March 1. Work is continuing on the audit of the Surplus, Salvage and Scrap Section activities.

MEDICAL ACCOUNTING

It is estimated that \$23 000 included in the Hospital accounts receivable balance of \$172 649 is uncollectible. This includes approximately \$12 000 recently refunded to Atkinson-Jones Co. to cover accounts uncollectible by them for which we were previously reimbursed by A-J.

All collection letters used by the Medical Accounting Section were reviewed and revised.

Out patient invoices numbered 9 263 and amounted to \$40 258; cash invoices numbered 5 424 and amounted to \$18 878; charge invoices numbered 3 839 and amounted to \$21 380. This is a decrease for the monthly period but is an increase on a daily basis.

In patient sales decreased from \$60 785 to \$55 504.

PLANT ACCOUNTING

Plant Statements for the six month period June 30, to December 31, 1949 were completed and issued on February 15.

February entries were prepared transferring from Unclassified Property in Service to appropriate Plant Accounts, Projects C-206 - Construction of "DR" and Project C-267 - Construction of 101 Area. Both of these projects were listed in the June 30. Statement as Unclassified Property in Service.

HW Instruction Letter No. 142 was issued providing a basis for determining proper distinction between items chargeable to cost and items chargeable to investment accounts. At present HW Instruction Letter No. 84 dealing with Appropriations and Budgets is being studied for the purpose of recommending revisions necessary for Plant Accounting purposes.

A preliminary copy of a Property Accounting Manual to be issued by the Atomic Energy Commission was received and reviewed by the supervisor of the Plant Accounting Section. Most of the provisions of this Instruction Manual are in accordance with understandings and practices now in effect.

A letter was written to the AEC requesting modification of certain requirements pertaining to poles, transformers and electric motors. If these recommendations are adopted, costs incurred in replacing the above items, exclusive of cost of the items themselves, will be charged to Operating Expense rather than to Plant Accounts.

PAYROLLS

Approximately 356 man hours were expended by Payroll Division in connection with the preparation of an Appendix C to the Prime Contract. A planned overtime schedule for four Monthly Paid payroll employees was necessary in order to prepare this work in draft form during the month of February.

The portion of the Appendix C, which was prepared by Payrolls, covered in detail all benefit plans and resulting payments to Hanford Works employees, the costs of which the company expects reimbursement from the Government. A concerted effort was made to include in the draft of the Appendix C all existing payroll pelicies and practices as well as anticipated revisions, modifications, and additions to such policies and practices.

* * * * * * * *

During the month of February there were 68 removals from Payroll of which 3 were removals due to lack of work, and there were 99 additions to the payroll, including 2 transfers from other units of the Company, resulting in a net increase of 31 employees on the payroll.

* * * * * * *

Wednesday, February 22, 1950, was an observed holiday at Hanford Works and Weekly Salary Checks for employees of the outer areas for week ended February 19, 1950 were delivered to the areas on Thursday, February 23, 1950 between the hours of 8:00 P.M. and 11:00 P.M. Salary checks for employees in Richland, North Richland, and Pasco were delivered to the division representatives in the usual manner on Friday, February 24, 1950.

* * * * * * * *

Under the General Electric Employee Savings and Stock Bonus Plan, 122 participating employees withdrew from the Plan 737 U.S. Savings Bonds having a maturity value of \$36,700. U.S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in January were delivered to employees on February 24, 1950. There were 744 U.S. Savings Bonds and 2,505 Custody Receipts distributed to employees. As of February 28, 1950, percentage of Hanford Works employees participating in the G.E. Employees Savings and Stock Bonus Plan and General Electric Savings Plan was as follows:

	Mfg.	D&C	Comm'y	Other	Total
G. E. Employees Savings and Stock Bonus Plan	50.1%	40.6%	41.9%	43-3%	45.8%
General Electric Savings Plan	13.0%	10.0%	9.7%	9.8%	11.1%
Both Plens	54.5%	45.6%	47.0%	48.4%	50 . 6%

Under the Group Health Insurance Plan, 385 claims for benefits by employees were forwarded to Metropolitan Life Insurance Company, during February and 578 checks were received from the Insurance Company covering payment of 402 claims submitted

PAYROLLS (CONT.)

by employees for benefits under the Plan.

* * * * * * * *

Approximately 47,478 items were addressographed in Weekly Payroll Division during February for other divisions at Hanford Works in addition to regular routine addressograph work.

* * * * * * * *

Permission to defer one week of their 1950 vacations until 1951 was granted by Division Managers in February to 63 Weekly Paid employees and 21 Monthly Paid employees. To date permission to defer one week of 1950 vacations until 1951 has been granted to 129 Weekly Paid employees and 35 Monthly Paid employees.

* * * * * * *

There were 31 time cards received late in Weekly Payroll during the month of February as follows:

Number of Time Cards Received Late
5 7 16 <u>3</u>

* * * * * * *

The Hanford Atomic Metal Trades Council submitted to Weekly Payroll Division 199 authorization cards for deduction of Union dues from salaries of employee members of four unions, as follows:

<u>Union</u>	Number
International Association of Mechinists, Lodge #1743	. 2
Instrument Craftsmen's Guild	66
International Union of Operating Engineers, Local #370 C	40
International Chemical Workers Union,	, •
Local_#369	91
Total	91 1 <u>9</u> 9

Deduction of Union dues from employee union members' salaries, for whom Payroll has received a deduction authorization, will be made from salary checks paid on the first pay day of each month. The initial deduction will be made from salaries paid on March 3, 1950. Checks payable to the individual unions covering collection of Union dues by Payroll deduction, and detailed lists supporting such deductions, will be forwarded to G. A. Foster, Business Representative, Hanford Atomic Metal Trades Council

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PAYROLLS (CONT.)

A schedule of employees who will become eligible for retirement, including optional retirement, through September 1, 1956 was prepared by Payroll Divisions for Employee and Community Relations Division. A total of 775 employees, 629 male and 146 female, were listed on the report according to date of birth. The report also included the following information on each employee.

- 1. Name
- 2. General Electric Continuous Service Date
- 3. Date of Birth
- 4. Effective Date of Group Life Insurance
- 5. Amount of Free and Additional Group Life Insurance Coverage at January 31, 1950

* * * * * * * *

Returns of Information at the source were filed with State Commissions in the States of New York, Massachusetts, North Carolina, Indiana, Colorado and Oregon. These returns involved 23 employees who were advised by letter the amount reported to each state and the date required by the state concerned for filing Individual Returns.

FLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - FEBRUARY 1950

SULLARY

There was one major injury in February making a total of one for the year to date and a frequency rate of 0.43.

There were three minor fires in the industrial areas with a total loss of \$54.00.

Volume of both Laundries remained approximately the same as January.

Mail volume again increased over previous months. Changes in layout and work space speeded handling.

Office machine repairs and service calls increased appreciably during the month. Volume of printing and duplicating orders decreased slightly.

The plant records inventory has been completed except for Classified Files.

Effective February 20, two new posts were placed in effect in the 200-West Construction Area. On February 27, the post at P-ll was extended to 24-hour coverage.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - FEBRUARY 1950

ORGANIZATION AND PERSCHNEL

Number of employees on payroll:	Beginning of Lonth	End of Month	Increase	Decrease
Staff	3	3		
Patrol and Security	574	579	5 (a)	
Safety & Fire Protection	150	149	in the second second	l (b)
Office Services (General Services, Clerical	212	219	7 (c)	
Services, and Records Control)	to the section of			
TOTALS	939	950	12	ı

NET INCREASE: 11

(a) - Patrol and Security

- 4 Rehired (Patrol)
- 1 New Hire (Security)
- 3 Returned from Leave of Absence (Patrol)
- 2 Removed from Roll due to Leave of Absence (Patrol)
- 1 Termination (Security)

(b) - Safety and Fire Protection

1 - Termination (Fire)

(c) - General Services

- 3 Rehired
- 1 Returned from Leave of Absence
- 1 Termination
- 3 Removed from Roll due to Leave of Absence

Clerical Services

- 16 New Hires
- 9 Transferred to other Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Hajor Injury	. 17
Accumulated Exposure Hours since last Major Injury	632,966
Major Injury Frequency Rate (start-up to date)	0.84

•	January	February	Year to Date
Major Injuries Sub-Major Injuries Minor Injuries Emposure Hours Major Injury Frequency Rate Major Injury Severity Rate Minor Injury Frequency Rate	0 7 334 1,204,881 0.0 0.0	1 2 279 1,124,885 0.89 0.011 2.48	1 9 613 2,329,766 0.43 0.0052 2.63

Major Injury No. 63

On February 11, 1950, at approximately 2:25 P.M.; an employee of the Naintenance Division working in the 105 Building, 100-H Area, sustained a laceration to the cornea of the right eye. The injured was repairing a leak in a gauge glass. After replacing the glass with a new one, he allowed the steam pressure to rise slowly over a period of fifteen minutes. During the inspection of this replacement with the intent of replacing the gauge guard, the glass suddenly exploded, knocking off his safety glasses and cutting his eye.

Sub-Major Injury No. 173

On February 2, 1950, at approximately 3:25 P.M., an employee of the Maintenance Division working in the 200-West Area received a deep laceration and chipped bone, distal phalanx of the right ring finger. Maintenance employees were moving a milling machine vertical head into position using an A-frame to carry the load. As the A-frame was being placed near the machine, a fluorescent light fixture suspended approximately seven feet above the milling machine would not clear the A-frame. The injured, while standing back of the cross carriage, placed his left hand on the machine table and with his right hand reached up to push the light fixture aside. He received an electric shock and was unable to pull his hand free of the light fixture. To get free, the injured threw his body weight and as his hand came away from the fixture, his right ring finger slid along the sharp upturned metal edge of the reflector causing the injury.

Sub-liajor Injury No. 174

On February 27, 1950, at approximately 2:40 P.H., an employee of the Transportation Division working at the 3000 Area lumber pile received a fracture to the right great toe when a piece of lumber fell on it. The injured was restacking lumber when the stripping was released allowing the overhanging pieces to fall. The injured was not wearing safety shoes.

Safety and Fire Protection (Contin)

100 Areas Activities

The 100-B Area Maintenance Division won the period award of the Maintenance Safety Derby.

An inspection tour was made with an H. I. Division Committee of all buildings and facilities used by their personnel in the 100-B Area. Conditions in general were found to be exceptionally good.

Arrangements have been made to control the traffic developing in the 100-D Area as a result of the new construction program.

A meeting was held at the request of the Transportation and Power Divisions to work out a plan for the protection of overhead and underground lines in the 100-D Area. Committee recommendations are being forwarded to the Transportation Division.

An inspection tour was made with an H. I. Division Committee of all Buildings and facilities used by their personnel in the 100-D Arca. Conditions in general were found to be exceptionally good.

A special inspection of equipment installations in the 108-F Building was conducted and the new elevator was accepted.

The bag lift elevator recently installed in the 189 Building presents a definite hazard near the top of the lift. The Power Division has agreed not to accept it until the hazard is corrected.

Specific safety steps for installation of special instruments in the 105-H Building have been recommended.

The foremanship training series instruction booklets have been received and the training course for all foremen in Minor Construction Division have been scheduled.

Conditions in the experimental section of the 101 Building have been taken up with Supervision and arrangements made to improve housekeeping and arrangement of equipment.

200 Areas Activities

There was one near serious accident and one sub-major injury in the 200-Mest Area during February. Nothing of serious consequence occurred in the 200-East Area.

An area-wide inspection was conducted by H. I. Division personnel on H. I. buildings and equipment. The results of the inspection were good. The area safety engineer was a number of the inspecting committee.

At present, 200-West Area is within 36 days of completing another year without a lost time injury.

A study is being made of bottle gas handling procedures and practices in usage being checked.

Safety and Fire Protection (Contin)

Inspection was made of methane installation at request of Technical supervision. Recommendations were given for safe operation.

Investigation and recommendations have been made for special air and gas sampling equipment in the 234-5 Building.

A study has been made of design problems of operating equipment to include safety features for safe operation in the 234-5 Building. Recommendations were made.

Recommendations have been made for method of emergency shut-down on operating equipment and the prevention of possible explosion within the equipment.

At the request of the Maintenance Division, a study was made of a hazardous welding operation and necessary protective measures recommended to assure a safe job.

Recommendations were made to the Maintenance Division for procurement of a portable fresh air compressor designed especially for respiratory supply. Further assistance will be given on this problem as the need for such equipment is becoming more imperative every day.

Assistance was given by the Safety Engineer in tank inspection and repair work in which entry to acid tank is to be made. Necessary precautions have been taken for flushing and neutralizing before entry and all protective, respiratory and emergency equipment will be procured. Air tests will be made before initial entry.

Recommendations are being prepared for shop installation of manifold system for welding booths.

300 Area Activities

Bulletins covering the safe use and handling of Carbon Tetrachloride and Trichloroethylene were completed and presented for discussion and approval.

700 - 1100 Areas Activities

An investigation was made on the location of control levers for signal arms in truck cabs. Recommendations were sent to the Transportation Division.

Inspection of a material handling job was made at Pasco and verbal recommendations for protective equipment given to the foreman.

Recommendations were given to Stores regarding the transporting of wide loads on area roads.

FIRE PROTECTION

A movie film on Fire Department Salvage work was obtained from the National Board of Fire Underwriters and was shown to all Fire Department personnel.

A basic building code for warehouses was prepared and approval obtained for its use.

Fire Protection (Contin)

The sprinkler system in the baby ward at the hospital was inspected with the hospital business manager, Village Safety and Fire group, and the Λ . E. C. Safety and Fire Protection Division. The decision was to make no change in the sprinkler system but to add a temperature alarm that would sound before temperature was high enough to trip sprinkler system.

The P-11 Area was inspected preparatory to being turned over to Operations.

It is planned to install a watchman clock system in the warehouse at Pasco and is expected to be put into operation in Harch.

Construction has started on the DR water works, 100-D Area. The Fire Department phone numbers have been posted throughout the Area.

The main activity in the 100-F Area is by Minor Construction in the remodeling of the 108 Building. Fire hazards have been held to minimum by them during the month.

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
Power Maintenance	300 200—East	1	Heating Unit Heating Unit	None \$ 30.00
·	Total	2	Total	\$ 30.00
Industrial Inv	estigation			
Division	Àrea	No. of Fires	Cause	Loss
Sa Division	200-West	ı	Welding	\$ 24.00

3

OFFICE SERVICES DIVISIONS

General Services

Laundering volumes were as follows:

TOTAL NUMBER OF INDUSTRIAL FIRES

Plant Laundry (Building 2723)

	January	February
Coveralls - Pieces Towels - Pieces Liscellaneous - Pieces	30;415 7;513 70,017	28;458 6;653 68,268
Total Pieces	107,945	103,379
Total Dry Meight - Lbs.	153,568	146,066

1212469

\$ 54.00

TOTAL LOSS

General Services (Contin)

Richland Laundry (Building 723)	January	February
Flatwork - Pieces Rough Dry - Pieces Finished - Pieces	57;251 31;726 2,980	50,909 29,595 2,772
Total Pieces	91,957	83,276
Total Dry Weight - Lbs.	59,772	62,457
Monitoring Section (Building 2723-W)		
Poppy Check - Pieces Scaler Check - Pieces	82;781 97,209	85,867 96,909
Total Pieces	179,990	182,776

Clerical Services

lizil Room

Work was completed on new sorting tables and layout of the mail room. The changes have speeded up the handling of the mail.

Mail volume again increased during the month.

The stationery supply room was discontinued on February 27 and the daily delivery service started. A folding machine was moved to Printing from the Hail Room on February 27.

	January	February
Pieces of Internal Mail Handled Pieces of postal mail handled Pieces of registered mail handled Pieces of insured mail handled Pieces of special delivery mail handled	378; 596 61,075 951 687 185	396; 352 57, 976 860 522 136
Total Mail Handled	441,494	455,846
Total Amount of Postage Used	\$1,458.80	\$1,250.07
Teletypes Sent Out Teletypes Received	933 793	859 916
Total Teletypes Handled	1,726	1,775
Total Number of Store Orders Filled:	2,021	2,061

Office Equipment

	January	February
Office Machines repaired in shop	193	220
Office Machines service calls.	255	325
		
Total Machines serviced	448	545

Printing

Work on new benches, equipment and layout in the Printing Section has been completed and has greatly facilitated work in the Bindery Unit.

	January	February
Multilith orders received	319	280
Multilith orders completed	299	290
Multilith orders on hand at month end	· 82	· 72
Himeograph orders received	1,949	2,095
Mimeograph orders completed	2,040	2,099
Mimeograph orders on hand at month end	: 4	0
Ditto Orders received	1;315	1;139
Ditto orders completed	1,363	1,141
Ditto orders on hand at month end	2	0

Stenographic Services

	J	anuary	Febr	uary
	Hours	Quantity	Hours	Quantity
Dictation and Transcription Machine Transcription	0	0	0	0
Letters	18:30 63:50	42 102	51:30 52:25	107 123
Mianual and Procedures Duplicating - Stencils, Ditto	32:00 159:05	56 251	63:55 289:35	154 594
Special Training	412:50 97•5	990	370:10 282.0	1,183
Unassigned time during month Meeting Time	53.5 3.3		81.0 8.7	
Illness	13.7	•	8.0	
Total Hours	902.8		1206.7	
Employees loaned to				
other Divisions	428.5		211.5	
Total Hours Available	1,331.3	,	1,417.12	

Records Control Division

Quantity of records received, processed and stored:

Accounting Division Design and Construction Divisions Employee and Community Relations Divisions Maintenance Division Medical Division Project Engineering Division Purchasing and Stores Divisions Transportation Division	80 120 18 6 19 3 47 8	Standard	Cartons n n n n n n n n n n n n n n n n n n
Total		Standard	Cartons

Standard Records cartons issued: 432
Persons furnished records services: 156

Records Inventory:

The plant records inventory is complete with the exception of Classified Files.

The next step in this program is the establishing of the location of the "Record File" (records to be later transferred to Records Center for keeping) for all records and designating duplications as "Office Files" so that they can be disposed of in the offices when they become inactive. Retention periods are also being established at this time.

E. J. Leahy, Executive Director of the National Records Hanagement Council, spent five days (February 20th through February 24th) on on the Plant as a consultant, reviewing the A.Z.C. and G.Z. records control program. His reports were very encouraging and commended the planning, execution, and results of the program.

Twenty-four sections of metal shelving have been loaned to this Division by the A. E. C. to use until the new Records Center is built. This shelving is being erected in the 712-B Hutment.

Forms Control

This program is continuing to produce economical results as well as improve the general appearance of printed forms. Design standards are being constantly improved for wider application and more economic reproduction.

During the month of February, fifteen new forms were designed resulting in an annual savings of approximately \$1,200. For example, one form reduced paper and printing needs from 15,000 $8\frac{1}{2}$ x ll forms to the equivalent of 1,700 $8\frac{1}{2}$ x ll forms. Another form reduced fill-in time required from five days to one day per month.

PATROL AND SECURITY

General

Effective February 3, 1950, the control of keys to the dynamite storage at Riverland Yards was transferred to the Transportation Division

Effective at 8:00 A.M., February 6, the post at Room 205 in the 234-5 Building was moved to the stairway landing of Stairway No. 4. This post is now designated as Stairway No. 4.

On February 9, at 12:01 A.M. the control of the Yakima Barricade was transferred from the 200-West Area to the 100-B Area. Sufficient personnel to operate this barricade were transferred from the 200-West Area.

As of February 13, that portion of the 101 Building known as the "Pad Room" adjacent to the machine room will be considered a hazardous area and persons entering will be required to use personnel meters.

A procedure to increase the security for the plant by establishing positive identification of personnel presenting Visitor and/or One Day Yellow Tag passes was placed into effect on February 20.

A procedure covering Emergency Plan Notification for the Emergency Officer was established February 20.

Effective February 20, the 200-Weat Area post designated as Exclusion Area Fence Patrol was discontinued.

Effective February 20, two new posts are in effect in the 200-West Construction Area. These posts will be known as (1) M-J-1 Badge House, manned from 7:00 A.M. to 5:00 P.M. and (2) Gate No. 650. The M-J-1 Badge House will control entrance to and exit from the M-J-1 construction area. Gate No. 650 post will control the exit of construction personnel from the M-J-1 Construction Area to the 200-West Operation Area. This post will be manned 24 hours a day.

The control of the 234-5 Exclusion Area was changed from the Security Field Inspection Division to the Security Patrol Division on February 21.

Two members of the Security Division attended the "Counter Subversive National Security, West Coast Conference" meeting at Portland, Oregon on February 25.

Revision of the Security Patrol Central Supply records was completed on February 24.

Effective February 24, the post in the 3000 Area became a full time post, 6:00 P.M. to 7:00 A.H., Honday through Friday; 24 hours on Saturday, Sunday and holidays.

As of February 27, the post at P-ll was extended from the No. 2 Shift only to 24 hours coverage and will be designated as General Security Patrol on the No. 1 and No. 3 Shifts.

Plans have been complted to reorganize the Security Patrol Administration Section to increase efficiency by consolidation of records and reduction of one clerical position. This will allow office space for the Security Field Inspection Division. This reorganization is to be effective Harch 13, 1950.

Patrol

The 200 Areas handled 73 process escorts between the areas.

Requests handled totaled 373, consisting mainly of opening doors, gates and providing escorts for employees of other departments.

A total of 85 Unusual Incident reports were received, consisting mainly of Security Violation, lost badges, pencils, contraband picked up at barricades, traffic accidents and fires.

A total of 537 pat searches were made of employees leaving the operating areas during the month.

Patrol supervision handled two First Aid cases during the absence of the Area nurse.

Classified escorts totaling 31 were handled during the month.

A total of 20 traffic escorts were handled during the month.

Patrol made 13 ambulance runs for the Medical Division during the month.

Practice Evacuations were held as follows:

100-B Area	2-14-50	11:10 A.M.
100-D Area	2-1 -50	10:36 A.M.
100-F Area	2-21-50	10:05 A.H.

Arrest Summary

	January	February
Warning tickets issued Verbal warning given Citation tickets issued (traffic only)	0 1 0	0 3 0
Accident Summary		
Total Accidents Government permits suspended	3 1	12 0

Training

Training courses held during the month were as follows:

	Hours
Security	1/4
Safety	1/2
Health	1/4
Patrol Operations Class No. 1	ī
Patrol Operations Class No. 2	ī
Small Arms Firing .38 Cal. (double action)	1 1/2
Small Bore Firing .30 Cal. Carbine	2 -/~
	~

Patrol (Contin)

The Safety Bulletin Board which was constructed during the month of Way, 1949 was also used during the month of February.

The competitive safety program is being continued.

Inventory of all range equipment and arsenal contents was completed on February 24.

Security

There were 188 security meetings held and attended by 2,434 General Electric employees during the month.

Security orientation talks were given to 24 employees who received their "Q" clearance from the Atomic Energy Commission during the month.

Imployee Clearance

Class "Q" clearances received on old employees this month Class "Q" clearances received on old employees to date	- 0 4 , 459
Class "Q" clearances received on new employees this month Class "Q" clearances received on new employees to date	· 32 6,288
Class : Clearances received on both old and new employees since February 17, 1947	10,747
Formal "P" clearances awaiting change to "C"	34
Authorization clearances issued this month	63

Statistical Summary of Cutstanding Area Badges

^{*}Includes 36 -A" badges at Riverland Yards

^{*}Includes 360A0 badges at Riverland Yards

Visitor or Temporary Badges

Area	January	February
100-B 100-D 100-F 100-H 200-E 200-W 200-N 300 100-DR	505 969 860 333 729 1048 706 1472	547 1005 902 387 769 1114 721 1544
Total	6616	6993

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

	Total Compa	nies forwarded to AEC this mont	h: l	Personnel: Consultant	personnel:	3
	Total Compa	nies forwarded to AEC last mont	h: 3	Personnel: Consultant	personnel:	4
	Total compa	nies forwarded to AEC to date:	218	Personnel:	2,	376
•		nies cleared for restricted s month:	7	Personnel: Consultant	personnel:	19 4
		nies cleared for restricted to month:	4	Personnel: Consultant	personnel:	15 2

New companies forwarded to the Atomic Energy Commission this month:

Booz, Allen and Hamilton Chicago, Illinois and New York City

Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "P"	6,
Formal "Q"	23
Emergency "Q"	2 (GE personnel)

		nolass Aross			100-B-XXX 200-W-XXX · 300-303,3706	100-B-XXX 200-W-XXX 300-3¢3,3706	100-B-XXX 200-W-XXX 300-303,3706				
		Restricted Bata Class. Unclass			×	×	×		×	×	
	1550	Departure			2-12-50	2-12-50	2~12-50	,	2-20-50	2-11-50	DEPLIANCE.
		Arrival			. 2-10-50	. 2.10.50	. 2~10~50		2-19-50	2.,9-50	
HANFORD WORKS General Electric Company Richland, Washington	R PERIOD ENDING FE	Person Contacted			W. D. Norwood, M.D. 2-10-50 P. A. Fuqua	W. D. Norwood, M.D. 2.10.50 P. A. Fuqua	W. D. Norwood, M.D. 2-10-50 P. A. Fuqua		H, M, Rozendahl	AEC personnel d medicine	
HA General Richle	REPORT OF VISITORS FOR FERIOD ENDING FEBRUARY 28,	Purpose of Visit			Medical consultation Service	Medical consultation School	Medical consultation	lons	Discuss mutual hoalth problems	Information meeting of AEC person laboratory and medical directors in biology and medicine	
		Mamo - Organization	MEDICAL DIVISION	I. Visitors to this Works	W. S. McNary Directory of Michigan Hospital Detroit, Michigan	R. A. Moore Washington University Medical School St. Louis, Missouri	H. Smith (consultant for self) Medical consultation 4601 Ellis Avenue Chicago, Illinois	Visits to other Installations	W. D. Horwood, M. D. to: Knolls Atomic Power Lab. Schenectady, New York	D. H. Eckles to: Division of Boology & Medicine	Atomic Energy Coumission Washington, D. C.
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1. Visitors to this Works

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Ilame - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class Unclass	ata aga Arous	
D. H. Marquis Gen. Eng. & Consulting Lab. Schenectady, Now York	Design consultation	G. Thayer	2-21-50	3-10.50	×	100-B-105 109-II-105 2:0-E-XXX 300-3706 200-W-254,	
R. S. Perry to: Fansteel Metallurgical Corption for MJ-3 project Chicago, Illinois	Obtain design informa- orption for MJ-3 project	L. R. Scribner	1-26-50	1-31-50		· ×	
R. S. Perry to: Schutte & Koerting Philadelphia, Pennsylvania	Obtain design information for MJ-3 project	C. G. Batchley	1-26-50	1-31-50		×	
T. Williams to: Crano Company Chicago, Illinois	Design conference on pipe and electrical connector program	P. M. Weiss A. M. Houser	127-50	2-6-50		×	
T. Williams to: Pyle- National Coder Chicago, Illinois	Design conference on pipe and electrical connector program	D. E. Packard	1-27-50	2~6~50		×	
J. E. Kaveckis to: Gen. Eng. & Con. Lab. Schenectady, New York	Exchange of information on instrumentation com-	H. A. Moulthrop	1-14-50	1-27-50	×		
T. Williams to: Crane Company Chicago, Illinois	Design conference on pipe and electrical connector program	P. M. Weiss A. M. Houser	2-24-50	Still gone		×	
D. E. Irons to; Fluor Corporation Los Angeles, California	Interview Technical H. J personnel to be loaned to General Electric, Hanford	H. J. Gearin nford	2~2h-50	Still gone		¥	
C. O. Clemetson Y to: Kellex Corporation O New York, New York	Technical consultation to expedite design of instrumentation	G. White, Jr.	2-27-50	34-50 EEE	×		

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	Furpose of Visit	Person Contacted	Arr1 vo 1.	Departure	Class	Unclass	Arcea
G. M. Roy to: Columbia University New York, New York	Support of development	V. Paschis T. V. Drew	2**3**50	2-11-50		×	
G. M. Roy to: Gen. Eng. & Cons. Lab. Schencctady, New York	Contract DRC-1 (2) "G" Study consultation	G. R. Rede	2-3-50	2-11-50	×		
<pre>I. N. Sorrells to: Seattle, Washington</pre>	Conference (3rd NW one) on road building	1 1	2-5-50	2-9-50		×	
A. R. Brooks to: Charles T. Main Company Boston, Massachusetts	Confer with C. T. Main on problems arising in design of C-342 project	M. K. Bryan R. T. Colburn	2*20*50	2~54-50	×		
J. R. Thayer to; Charles T. Main Company Boston, Massachusetts	Confer with C. T. Main on problems arising in design of C-342 project	M. K. Bryan	2-20-50	2-2h-50	×		
H. A. Hauser to: Charles T. Main Company Boston, Mussachusetts	Expedite problems of design pertaining to contract G-274	M. K. Bryan	2•20-50	2-24-50	×		
G. M. Roy to: Brookhavon Nat'l Lab. Long Island, Now York	Heat transfer calculation techniques	lon W. E. Winsche	2-8-50	2-8-50	×		•
II. Visitors to this Works				1) (1)
	Inspect and make recommenda. D. M. B. tions concerning pumping equip-F. Tabb ment furnished by Pacific	nenda- D. M. Brown ng equip-F. Tabb fic	2-15-50	2-15-50	,	4	141-N

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Pump Company

HEALTH INSTRUMENT DIVISIONS

J. Visitors to this Works

:					Restricted Date	
Mame - Organization	Purpeso of Visit	Person Contacted	Arrival.	Departure	Class Unclass	Are va
P. J. Fersiana Argonne National Laboratory Chicago, Illinois	Discuss and inspect Hoalth Physics installation in production areas	pect H. M. Parker installaC. M. Patterson ion areas	2-23-50	2-24-50	×	100-H~XXX 200-E•XXX 200-VI•XXX 500-5706
M. E. Enswinger Washington State College P.,11man, Washington	Biology consultation	K. E. Herde H. A. K _O rnborg	2-27-50	2-27-50	×	100°-F'-XXX 300°- XXX
P. E. Church University of Washington Scatile, Washington	Meteorology consulta-	D. E. J _e nne	2-54-50	2-24-50	×	
Visits to other Installations	ons				•	
R. F. Foster to: University of Washington Scattle, Washington	Inspect biology facilities	L. R. Donaldson	2-16-50	2-17-50	×	
K. E. Horde to: University of Washington Seattle, Washington	Inspect biology facilities	L. R. Donaldson	2-16-50	2-17-50	×	
H. M. Parker West Coast Scientific Conferenceconference and University of California a paper Les Angeles, California	Attend AEC Wost coast oconference and present a paper	S. I. Warren	2-1-50	2-3-50	×	
H. M. Parker to: Argonne National Lab. Chicago, Illinois	Attend Radiobiology symposium panel.	H. L. Friedell A. M. Brues J. E. Rose	2-13-50	2-15-50	×	
H. M. Parkor to: Knolls Atomic Power Lab. Schenectady, New York	Discuss health physics L, L, Gorman problems	s L. L. Gorman	2-7-50	2-8-50	×	
M. Parker Discuss health	Discuss health physics		2-9-50	2-9-50		
Company to the toman	0002121					

Attend contended to		1212561
	. Lab	

Purpose of Visit Person Contacted Attend Laboratory S. Warren Directors meeting and discuss laboratory programs on biology and medicine
fittend Laboratory S. Warren Directors meeting and discuss laboratory programs on biology and medicine Attend AEC West Coast Scientific conference and prosent paper Installation of first J. T. Lloyd Hanford water cooled pilot channel test rig and information on Project P-13 Installation of first J. T. Lloyd Hanford water cooled pilot channel test rig and information on Project P-13 Installation of first J. T. Lloyd Hanford water cooled pilot channel test rig and information on Project P-13 Installation of first Scientific conferences for W. Dunlap G.E.&C.L. and KAPL particity pation in P-10 extraction Attend conferences for J. Marsden G.E.&C.L. and KAPL particity pation in P-10 extraction

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- 6 - Name - Organization	Purpose of Visit	Person Contacted	Arrival	Peparture	Rostricted Data Class Unclass	ood Data Unclass	<u> ४५ ज</u> ू
MAINTE: NCE DIVISION							* *
<pre>C. D. Parker Fifner Bearing Company Soattle, Washington</pre>	R _e commendation on pump house	R. T. Jessen	2-16-50	2-17-50			200-w 29 1-2
F. B. Chamberlain Arthur Forsyth Company Seattle, Washington	Rocommendation on pump house	R. T. Jessen	. 2-16-50	2-17-50		×	29 1-Z
MAIMGENENT							
I. Visitors to this Works					;		
J. Mareden Knolle Atomic P _o wer Laboratory Schenectady, New York	Consultation	W. I. Patnode	2-27-50	3-3-50	×		3706 3706
A. D. Tevebaugh Knolls Atomic Power Laboratory Schenectady, New York	Consultation	W. I. Patnode	2-27-50	3-3-50	×	٠	300 3706
II. Visits to other Installations	1ons		,	•	;		-
J. E. Maider, Jr. to: Los Alamos Scientific Lab. Plant Los Alamos, New Mexico	Conference on DP West	M. Roy	2-6-50	2-9-50	∢		
GENERAL ACCOUNTING DIVIBION							
I. Visits to other Installations	cns	:	(- C	>		

DECESSIFE

2-20-50 2-24-50

Exchange of information R. S. Noblett regarding budgeting, financing S. materials

J. P. Holmus to: Knolls Atomic Power Lab. Schenectady, Now York

Restricted Data Departure Class Unclass	2-25-50 X 300-XXX 100-H-XXX 200-E 100-B-XXX XXX 100-D-XXX 200-W 100-F-XXX XXX	2-24-50 X 100-D 105 100-F 105		H-001				100-D-105 221-B 100-F-105 200-W 100-H-105 221-F 200-N-212-1	3-3-50 X 100-B-105 200-E 100-D-105 221-B 100-F-105 200-W
Arrival	2~23~50	2-23-50		()	2-12-5		2-27-50		2-27-50
Person Contacted	н, г. Меввлоу	H. F. Measloy			W. P. McCue		ر ام الم		R. S. Bell
Purpose of Visit	Company boiler inspector	Discuss water systems in production areas			Inspection 100-H Area and consultation in 300 and 100-H Area			consultation	consultation
7 - Name - Organization	 Visitors to this Works H. Y. Hedner Travoller's Insurance Company Scattle, Washington 	M. Sivetz Argomie National Labofatory Chicago, Illinois	"P" DIVISION	I. Visitors to this Works	W. R. Kanne Knolls Atomic Power Laboratory Schenectady, New York	"S" DIVISION	I. Visitors to this Works	J. Mursden Knolls Atomio Powor Laboratory Schenectady, New York	. A. D. Tevobaugh Knolls Atomic Power Laboratory

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Nomo - Organization FURCHASING AND STORES DIVISION	Purpose of Visit	Person Contacted	Arrival	Departuro	CLABB UNCLUBB	
I. Visitors to this Works			0.00 50	2-2-50	X	300-XXX
M. K. Kahl Propane Gas & Equipment Company Pasco, Washington	Delivery of propane gas	B H. U. MOLEGOL				N-002
W. S. Edwards West Coast Freight Company Pasco, Washington	Delivery of sodium nitrate H.	rato H. O. Monson	2-2-50	2-2-204		M= 575
B. Fulks Wost Coast Froight Company	Delivory of sodium nitrate H. O. Monson	rate H. O. Monson	2-3-50	2-3-50	4	275-E
Panco, Washington J. Price	Delivery of modium nitrate H. O. Monson	rate H. O. M _o nson	2-3-50	2~3-50	×	200-E 275-E
Pageo, Washington	Delivery of chemicals	H. O. Monson	2-16-50	2-16-50	×	100-H XXX
Loe & Estos Pasco, Washington		H O M.ngon	2-17-50	2-17-50	· ×	H-001
G. Mulholland Lee & Estos Pauco, Washington	Edgential muterials on HW-55404-M			05-10-0	×	100-F
M. Brill Loo & Estos	Essential materials on HW-55404-M	H. O. Monson	2-24-70	2-24-00		189
Pasco, Washington G. Mulholland Loc & Estes	Essential materials on HW-55404-M	н. О. М _о лвол	2-54-50	2-24-50	*	100-F 189
Pasco, Washington						

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Name - Organization	Purpose of Visit	Porson Contacted	Arrival	Departuro	Class Unclass	Arcas
I. Visitors to this Works						
A. H. Y. Hedner Traveller's Insurance Company Scattle, Washington	Boiler house inspection H. A. Hauser	H. A. Hauser	2-23-50	2 - 24-50	×	
II. Visits to other Installations	euo.					
H. A. Hauserto: Roberts Filter CompanyPhiladelphia, Pennsylvania	Expedite delivery of 183-DR Filter Plant	F. Haddock	2-13-50	2-24-50	×	
H. A. Hauser to: Charlcs T. Main Company Boston, Massachusetts	Expedite delivery of 185-DR Filter Plant	M. K. Bryan	2-13-50	2-24-50	¥	
<pre>II. A. Hauser to: Chapman Valve Company Indien Orchard, Massachusetts</pre>	Expedite delivery of of 183-DR Filter plant		2-13-50	2-24-50	×	
H. A. Hauserto: Philadelphia Gear WorksPhiladelphia, Pomsylvania	Expedite delivery of of I83-DR Filter Plant	i I	2-13-50	2-54-50	×	
J. C. Hamilton to: Crane Company Chicago, Illinois	Establish inspection procedures	P. M. Weiss A. M. Housor	2-27-50	2-28-50	×	
J. C. Hamilton Pylo-National Company Chicago, Ilvia	Establish inspection procedures	D. E. Packard	2-27-50	2-28-50	×	



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PLANT SECURITY AND SERVICES DIVISION

I. Visits to other Installations

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Rostricted Data Class Unclass

Departure

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Name - Organization	Purpose of
T. B. Farley to: American Legion Macting Portland, Orogon	Attend sec Uf Wost Co
E. W. Sutherland to: Amorican Legion Meoting Portland, Orogon	Attond second of West Co.

Purpose of Visit Person Contacted	Arrival	Arrival Departure
Attend security mosting - Uf Wost Coast Conference	2-24-50	2~24~50 2~26~50
Attend security meeting - of West Coast Conference	2-51-50	2-24-50 2-26-50

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1 77		-		Donort tro	Regtricted Inta	Avena
Name - Organization	Purpose of Visit	Person Contacted	Arrivar	S TO THE STATE OF		
TECHNICAL DIVISIONS	·					
I. Visitors to this Works					;	9022 WZ
J. P. Howe Knolls Atomic Power Laboratory	Technical consultations A. B. on fundamental studies in metallurgy work	A. B. Greninger	2-23-50	2-24-50	×	on 1 C= on C
Scheneceas, .c	gram	R. H. Beaton	2-15-50	2-16-50	×	300-5706 321
Oak Ridge, Tennessee	discussion	par ^a i				200 -W 221-T 231
T. C. Runion Oak Ridge National Laboratory Oak Ridge, Tennessee	Metal Recovery Program discussion	R. H. Beaton	2-15-50	2-16-50	ĸ	30 0-3 706 321 200-W 221-I
A. Turkevich	Krypton 85 discussion	R. H. Beaton R. B. Richards	2-16-50	2-17-50	×	AEC request
Chicago, Illinois	•		2-27-50	2-27-50	×	
J. Marsden Knolls Atomic Fower Laboratory Schenectady, New York	Redox and metal recovery ery program meetings	• •				Ç
G. T. Seaborg	Separations Program discussions	R. H. Beaton	2-27-50	3-1-50	×	AEC request
University of California Berkeley, California				() —		9075-005
B. W. Farnes Farnes and Martis	Inspection of Fischer and Porter pumps	J. T. Stringer	2-24-50	/2-24 - 50	4	321
Portland, Oregon						

- 12 - Mars Oranni zation	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data	Areas
-1 (-	ָ ה ה	I. T. Stringer	2-24-50	2-24-50		300-3706
an		•				321
Ins	Inspection and Consultation	R. E. Nather	2-13-50	2-14-50	×	300-3706 303 Excl. 100-H
Con ANL	Consultation on ANL-140	J. B. Lambert	2-13-50	One Month	×	300-3706 101 100B-105 100P-105 100F-105
Con:	Consultation on AML-140	J. B. Lambert	2-20-50	One Month	×	300-3706 1009-105 100F-105 100H-105
Consulta AML-140	ation on	J. B. Lambert	2-20-50	One Month	×	300-3706 100D-105 100F-105 100H-105
Cons	Consultation on ANL-140	J. B. Lambert	2-20-50	One Month	><	300-3706 1000-105 100F-105 100H-105
Consulta	ation on	J. B. Lambert	2-20-50	One Month	×	300-3706 100 p -105 100F-105 100H-105

×

2-10-50

2-8-50

Max F. Roy

234-5 Consultations

II. Visits to Other Installations

to: Los Alamos Scientific Lab.

J. B. Work

Los Alamos, New Mexico

100D-105 100F-105 100H-105

300-3706 100B-105

300-3706 100B-105

300-3706 100B-105

300-3706 100B-105

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Restricted Data	Unclass										
Restric	Class.	> 4	><	×	×	×	×	×	×	Sec. Co.	_8
	Departure	2-2-50	2-14-50	2-14-50	2-17-50	2-21-50	-2-21-50	2-28-50	2-24-50	2-28-50 X	
	Arrival	2-1-50	2-13-50	2-14-50	2-15-50-	2-20-50	2-20-50	2-27-50	2-23-50	2-27-50	· · · · · · · · · · · · · · · · · · ·
	Person Contacted		J. Harsden J. F. Flagg . W. R. Kanne	H. A. Liebhafsky		1	1	1	Dr. H. D. Young	Dr. H. H. Haring	
	Purpose of Visit	Attend Symposium on Hodern Hethods of Analytical Chemistry	Discuss developments in analytical chemistry, and new counting equipment.	Discuss developments in analytical chemistry.	Pittsburgh Analytical Symposium	Technical recruitment	Technical recruitment	Spectrophotometer Service Conference	Discuss technical information problems.	Meeting of Technical Information Panel	01.
1]; ·	Hame - Organization	<pre>11. Lewis to: Louisiana State University Baton Rouge, Louisiana</pre>	S4	A. H. Bushey to: G.E. Research Laboratory Schenectady, W. Y.	A. H. Bushey to: Pittsburgh, Pa.	A. H. Bushey to: University of Chicago Chicago, Illinois	A. H. Bushey to: University of Wisconsin Ladison, Wis.	<pre>!!. C. Lambert to: Schenectady, N. Y.</pre>	C. G. Stevenson to: Argonne National Laboratory information problems. Chicago, Illinois	C. G. Stevenson to: Hound Laboratory Hizmisburg, Ohio	13 12 10

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Departure	2-20-50	2-9-50	2-8-50	2-9-50	. 2-10-50	2-10-50	2-10-50	0 2-15-50	
hrrival	2-20-50	2-6-50	2-8-50	2-9-50	2-6-50-	2-6-50	2-6-50	2-13-50	2-13-50
Person Contacted	Larry Penberthy	llarvey Brooks	Walter Williams	Donald Egnor	J. P. Howe	J. Р. Ноwе	J. P. Howe	A. D. Potts	A. D. Callihan
Purpose of Visit	Technical discussions regarding special laboratory equipment	Discussions on P-10 studies	Discussions on P-10 Studies	Consultation on 234-5	P-10 Studies	P-10 Studies	Graphite Consulta- tion	Observe special fabrication	Consultation on ratory P-10 problems
Name - Organization	F. B. Cuinlan to: Penberthy Instrument Co. Spokane, Mashington	P. F. Gast to: Knolls Atomic Power Lab. Schenectady, N. Y.	P. F. Gast to: Atomic Energy Commission Jashington, D. C.	P. F. Gast to: General Engineering & Consulting Lab. Schenectady, N. Y.	<pre>A. A. Johnson to: Knolls Atomic Power Lab. Schenectady, N. Y.</pre>	M. W. Carbon to: Knolls Atomic Power Lab. Schenectady, N. Y.	E. P. Warekois to: Knolls Atomic Power Lab. Schenectady, W. Y.	<pre>!/. T. Kattner' to: Simonds Saw & Steel Co. Lockport, N. Y.</pre>	F. E. Kruesi Sto: Oak Ridge National Laboratory F-10 problems Consultation on Sto: Oak Ridge, Tennessee

PURCHASING AND STORES DIVISIONS SUMMARY FEBRUARY, 1950

Personnel of the Purchasing and Stores Divisions showed a net increase of four people as indicated by the tabulation below:

	Total Personnel as of 1-31-50	Total Personnel as of 2-23-50	Net Change
Exempt	53	53	0
Non-Exempt	234	238	Plus 4
TOTALS	287	291	Plus 4

The work load in the Purchasing Division increased materially. The number of requisitions on hand at month end was 969 which represented an increase of approximately 80 per cent.

Authority was received to proceed with procurement for Project MJ-1 on February 3, 1950.

An order was placed with the Roberts Filter Manufacturing Company amounting to approximately \$675,000. The need for this equipment was so urgent that it was deemed advisable to send the Purchasing Agent to the Roberts Plant at Darby, Pennsylvania for the purpose of aiding in the scheduling and expediting the delivery of this equipment.

We were able to maintain through the medium of snot purchases an average of two months' supply of coal despite the National strike.

Quotations were obtained on our rather large requirements for Aluminum Nitrate and forwarded to the Commission for approval. Indications were that it would be necessary for the successful vendor to construct additional production facilities either at Sunnyside, Washington or Kennewick, Washington to take care of our needs.

Stores active inventories were reduced by \$45,120.35.

1,791 purchase requisitions were screened resulting in the supplying of 741 items from plant inventories thus obviating the expenditure of new funds.

An audit of the Stores Division's scrap sales procedure was completed by the Accounting Division.

As a result of rate reductions obtained from carriers, total savings in freight charges for the month amounted to \$43,607.29.

PURCHASING AND STORES DIVISIONS PURCHASING DIVISION FEBRUARY, 1950

GENERAL

The work load increased materially during the month. 1,337 purchase orders were placed as compared to 1,299 placed in January. 2,454 purchase requisitions were received and assigned as compared with 2,106 during January. Requisitions on hand at month end totaled 969 as compared with 570 at the end of the previous month.

On February 3, authority was received to proceed with procurement for Project MJ-1. Orders were placed immediately for those requisitions on which preliminary work had been done prior to the release. Many new requisitions were received and work is progressing satisfactorily.

On February 13, the Purchasing Agent made a trip to Roberts Filter Manufacturing Company in Philadelphia, Pennsylvania for the purpose of scheduling and expediting delivery of the 183-DR Filter Plant equipment purchased on HWC-8110. Arrangements were also made allowing the General Electric Company to furnish material available from plant stock and receive credit on the order for the dollar value of the material furnished, the dollar value to be determined from a priced Bill of Material submitted by the Roberts Filter Manufacturing Company.

The major part of the coal industry was closed down by strikes during all but a few days of the month. Some coal was shipped prior to the closing of the Union mines and we were able to supplement this tonnage from non-U.M.W. mines. In addition a spot purchase of 40,000 tons was made for delivery of 10,000 tons per week during March which will prevent depletion of reserve stocks. At month end we had on hand approximately two months' supply.

Quotations were received on our requirements for Aluminum Nitrate. After evaluation, our recommendation was forwarded to the Commission for approval.

Additional specifications on new materials for both MJ-1 and MJ-4 were received and market surveys are in progress to determine the supply available and approximate costs.

Invitations to bid were mailed requesting quotations on our estimated requirements of Nitric Acid and Ammonium Silico Fluoride.

PERSONNEL

	Total Personnel as of 1-31-50	Total Personnel as of 2-28-50	Net Change
Exempt	26	27	Plus 1
Non-Exempt	27	28	Plus l
TOTALS	53	55 .	Plus 2

SAFETY AND SECURITY

Safety and Security	Meetings scheduled	2
Number of Employees	attending	55
Minor Injuries	_	0

PURCHASING AND STORES DIVISIONS PURCHASING DIVISION

STATISTICS	G	<u>D</u>	Total
Requisitions on hand 1-31-50	-	<u>-</u>	
(includes 24 assigned to Govt.)	503	67	570
Requisitions assigned during Februs	ery 2,242	212	2,454
Requisitions placed during February	1,888	167	2,055
Requisitions on hand 2-28-50			
(includes 139 assigned to Govt.)	857	112	969
	Number	v	alue
		A	
HW Orders placed	1,220	\$543,6	
HW Alterations placed	129		14.12 Cr.
Total	1,349	\$530,9	44.09
HWC Orders placed	117	617,5	33.59
HWC Alterations placed	16		22.11
Total	133	\$732,3	555.70
AEC Orders placed	95	59:4	22.65
DC Orders placed	6		67.87
· ·		•	
0. 1. 0	OD.	ODG.	Total
Government Transfers	OR	ORC	TOTAL
	5	0	5
•			
0			
Open Orders			
HW Orders 922			
HWC Orders 133			
Govt. Orders 27			
Number of man and an acceptable for	nostion during m	onth	26
Number of new orders requiring ins Number of orders requiring inspect	ion completed du	ring month	16
Number of orders requiring inspect Number of orders outstanding requi	ring inspection	at month end	67
HW Orders expedited (Special Reque	st)	u	215
HW Orders expedited (Routine)	/		450
HNTC Orders expedited (Routine)			133

PURCHASING AND STORES DIVISIONS STORES DIVISION FEBRUARY, 1950

GENERAL

Materials valued at \$122,834.65 were declared excess from Stores active inventories during the month. This was accomplished by the excessing of meterials representing more than a year's supply and by the deletion of 242 obsolete stock items. As a result, total Stores inventories were reduced by \$45,120.35.

1,791 purchase requisitions were processed through screening and 741 items were furnished from plant inventories.

The screening of purchase requisitions originating in all divisions as well as various subcontractors was improved and considerably streamlined.

An inventory of aluminum tubes stored in the 100-D Area was started during the month. This inventory will be submitted to the Maintenance Division for review and instruction as to ultimate disposition.

The program for review of slow, nonmoving, and obsolete items currently in active inventories was approximately 80 per cent complete at month end.

The disbursement of materials held for construction use to subcontractors accelerated during the month. We were advised by one of the subcontractors that their withdrawals of pipe, valves, and fittings will materially increase as soon as certain craftsmen have been placed on their rolls.

The warehousing study progressed satisfactorily and will be presented to the Commission within the next few weeks.

Forty-six formal excess lists totaling \$5,571,597.70 were turned over to the Commission during the month and 145 shipping orders were processed. Materials and equipment valued at \$492,676.09 were removed from Excess and returned for use on the Project.

194 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the purchase of scrap and the transfer of excess property.

Thirty-two scrap tract houses were sold during the month totaling \$14,181.98.

Twenty-one scrap buildings located at Columbia Camp were turned over to Excess by the Commission and will be disposed of within the next thirty days.

An audit of Stores Division scrap sales procedures was completed by the Accounting Division during the month. The audit report stated that the entire operation was well controlled and completely satisfactory from an accounting standpoint.

PERSONNEL

	Total Personnel as of 1-31-50	Total Personnel as of 2-28-50	Net Change
Exempt	22	21	Minus 1
Mon-Exempt	. 199	202	Plus 3
TOTALS 124	2515 $\frac{221}{}$	<u>223</u>	Plus 2

PURCHASING AND STORES DIVISIONS STORES DIVISION

SAFETY AND SECURITY

Value of Cash Sales

Value of materials declared excess

Safety and Security Meetings scheduled	10
Number of Employees attending	198
Minor Injuries	5

STATISTICS

Construction Materials Inventory Control	
Items in Stores Stock (Estimated)	52,286
Store Orders filled	7,288
Number of requisitions screened - A.J.	149
Number of requisitions screened - G.E.	941
Number of items furnished from stock	790
Value of material offered by screening	\$ 86,363.51
Value inventories at month end	\$10,694,991.02
Value of Disbursements	509,739.62
Inventory Control	
Number of items added to Stores stock	19
Number of items deleted from Stores stock	242
Items in Stores stock at month end	47,865
Store orders filled	20,153
Number of requisitions screened this month	1,791
Number of items furnished from plant sources this month	741
Inventory valuation (903 - all captions, 906 & 912)	\$ 1,452,078.14
Inventory valuation (Spare Parts) at month end	1,633,386.64
Total value inventories at month end, including Spare Parts	3,085,464.78
1 7 Tal Talan Interior to a month one, Indianally that of all of	3,000,000

* Includes \$6,958.43 disbursed to Construction & CPFF subcontractors

Value of disbursements, not including cash sale items

Value of materials returned to Stores stock for credit

Esceiving, Warehousing & Disbursing	
Receiving Reports issued	3,122
Emergency store orders filled	8
Returnable containers on hand at month end	6,527
Returnable containers on hand over six months	1,603
Shipments processed (containers and material)	217

Surplus, Salvage & Scrap		
Excess Account 10.10 Balance		\$19,648,975.87
Receipts 1-25-50 to 2-25-50 Lumber Automotive Equipment Machine tools and equipment Office Furniture, machines Mousehold Furniture, etc. Material and supplies Miscellaneous Equipment 12/25/b	\$19,398.89 60,437.12 7,958.69 11,521.01 2,861.01 88,804.14 15,435.23 \$206,416.09	206,416.09 \$19.855,391.96

190,805.68*

1,123,14

645.62

PURCHASING AND STORES DIVISIONS STORES DIVISION

STATISTICS (Cont.)

Surplus, Salvage & Scrap (Cont.)		
Disbursements 1-25-40 to 2-25-50 On Project		
Lumber \$	6,295.46	
Process Equipment	2,440.00	
Automotive Equipment	257,215.41	
Machine Tools & Equipment	11,560.77	
Office Furniture, Machines	4,377.79	٠.٠٠
Household Furniture, etc.	643.22	· ·
Material and Supplies	42,034.44	
Miscellaneous Equipment	168,104.00	
milbooliamoodo, Equipmono		
Off Project	•	
Lumber	24,851.70	
Automotive Equipment	184,910.14	
Machine Tools & Equipment	8.268.00	
Office Furniture, Machines	33,901.75	
Household Furniture, etc.	6,981.21	
Material and Supplies	49,723.05	
Miscellaneous Equipment	56,691.48	
\$	858.003.42	858,003.42
Balance of Account No. 10.10 as of 2-25-50		\$18,997,388.54
(See attached list for breakdown of		Quality
materials in this account by classific	etion)	
materials in this account by trabbility	u0101,	
Total Receipts to Date		\$29,236,114.87
Total Disbursements to Date		10,238,726.33
100al Pibbarbondings of Pago		20,200,000
Scrap and Salvage Disbursed		
Scrap Sales Completed	30	
Scrap Sales in Process	. 3	
Scrap Sale Revenue for the month	114,246.72	
Total Scrap Sale Revenue to date	\$39,406.81	
, 100mm marap man of the same	,	

PURCHASING AND STORES DIVISIONS STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10.10

Class	Description	Monetary Value
. 1	Gun Emplacements, Fire Control Instruments	1.25
2	Small Arms	1,421.16
3	Lethal Device Equipment	10,00
4	Ammunition	83.62
5	Flags, Bunting, Pennants, etc.	168.00
. 7	Fuel	641.46
8	Motor Vehicles: Electric Trucks, Tire Tubes	- 700,690.24
9	Boats	62.00
10	Outboard Motors and all Accessories	4,859,48
11	Pumps end Pump Parts	164,615.96
12	Marine Hardware	2,299.62
13	Engine and Fireroom Fittings	5,807.69
14	Lubricants	28,284.74
15	Electric Cable and Insulated Wire	49,361.89
16	Radio and Sound Signal Apparatus	26,074.13
17	Electric Apparatus	1,670,829.37
18	Instruments of Precision and Photographic Equipment	71,076.56
19	Blocks	36,302.30
21	Cordage: Hemp, Jute Oakum, Twine, etc.	16,367.58
22	Wire Rope, Bare Wire, etc.	51,956.63
24	Canvas, Duck, Tentage, etc.	17,069.72
23	Furniture	255,837.59
27	Textiles: Thread, Findings, Floor Coverings	440,270.59
29	Toilat Articles	. 7,708,98
30	Bathroom and Toilet Fixtures	60,290.08
. 31	Non-Electric Lighting Apparatus	1,868.57
32	Fire-Surfacing and Heat Insulating Materials	57,404.06
33	Gaskets, Hose, Packing, Sheet and Strip Rubber,	•
	Hose Fittings, Flexible Tubing	136,608.99
34	Belting, Harness (Leather) etc.	5,937,02
37	Special Wearing Apparel and Athletic Equipment	131,994.90
38	Brooms and Brushes	5,287.01
39	Lumber	998,407.11
40	Machine Tools	718,608.71
41	Hend Tools	455,924.84
42	Builders and General Hardware	247,263.61
43	Bolts, Nuts, Rivets, Screws, Washers, etc.	381,504.85
44	Pipe and Non-Flexible Tubes and Tubing	1,073,116.31
45	Pipe Fittings	2,509,275.72
46	Metal in Bars, including Flat, Hexagon	166,950.56
47	Metal in Plates and Sheets	41,577.33
48	Metal Shapes and Structural	46,394.68
51	Acids, Chemicals, etc.	86,915.52
52	Paints and Paint Ingredients	159,018.04
53	Pens, Pencils, Paper, etc.	34,097.24
54	Office Equipment	86,171.20
		,

PURCHASING AND STORES DIVISIONS STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10.10

Class	Description	Monetary Value
55	Clothing	6,036.14
57	Laboratory Equipment	51,791.73
58	Fire Fighting Apparatus; Railway Equipment	•
	Prefabricating Buildings, etc.	375,776.57
59	Building Materials: Asphalt, Bricks, etc.	178,977.02
60	Boilers and Power Plants	136,228.33
63	Tableware	1,138.74
64	Kitchen Utensils and Apparatus	51,058.63
65	Ovens, Ranges, Stoves, etc.	20,693.02
66	Machinery: Pneumatic Tools, etc.	481,683.58
69	Animal and Hand-Drawn Vehicles	15,174,73
70	Agricultural Implements	1,530.66
71	Badges, Insignia and Medals	1,602.00
72	Leather Boots and Shoes, Leather Clothing, etc.	7,009.47
74	Infantry and Landing Force Equipment	630.93
78	Motorized Equipment & Heavy Construction Equipment	6,711,459.75
83	Airplane Accessories, Equipment & Parts	130.33
	Total Account 10.10 as of February 25, 1950	\$18.997.388.54

PURCHASING AND STORES DIVISIONS TRAFFIC SECTION FEBRUARY, 1950

GENERAL

Upon advice from the Purchasing Division that 10,000 tons of coal were available for purchase at Colstrip, Montana, an emergency proposal was submitted to the rail carriers to publish a rate of \$5.51 per ton from Colstrip, Montana to Hanford, Washington. This proposal received favorable action and the rate was published on one day's notice, resulting in a savings of \$3.66 per ton, or \$36,600 on this purchase.

Due to the coal strike, the Milwaukee Road appropriated 35 cars of our steam coal enroute from Kleenburn, Wyoming to Hanford for use in coal-burning engines on branch lines in Montana. Twelve more cars were held for ten days at Butte, Montana for possible appropriation but upon contacting the General Manager of the Milwaukee regarding this, he ordered the cars released and it appears that no further appropriation will be effected.

Through better utilization of manpower, the Traffic Section was able to reduce their personnel by transferring one Traffic & Rates Clerk B to the Stores Division.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of February amounting to \$43,607.29. This makes a total savings from September 1, 1946 to date of \$1,181,069.97.

P	ERS	ONNEL

	Total Personnel as of 1-31-50	Total Personnel as of 2-28-50	Net Change
Exempt	2	2	0
Non-Exempt	7	6	Minus 1
TOTALS	9	8	Minus 1

SAFETY AND SECURITY

Safety and Security	Meetings scheduled	1
Number of Employees	attending	7
Minor Injuries		0

STATISTICS

Savings Report

 Rate reductions obtained 	irom	the	carriers	s:
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Commodity	Origin	Savings for February	Sevings 9-1-46 through 1-50	Total Savings 9-1-46 to date
Acid, Nitric Acid, Sulphuric Gas, Chlorine Coal, Mine Run Soda, Caustic Ferric Sulphate	Dupont, Wash. Dupont, Wash. Tacoma, Wash. Colstrip, Mont. Willbridge, Ore Stege, Calif.	•	\$1,137,462.68	\$1,181,0 <i>6</i> 9.97

PURCHASING AND STORES DIVISIONS TRAFFIC SECTION

STATISTICS (Cont.)

Savings Report (Cont.)	Savings for February	Savings 9-1-46 through 1-50	Total Savings 9-1-46 to date
2. Freight Bill Audit	\$ 140.06	\$ 45,876.13	\$ 46,016.19**
3. Loss & Damage and Overcharge Claims	757.01	91,481.39	92,238.40
4. Ticket Refund Claims	45.19	7,442.73	7,487.92
5. Household Goods Claims	23.37 \$44,572.92		13,843.71 81,340,656.19
** Includes \$19,495.23 for the AE	C		
Work Volume Report			
Reservations Made	Rail Air Hotel		45 75 68
Expense Accounts Checked			128
Household Goods and Automobiles	Shipments Insurance Furniture Claims Co	Arranged Inbound Traced Riders Issued . Repair Orders llected - Number llected - Amount	7 4 11 1 3 \$ 23.37
Ticket Refund Claims	Filed Collected Collected		15 9 \$ 45.19
Freight Claims	Filed Collected Collected	- Number - Amount	13 10 \$757.01
Freight Bill Audit Savings			\$140.06
Freight Shipments Traced		•	73
Quetations	Freight R Routes	ates	150 101

PURCHASING AND STORES DIVISIONS TRAFFIC SECTION

STATISTICS (Cont.)

	· · · · · · · · · · · · · · · · · · ·		
Work Volume Report (Cont.)			
Bills Approved	Air Freight Boat Shipment Air Express Carloading Express Rail Truck	2 3 4 68 125 358 181	
Carload Shipments Report of Carloads Received	Inbound - GE Others Outbound - GE Others	424 28 90 0	
Report of Carloads Received			
Atkinson & Jones Construction Com	nany Merchandise Steel	1 2	
E. J. Hauserman	Steel Partitions	4	
Richland Transportation Company	Coal		28
General Electric Company	Asphalt Caustic Soda Cement Chemicals Chlorine, Liquid Coal Electrical Equipment Express Ferric Sulphate Forrous Ammonium Sulphate Lime Merchandisc Nitric Acid Oxalic Acid Petroleum Oil Phosphoric Acid Pipe Fittings Salt Soda Ash Sulphuric Acid	1 11 15 3 1 353 1 2 5 1 1 3 14 1 1 1 1 2	
	Tebles	<u>l</u>	424
Total Entire Project			452

EMPLOYEE AND COMMUNITY RELATIONS DEVISIONS

SUMMERY -- FEBRUARY, 1950

A total of 1,349 applicants were interviewed during February, 304 of which were individuals who applied for employment with the Company for the first time. In addition, 321 new applications were received through the mail. Open requisitions increased from 86 at the beginning of the menth to 103 at the end of February. Total plant personnel increased from 7,431 to 7,464. Turn-ever rate, including terminations due to lack of work, was .94%. Turn-ever rate, exclusive of terminations due to lack of work, was .99%. A visit was made to the Yakima Valley Junior College, Yakima, Washington, and the Central Washington College of Education, Ellensburg, Washington, in order to ascertain the availability of persons who have had two years college education to fill positions in Health Instrument and Technical Divisions. Recruitment of stenographers was conducted in San Francisco and Les Angeles, Califernia. This recruitment, coupled with that conducted previously in the Northwest, has resulted in 43 stenographers being obtained.

The Instructions Letter on Procedure for Disciplinary Action" was distributed to all supervisors during February. 82 visits were unde to employee off work because of illness. Two employees retired and one employee death occurred during the month. Organization was developed to handle the Red Cross Drive. Insurance claim forms were distributed to Our Lady of Lourde: Hospital in Pasco, Washington. 20 suggestion awards, totalling \$ 300, representing an estimated savings of \$ 3,456, were granted to employees during the month. The largest award was \$100, given to a Maintenance Division employee. Two Workman's Compensation hearings were attended during February.

45 supervisors participated in the 40-Hour Supervisors Training Program during February. Luncheon was given on the last day of this Program for the participating supervisors with several members of Management as quests. Current Event Program on Economics was presented to supervisors during a three-week period in February with 518 supervisors in attendance. Programs on the importance of accountability for source and fissionable material were prepared for dissemination to those Divisions handling this material, and were presented to 32 employees in the Technical Divisions. A Representative of the Training and Program Development Group addressed the Richland Chamber of Commerce on February 14, 1950.

Meetings were held between MIRB representatives, the Company and representatives of the Hanford Industrial Firemen's Union for the purpose of setting up the consent election, which was conducted on February 23 and 24. The results of the election indicated that the Industrial Firemen desired representation by the Hanford Atomic Metal Trades Council. The Technical Engineers and Architects Assn. withdrew their petition without projudice the day before the scheduled hearing. In preparation of the possible runegotiation of the HAMTC - GE Agreement, an analysis of the irticles of the Agreement, all grievances and instructions letters was begun. Two meetings were held with the Council Grievance Committee. Cutside personal contact was completed in connection with the annual Northwest Wage Survey. An analysis of the survey figures in connection with the comparison of the rates paid General Electric Company employees with the wage rates paid by participating concerns in the Survey was started. A series of conferences were held with A.E.C. authorities relative to a submitted request for authorization to pay a number of employees specific amounts of money due them as a result of the application of the new nonunit progression schedule.

Public information activities of the Nucleonics Department News Bureau during the month of February included the release of 15 news stories to the "local list". In addition, the list of 72 newspapers, wire services, and radio stations in the Pacific Northwest received 9 news releases.

Special requests for information to be used in news stories continued to occupy a large part of the time of News Bureau personnel during the month of February. Twelve news stories were prepared in reply to requests received from the TRI-CITY HERAID, 7 for the Richland VILLAGER, and 2 for the Spokane CHRONICLE representative in Richland.

A special feature story concerning Hanford Works Security Patrolmen, written at the request of the Richland VILLAGER, was also sent to papers in Yakima, Spokane, and Walla Walla.

Special Programs completed the design of special Security reminder disks for the Hanford Works telephones and the order was placed through the Purchasing Division during the month.

Other Special Programs assignments during the month included design and production of the Hanford Works Safety Topic of the Month poster for March, the cover for the March safety meeting discussion material booklet, the four covers for use in the forthcoming Richland telephone directory, editorial work, design and photography work for a special supplement to Hanford Works NEWS commemorating the 100-D Area's third injury-free year, as well as special safety citation cards for distribution to employees of 100-D Area, and two letters for the General Manager's signature which were distributed to all Hanford Works employees.

Four issues of the Hanford Works NEWS were published during February and "Candid Camera" was inserted in the February 3 issue. The WORKS NEWS was instrumental during the menth in carrying to all Hanford Works employees the message the General Manager had presented earlier during a special supervisors' meeting.

The WORKS NEWS also published during the month a special issue devoted to Valentine's Day, and served community programs through publicity concerning the observance of National Boy Scout Week, and the Red Cross Drive.

A new feature, the responsibility of the Women's Feature Writer, was introduced in the WORKS NEWS during February. It is called "What's Doing", and provides a chatty schedule of events approximately one week in advance as a service to readers of the plant newspaper who are seeking recreation in Richland.

A program of publicity for the Community Activities Division "Kite Flying Contest", was designed by the Community Divisions Public Information Supervisor and approved by the Community Activities Division during the month. In addition, this Supervisor assisted in preparing an up-to-date description of Richland, Washington, for use by the Employment Division in corresponding with prospective employees of Hanford Works.

A threat to poison 1,000 dogs in Richland received the attention of the Community Divisions Public Information Supervisor and a method of answering residents' questions concerning it was designed and agreed to by the Richland Patrol Division Chief.

A considerable increase has been experienced in the requests for institutional motion pictures received by Public Functions and Services, necessitating the setting up of more detailed schedule records and sending out of additional information concerning movies available.

The Public Functions and Services Supervisor discussed radio program possibilities with the management of three radio stations in this area during the month and found them very receptive to the services he proposes to offer.

Sixty-nine photo assignments were completed by the Hanford Works Photo House during the month, an increase of 29 over the previous month. Color photography service, rendered primarily to Kadlec Hospital, increased approximately 50 per cent over the previous month.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

FEBRUARY, 1950

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

Effective February 13, 1950, a Messenger in the Investigations and Files Group was transferred to the Technical Divisions and upgraded to a Stenographer-Typist "D".

Effective February 23, 1950, a Stenographer-Typist "B" was employed in the Investigations and Files Group as a replacement for the Stenographer-Typist "B" who was transferred to the Maintenance Division effective February 27, 1950, and upgraded to a Stenographer-Typist "A".

Employee Earvices:

There were no organization changes in this group during the month of February.

Training and Program Development:

There were no organization changes in this group during the month of February.

Union Relations and Wage Rates

Effective February 1, 1950, Benj K. Phillips, Assistant Manager, was transferred from the Design and Construction Divisions to this Division to handle Union Relations for sub-contractor personnel.

Effective February 6, 1950, a Stenographer-Typist "A" was transferred to this Division from the Design and Construction Divisions.

Effective February 20, 1950, Clement J. Sheeren was transferred from Purchasing and Stores Division as a Staff Assistant.

Community Relations

Effective Fabruary 13, 1950, a General Clerk "B" was employed to replace a General Clerk "B", who terminated voluntarily effective February 24, 1950.

Effective February 17, 1950, a Publicity Writter was employed for the News Bureau.

Number of employees on payroll	February, 1950
Beginning of the month	82
End of the month	82
Total Change	0

ACTIVITIES

Employee Rolations

Employment:

		January, 1950	February, 1950
Applicants	interviewed	1,298	1,349

304 of the above applicants interviewed in February were individuals who applied for employment with the General Electric Company for the first time. 321 new applications were received through the mail.

Open Requisitions:	January, 1950	February, 1950
Exempt	1	1
Nonexempt	86	103

of the 86 open, nonexempt requisitions at the beginning of the month, 53 were covered by interim commitments. Of the 103 open, nonexempt requisitions at the end of the month, 66 were covered by interim commitments. In addition, 1 exempt requisition was being processed at the end of the month.

	January, 1950	February, 1950
Employees added to the rolls Employees removed from the rolls	102 76	103 70
Net gain or loss	+ 26	+ 33

Of the 70 employees removed from the rolls during February, 3 were terminated due to lack of work of which all were outside of the bargaining unit.

Turn-over:	January, 1950 Male Female	February, 1950 Male Female
Including employees laid off for lack of work	.87 % 1.67 %	.484% .45%
Excluding employees laid off for lack of work	.57 1.4	2.83 2.75
Over-all plant turn-over:	January, 1950	February, 1950
Including employees laid off for lack of work	1.02 %	.94 %
Excluding employees laid off for lack of work	.73	. 899

At the end of February, there were 733 employees in lack of work status divided into the following categories:

	January, 1950	February, 1950
Nonbargaining unit employees Bargaining unit employees	507 240	503 230
Total	747	733

During the month of February, 19 new requests for inter-Divisional transfers were received and reviewed by the Employment Office. Transfers were effected for a total of 9 employees as a result of these requests. In addition, 6 transfers were effected for employees who had received notice of termination due to lack of work.

During February letters were written to 28 former employees who are in lack of work status, informing them of the general activity from an employment standpoint since the dates of their removals.

Effective February 20, 1950, H.W. Instructions Letter No. 141, entitled "Policy on Employment of Individuals Relieved From the Armed Services", was prepared and issued.

As a result of an apparent need for the procurement of individuals who have had two years college education to fill such positions as inspectors in the Health Instrument Division, and possibly laboratory assistants in the Technical Division, a visit was made to Yakima Valley Junior College, Yakima, Washington, and Central Washington College of Education, Ellensburg, Washington, on February 23 by Mr. P. A. Bundy, Supervisor in charge of Employment, Nonexempt Personnel, and Mr. R. E. Curtis of the Technical Personnel Office. This visit was made for the purpose of informing Placement Officers of these two institutions of our current needs for this type of personnel, and to ascertain the availability of such individuals. This visit indicated that both of these institutions have very modern facilities, and assurance was given by representatives that they desire to cooperate in every way possible.

As a result of recent recruiting in Los Angeles and San Francisco, California, together with the recruiting previously done in cities of the Northwest, as well as Denver, Colorado, all requisitions for stenographers were filled except 11. As against these 11 unfilled requisitions, 25 stenographic applicants are presently in process. Results of the Los Angeles and San Francisco recruitment trip are as follows:

		Los Angeles	San Francisco
Total stenographers	interviewed	16	18
Total offers made		16	4

The screening of candidates by the California State Employment Service, particularly in Los Angeles, was excellent.

Employment Statistics:

Number of Employees On R	colls		1-31-1950	2 -28- 1950
Exempt Nonexempt			1,630 5,801	1,639 5,825
	TOTALS		7,431	7,464
	ADDITIONS			
		Exempt	Nonexempt	Total
New Hires Re-engaged Re-activations Transfers (from other pl	ants)	1	14	15 18
Actual Additions Payroll Exchanges		14 7	89 * 0	103
	Gross Additions	21	89	110
	TERMINATIONS		•	
Actual Terminations Removals from Roll Payroll Exchanges		£ 1,	29	
	Gross Termination	ons 12	2 65	77

Approximately 71% of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Another job (b) Personal reasons.

	1-1950	2 -1 950
Applicants interviewed Fingerprint impressions taken (in duplicate) Procurement letters written	1,298 177 900	1,349 199 710

^{*} Transferred from Weekly Salary Roll ** Transferred to Monthly Salary Roll

ABSENTEEISM STATISTICS (Weekly Sclary Roll)*

	1-1950	2-1950
Male Female Total Plant Average	2.41% 3.91 2.77	2.45% 3.41 2.76
INVESTIGATION STATISTICS	٠	
Cases pending at beginning of month Cases received during the month Cases closed Cases pending at month end Cases found satisfactory for employment Cases found unsatisfactory for employment Cases closed before investigation completed Special investigations conducted	523 165 107 554 100 0 2	554 224 114 664 178 4 5

^{*} Statistics furnished by Weekly Payroll Division

Employee Services:

During the month of February, Instructions Letter No. 140, entitled "Procedure for Disciplinary Action", which has been in the course of preparation during the past several months, was completed and distributed to all supervisors.

Arrangements were made to have representatives of the Federal Internal Revenue Bureau in Richland during the weeks of February 6 and 13. Space was provided for these representatives to assist our employees in preparing their 1949 Income Tax Returns. In addition, the Employee Services Counsellor scheduled visits to the various areas during this two-week period to assist these employees who, because of shift schedules, were unable to obtain assistance in Richland. During this two-week period income tax assistance was furnished to approximately 1,200 employees.

On February 6, 1950, at the request of the Public Works supervisor in the Community Division, a meeting was held with approximately 45 cmployees of that group for the purpose of discussing problems in connection with the G.E. Group Health Insurance Plan. At the same time, information was also furnished to this group on other Employee Benefit Plans.

As the result of several contacts by employees of the Medical Division regarding a number of grievances, which they had in connection with their work, a neeting was held with a committee of nurses, at which time the various problems presented by these nurses were discussed in detail. Subsequent to this meeting, the information obtained was furnished to hospital management, and all matterswere again discussed in some detail in an

Employee and Community Relations Divisions

effort to improve the employee relations in that facility. Hospital management advised that regular meetings are being held by Management with the employees, at which time the various problems concerning the working conditions of the nurses were discussed, and every effort was being made to solve these problems on a mutually satisfactory basis.

During the past month, a visit was made to Our Lady of Lourdes Hospital in Pasco, Washington, for the purpose of supplying this Hospital with the necessary claim forms used under the G.E. Health Insurance Plan. These forms were supplied to the Pasco Hospital due to the fact that quite a number of employees reside in Pasco and Kennewick. A supply of these forms by the Pasco Hospital will permit the Metropolitan Insurance Company to make claim payments direct to the Hospital.

The Employee Services Group was again charged with the responsibility of organizing and conducting the plant drive for the American Red Cross, which will be held during March. During February, a number of conferences were held in order to obtain a Drive Chairman from each Division. Preliminary material in connection with this Drive was also distributed.

In reply to the recommendation for hospital insurance made by a consultant group, which recently net with the Kadlec Hospital Management, the Employee Services Group conducted an analysis of the recommended plan comparing it with the present G.E. Group Health Insurance Plan, and submitted a report setting forth the advantages and disadvantages of each. As the result of this analysis the advantages appeared to be prependerantly in favor of the present G.E. Health Insurance Plan.

The following visits with absent employees were made during the month of February by representatives of the Employee Services Group:

Kadlec Hospital	67
Employees at home	15
Salary checks delivered to employees	
confined at Kadlec Hospital	53

The following trips to the Areas were made by the Employee Services Group:

Posting	of union notices	4
Holiday	notices and Red Cross	
postura	5	2

The following employees retired during February:

Carl Knutson, Community Divisions; and Louis H. Wendorff, Community Divisions.

One employee death occurred during the month of February, namely:

Plant Security and Services Division.

Employee and Community Relations Division

Assistance was rendered to the members of the family of the deceased with respect to all Employee Benefit Plans and Social Security information.

During February 4 employees in lack of work status requested that their separation be changed to resignation in order that their pension contributions might be refunded.

Four publications of Employee Benefit Plans information were prepared and released to the Works News during February.

Eight certificates were issued for Company appliances during the month of February.

Suggestion System

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

	1-1950	2-1950	Total 7-15-	l since -1947
Suggestions received Investigation reports completed Awards granted by Suggestion Commi Cash Awards	131 72 ttoo 20 \$ 405.	98 107 20 \$ 300.	\$	4,497 4,010 541 7,365.
Estimated savings resulting from suggestions	5,030.	3,456.		

The February 24 issue of the Works News featured a front page story of a \$ 100 award made to an employee in the Maintenance Division, and in addition, gave names of other award winners for the month.

During the past nonth, the Suggestion Committee has indicated a tendency to increase its basis of awards from 5% of the estimated savings to $7\frac{1}{2}\%$. This basis will be used as a guide in making future awards.

Insurance and Compensation

Public Liability

Approval has been received from the A.D.C. for settlement of this claim in the amount of \$25,000.00, plus claimant's probate expenses. This information was forwarded to the Travelers Insurance Company. In view of the fact that a counter-claim has been submitted in the amount of \$65,000.00 by the claimant's attorneys, negotiations are still in process with that firm by the Travelers Insurance Company concerning this claim.

Employee and Community Relations Divisions

. On January 20, 1950, the claimant, an employee of the Medical Division, while proceeding along the walk-way beside Garmo's Food Store, at the time snow was being removed by Company employees from the roof of the store was struck on the head by snow and ice which fell from the top of the building. She received minor head injuries. Investigation indicated that it was possible that the injury resulted from snow being dropped over the side of the building by one of the Company employees. Accordingly, on February 7, this claim was reported to the Travelers Insurance Company for investigation.

Compensation

On March 9, 1949, the claimant, an employee of received an injury to his right knee, which he reported to First Aid on March 11. A claim was submitted to the Department of Labor and Industries, who in turn made a permanent partial disability award of "10% amputation value of the right leg at or above the knee". This award resulted in a payment of \$ 342.50. Upon recommendation of the Industrial Medical Division, an objection was made to this award on the grounds that it was excessive. Investigation also revealed that the claimant applied for Unemployment Compensation payments, which are conditional upon the claimant being available and able for work. In addition, in a signed statement made by the claimant at the time the injury was reported, he stated that his knee did not hinder his work, but might possibly give him trouble in the future.

On January 30, 1949, the claimant sustained injuries to his shoulder and head while in the employee of the , which claim was reported to the Department of Labor and Industries. On February 15, 1950, the Department awarded \$ 360 to the claimant, which is the maximum of 10% allowed for unspecified disability. Objection has been made to this award because the medical examination revealed that the award was based on subjective complaints only.

On July 19, 1949, the claimant reported that he had sustained a hernia while lifting paint on July 15, 1949. Opposition was made to allowance of this claim as it was not possible to verify the accident or establish an incident of injury other than that described by the claimant. The Medical Division felt that there was reasonable doubt that the injury was occupational. On January 5, 1950, the Department refused a claim on the grounds that there was no proof of injury sustained during the course of employment.

In the case, entitled "Olympia Brewing Company versus Department of Laber and Industries", the Supreme Court ruled that the burden of proof to show injury is on the claimant. Accordingly, in view of this decision, the Company has taken the position that they will oppose the allowance of any claim of injury which cannot be verified by investigation, particularly where a delayed report is made by the claimant.

Employee and Community Relations Divisions

On January 19, 1948, the claimant, received an injury to his while employed by the left arm and left foot. On September 17, 1949, the claimant was examined by a Spokene physician for a permanent partial disability rating. At that time, the physician recommended a permanent partial disability award of 30% for unspecified injuries. On November 16, 1949, the same physician revised this rating without additional examination and recommended a permanent partial disability award of 5% of the maximum allowed for amputation of the left arm at or above the elbow, and 60% of the maximum allowed for amputation of the left leg below the knee. As the result of this reconnendation, the total award was \$ 1,588.15. The Company objected to this rating because of the discrepancy between the September and November ratings, and also because this man is presently employed as a millwright, and it is felt that if the claimant deserved this permanent partial disability rating, he would not be able to perform his present job. Accordingly, it was requested that this claimant be examined by two other doctors designated by the Department of Labor and Industries.

On August 4, 1948, this claimant sustained an injury to his right hand. On August 26, 1949, the claiment was examined by a hand specialist who recommended a 20% permanent partial disability award of injury to the right hand. The claimant appealed this award alleging in his appeal that he was totally disabled from pursuing his normal occupation. At a hearing held in Seattle on February 2, 1950, the examining physician testified that there was a disability, but he was not certain that it could be attributed to the injury, nor would the physician state that the claimant was totally and permanently disabled. The claimant requested that his plea be changed in order that he might be awarded 75% permanent partial disability. From a review of the testimony, the Attorney General recommended that the claimant and the employer compromise on 50% award on permanent partial disability. This compromise was agreed to, and so stipulated in the record, providing that this agreement did not constitute an admission by the Company that the permanent partial disability was 50%.

Some time during November, 1946, the claiment reported to First Aid that he had sustained an injury to his hand during September, which later resulted in the formation of a ganglion of the wrist. The claimant was examined by four different physicians at two different times. Two physicians stated that there was a disability, but it was not job connected. The other two physicians stated that there was a disability, and that it was job connected. A hearing was held on February 8, 1950, in Yakima, Washington, at which time the testinony of one witness was taken, and a continuance granted for the purpose of presenting testinony of all the examining physicians.

Due to the impending construction program, a meeting was held between representatives of the Atkinson and Jones Safety Division and the Medical, Construction Safety, and Insurance and Compensation Divisions of the General Electric Company during the latter part of February, in order to

establish a definite procedure for the investigation of injuries, which result in claims being report to the Department of Labor and Industries. During the previous construction program the Atkinson and Jones Safety Division had the responsibility of investigating all injuries of sub-contractor employees, where such sub-contractors were covered by the General Electric Company with respect to Workman's Compensation. About 50% of these injuries were investigated. No definite solution has been arrived at as to the procedure which should be followed, but further consideration will be given to this matter in order that complete information will be received, and proper reports made to the Department of Labor and Industries concerning such claims.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees at this Works was furnished to 46 insurance companies and investigation agencies during the month of February.

	1-1950	2-1950	Total since 9-1-1946
Claims reported to the Department of Indorand Industries	20	32	3,243
Claims reported to Travelers Insurance Company	9	18*	416

^{*} Of the above claims reported during February to the Travelers Insurance Company, 16 were property damage claims, and 2 were bodily injury claims.

Training and Program Development:

During the week of February 13 - 17, the 40-Hour Supervisors Training Program was again presented to 45 supervisors. As an addition to this program a Friday noon luncheon was held, which all of the members of the 40-Hour Training Program attended. In addition, 6 members of management were invited as guests. It is planned to continue these luncheons inviting different members of management each time.

During the weeks of February 13, 20, and 27, a Current Event Economics Program was made available for all exempt employees. This program consisted of a brief statement with respect to Mr. C. E. Wilson's statement, entitled "Big Progress and Big Business Go Together". In addition, the sound movie film, entitled "The Price of Freedon", obtained from the National Association of Manufacturers was also exhibited. At the close of the meeting, copies of the book written by Mr. John T. Flynn, entitled "The Road Ahead", were distributed to those attending. A total of 518 supervisors participated in this program.

In line with the desirability of impressing upon supervisors the importance of accountability for source and fissionable material, a series of conference.

were held with the Hanford Works Accountability Representative for the purpose of developing a training program on procedures for the handling of such material to be presented to the employees of those Divisions, which are required to have such procedures in effect. As the result of these conferences, a meeting was held during the latter part of February, with 32 Technical employees. This program consisted of stressing the importance of accountability procedures to be followed by that particular group. In addition, a wire recording by Mr. F. K. McCune summarizing the basic contractual obligations that we in General Electric assume under our contract with the Atomic Energy Commission with respect to such material, was also presented.

During February, 11 Supervisors Employee Relations Handbooks were issued personally to supervisors in various Divisions. Under date of February 16, 4 additions and 5 revisions to the Handbook were distributed. At the present time, there are 4 additions and 5 revisions awaiting printing.

During February a total of 73 new employees were given orientation. Of this number, 72% elected to participate in the Group Life Insurance Plan, and 84% elected to participate in the G.E. Group Health Insurance Plan. In addition to the above, 16 re-engaged employees were given orientation, of which 78% elected to participate in the Group Life Insurance Plan, and 79% elected to participate in the Group Health Insurance Plan.

On February 20, a set of Instructors Manuals for the Sales Analysis Institue course was received from H. S. Bigelow, New York City, for review.

On February 20, the first six chapters of Mr. L. R. Boulware's book on economics, entitled "You and What You Want", was received for review.

At the request of the Community Patrol Division a special meeting on the subject of exempt ratings was conducted with six members of the supervisory staff in that group.

On February 14, K. O. Barker made an address on the subject, "What General Electric is Doing to Consistently Improve Employee--Employer Relations", to the Richland Chamber of Cormerce.

Union Relations and Wage Rates

Union Relations - GE Personnel

On February 6, a meeting was held between NLRB representatives, the Company and a member of the Hanford Industrial Firemen's Union for the purpose of discussing the forthcoming consent election which was scheduled for February 23 and 24. Election notices were subsequently received from the NLRB and posted in all areas.

A pre-election conference was held on February 17 between Company, Union and NLRB representatives for the purpose of reaching an agreement on the eligibility lists, instructing observers as to their duties and making any final arrangements necessary for the election.

The consent election was conducted on February 23 and 24. Official election observers appointed by the Company and the Union were instructed as to the election procedure by representatives of the NIRB. The results of the election were tallied the following day with results as follows:

Number	of	employees eligible to vote	109
		employees who voted	108
		votes for union representation	89
		votes against union representation	19

On February 7, the day before the scheduledhearing in the case of the Technical Engineers and Architects Assn., a telephone call from the NLRB in Seattle relayed the information that this group had withdrawn their petition without prejudice, and the hearing was therefore canceled.

In preparation for the possible renegotiation of the HAMTC - GE Agreement, letters were sent to division superintendents requesting any suggestions with respect to revisions or clarification of the language used in the various articles of the existing Agreement. In addition, an analysis was being made of all grievances, instruction letters and other interpretative documents which have accumulated since the Contract's origin, in order to establish firm basis for any required modification.

On February 20, an announcement was distributed to all supervisors, clarifying that portion of the Agreement pertaining to holiday call-in procedure.

Grievance Statistics:

Sixteen grievance reports were received during the month, bringing the total received this year to 40. Two hundred and seventeen grievances have been received since the grievance procedure was established. Grievances were sent in this month from the following divisions:

Minor Construction Mfg. Electrical Mfg. Instrument Mfg. Power Mfg. "S" Mfg. "P" General & Office Services Separations Tech. Village Labor	1 3 2 1 3 1 1
Village Maintenance	2
Total	16

Employee grievance reports received during the month of February were regarding the following subjects:

Misc.	1
Hours of Work	2
Overtime Rate	4
Sick Leave & Days Off	1
Seniority	3
Wago Rates	5
Total	16
Seniority Wago Rates	-

The status of all grievances received to date is as follows:

•	1949	1950	Total
Settled satisfactorily, Step I	52	8	60
Not Scttled satisfactorily. Step I	125	32	157

Of the 32 grievances received this year which were not settled at the Step I level, 15 have been satisfactorily processed at the Step II level and were settled. Only 10% of the total grievances received this year have been submitted by employees outside the bergaining unit. Thirty-eight per cent of this year's grievances were submitted by employees in only 7% of the divisions.

Mcctings:

The Council Grievance Committee and the Company Negotiating Committee met twice during the month for the purpose of processing grievances at the Step II level. All supervisors were informed regarding the disposition of the grievances discussed at these meetings.

Union Rolations - Subcontractor Personnel:

The following items were of primary interest during the month of February and received considerable attention by way of discussions, comforences and correspondence.

Plumbers Travel, April, May, June, 1948
Master Project Agreement covering all crafts, and General
Electric's participation therein
Tri-City Contractors' Association, project participation
therewith

The following matters were subject of project negotiations during the month:

Hanford Works Addendum covering Plumbers and Steamfitters employed by CPFF subcontractors. This necessitated trips to Seattle and Portland for negotiations.

Travel Time to be paid to Plumbers and Steamfitters to be employed by Lump Sum Subcontractors.

Brick Layers

Request for Reimbursement Authorizations handled during the month:

Operating Engineers - Precision Mechanics Technical Engineers Salaries Plumbers Travel, April, May, June, 1948 Teamsters Wages Painters Wages Laborers (Mortar Mixers) Wages All crafts - meal time compensation Electrician and Linemen High Pay

Reimbursement Authorizations received:

Linemen Double Time - No. 79
Laborer (Mortar Mixers) - Revision of effective date - No. 41
Electrician (Wiremen) - Double Time - No. 48

Wage Rates:

Outside personal contact was completed in connection with the annual Northwest Wage Survey. The accumulated data was summarized, compiled and printed, and charts drawn. The survey will be distributed to the participating concerns within a few days.

An analysis of the survey figures in connection with the comparison of the rates paid General Electric Company employees with the wage rates paid by participating concerns in the survey was started.

On February 15, 1950 a Reimbursement Authorization was submitted for the modification of the transfer rules regarding Coal Handlers to Miscellaneous Operators.

A series of conferences were held with AEC authorities relative to a submitted request for authorization to pay a number of employees specific amounts of money due them as a result of the application of the new nonunit progression schedule. No approval has been received as yet.

Reimbursement Authorization No. 89 was received on February 24, 1950, approving the proposed monthly rates for Firemen, Lieutenants, and Captains, under the Two-Platoon System of operation which is to be put into effect in the community. The effective date was not indicated in the authorization but the community officials plan to change from the present shift rotation system of operation to the Two-Platoon System on March 20, 1950.

Due to a request of the Accounting Division in connection with the proposed "Appendix C" a review and study was made on all Reimbursement Authorizations to make certain we have complete coverage on all reimbursable items. As a result of this study the Request for Reimbursement Authorization on Coal Handlers was submitted to the AEC.

Miss Patricia Weidenmann was transferred from the Wage Rate Section to the office of Mr. B. K. Phillips. She was replaced by Mrs. Gloria Askew.

The regular routine of reviewing occupations, evaluating and classifying jobs, counseling supervision, checking transfers and reclassifications, was continued and involved action to the following extent:

Transfers Weekly to Monthly Approved	7
Nonexempt Transfers Approved	25
Job Reclassifications Approved	134
Automatic Increases Approved	195
Merit Increases Approved	8

Community Relations

"Public Information" - Community

Informative newspaper releases made during the month to the "Local List" of newspapers and radio stations served, which includes the VILLAGER, TRI-CITY HERALD, Spokene CHRONICLE, Hanford Works NEWS, Walla Walla UNION-EULLETIN, Pasco NEWS, Yakima MORNING HERALD, Lind LEADER, radio stations KPKW, KWIE, and KIT, including release dates were as follows: (A large number of both local and general news releases are being sent out for immediate release. In such cases the date on which the releases were sent from this office is indicated below).

- 2/6 People in this area were warned that walking on the thawing ice in the Yakima River was a dangerous practice and that it should be discontinued.
- 2/7 The Richland Patrol Chief announced that Washington State driver's licenses were available at Richland Patrol Headquarters here each Monday from 9:00 a.m. to 5 p.m.
- 2/7 A series of coming power outages were announced.
- 2/13 A program for improving Richland streets was announced by the Public Works Superintendent.
- 2/14 The Richland Fire Chief warned residents against placing hot ashes in inflammable containers and called attention to two recent fires caused by this practice.
- 2/14 Attention was called to 3 fires in Richland that resulted from children tampering with electric heaters. Measures for the prevention of such fires were suggested.
- 2/14 Publicity was given to a letter from the President of the National Safety Council which praised Richland's Traffic Safety record.

 The letter was received by the Safety and Fire Protection Division.
- 2/16 The placement of a series of advertisements acquainting businessmen in the Northwest with the opportunity to set up shop here was explained in a local release.
- 2/20 A series of coming power outages was announced.
- 2/21 It was announced that the Superintendent of Community Activities Division participated in a meeting at Seattle for the purpose of establishing more camps and parks in the State of Washington.
- 2/21 G.E.'s program for correcting damage done by dust and sand and for prevention of future damage was sent to local media.
- 2/23 The establishment of 15-minute bus service between the uptown and downtown business districts was announced.

- 2/27 The Community Engineer announced that approximately one mile of Duane Avenue would be resurfaced and widened in the near future.
- 2/28 The award of a contract for the cleaning of furnaces and flues was announced.
- 2/28 A release explaining a change in the time when Richlanders can obtain drivers licenses at Richland Patrol Headquarters was distributed.

VILLAGER Only

- 2/6 Project liability for water damage in residences was explained at the request of the VILLAGER.
- 2/13 A feature story based on the Health topic of the month, emotional disorders, was given to the VILLAGER.
- 2/14 A feature story explaining the dangers of speeding automobiles was released at the request of Community Safety Division.
- 2/15 The steps being taken to provide shuttle bus service between the uptown and downtown business district were explained.
- 2/16 A 1,000 word feature story explaining the typical work routine of a Hanford Works Security Patrolman was prepared for the VILLAGER at their request. Several photographs accompanied the story.
- 2/17 Precautions that are being taken against air raids at Richland were explained.
- 2/20 At the request of the VILLAGER a story explaining measures that are taken to control rats in Richland was released.

TRI-CITY HERALD Only

- 2/1 A question was received regarding the legality of Judge Earle Brown's Justice Court. An answer, prepared by the Law Division, was sent to the HERALD.
- 2/1 A statement of the Company's policy toward hiring members of minority groups was released to the TRI-CITY HERALD at their request.
- 2/2 A statement of the policy at Hanford Works concerning the availability of housing to members of minority groups was given to the TRI-CITY HERALD.
- "Negotiations concerning the building now occupied by Richland Motors and the possibility of that firm constructing another building are underway at the present time, according to a G. E. spokesman. No decision concerning this matter has been reached at the present time." This statement was given to the TRI-CITY HERALD in response to a request.

- 2/8 A news release was given to the TRI-CITY HERALD which answered a question about the removal of snow from Richland streets and another question explaining that "furloughs were given to some 50 men."
- 2/8 Information was given to the TRI-CITY HERAID in answer to questions about the amount of the damage caused to the Bailey bridge as a result of blasting the river ice. Other details about how the bridge will be repaired, how long it will take and the cost of the work were also released.
- 2/10 It was explained in the TRI-CITY HERALD that there is one Negro living in Richland at the present time and that others are expected to live here in the future.
- 2/14 The names of sub-contractors to Atkinson-Jones and the dates on which the contracts were awarded was given to the TRI-CITY HERALD along with the amount of the Richland budget for construction and equipment during fiscal year 1950 and 1951.
- 2/21- A statement of the present rate of construction hiring was released at the request of the HERALD.
- 2/23 A feature story explaining the difference between legal speed limits and safe speed limits was released at the request of Community Safety Division.
- 2,27 The progress of the Hanford Works construction program was described.
- 2/28 In answer to a series of questions the TRI-CITY HERALD was given the cost of Carmichael Junior High School, the number of class rooms, its rated capacity and its present number of students.

"Public Information" - General

7.2

Informative newspaper releases were sent to 72 of the leading daily newspapers, wire services and radio stations in the Pacific Northwest during the month. The release date is given for each story, and they are as follows:

- 2/3 It was announced that overall responsibility for Union Relations of General Electric Company's Nucleonics Department at Richland had been centered in the Employee and Community Relations Divisions.
- 2/4 A news story was sent to the daily list explaining that some 125 linear feet of temporary piling used in the construction of the railroad bridge south of Richland would be removed. A complete explanation of this action as well as other plans for the prevention of damage from breaking up of the ice and possible high waters was included.
- 2/7 It was announced that invitations for bids to construct water lines and fencing at Pichland's sewage treatment plant would be issued on or about February 21.
- 2/21 The award of a ground lease to Spencer-Kirkpatrick Insurance Agency for the construction of a building in Richland's uptown business district was released.

- 2/23 A release stating that final bids had been received on a ground lease for a super market site in the uptown business district was announced.
- 2/27 A new super market building will be built in Richland's uptown business district by Virgil O. McVicker.
- 2/28 It was announced that an amusement park for children will be built near the high school athletic field.
- 2/28 General Electric Company's intention to invite bids for the construction of a laundry building at Hanford Works was announced.
- 2/28 It was announced that the Maneger of the Employee end Community Relations Divisions would address the Parent-Teachers Association at Rosalia, Washington. Employee and Community Relations policies at Hanford Works would be explained.

Other Activities

During February, two local news releases were re-written especially for radio and sent to KPKW, KWIE. It is expected that this practice will be followed as frequently as possible in the future.

On February 9 agreement was made to have the Nucleonics Department General Manager pose for a picture placing the 50,000th dime in a March of Dimes exhibit at Richland Supply Company. Photographs were distributed to local media.

The feature story about Security Patrolmen, written at the request of the Richland VILLAGER, was sent to the Yakima Publishing Company, the SPOYESMAN-REVIEW, and the Halla Walla UNION-BULLETIM. A photograph of patrolmen at the rifle range was sent with a copy of the story. Permission of the VILLAGER was obtained before the story was sent to the other papers because of our original agreement with the VILLAGER that this would be an exclusive story for that paper.

During February signs were placed on the project side of the Yakima River, which stated that the ice was dengerous. Some of the signs were offered to a Mr. Booker, frequent spokesman for the community of Enterprise. He accepted the signs and took charge of placing them on the opposite side of the River.

A photograph of a Hanford Works employee wearing an assault mask, coveralls, gloves and shoe covers was obtained for the A.E.C. Information Officer,

Copies of "A Guide to Richland", prepared by Communities Activities Division, which contain the names of all Richland organizations and describe their activities, were sent to representatives of local media.

The monthly report of significant public relations activities at Hanford Works, 30 for the Month, was prepared for December and January and distributed to key G.E. personnel.

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"Employee Information" - Special Programs

Design, layout and artwork for the covers of the forthcoming Richland telephone directory were accomplished through Special Programs. This included designing material for the outside back cover for the Safety Division, and material for the inside back cover for the Security Division. In addition, the drawing on the front cover of the current telephone book was brought up-to-date by drawing a dial on the telephone. Artwork was accomplished by the Community and Public Relations Division commercial artist.

An order for 4,000 discs which will be inserted in the center of the dials of all plant telephones was placed by Special Programs through the Purchasing Division during February. Design and artwork for the discs, which will act as security reminders, was accomplished by Special Programs through the commercial artist.

Design and production of the safety topic of the month poster for Liarch was accomplished by Special Programs during February. In addition, Special Programs also handled the design and production of the cover for the March safety meeting discussion material. Artwork was handled through the commercial artist, and printing was accomplished through the 700 Area print shop.

Community and Public Relations Division was responsible for producing the February Employee and Community Relations Divisions safety meeting. Coordinated through Special Programs, a safety quiz game was presented at the meeting. The game included representatives of two teams (the men against the women) who advanced paper disks around a numbered "track". Each time a move was made, some point of safety was presented. Those in the audience participated through answering questions indicated on the game "track", and through throwing dice to advance the respective teams. Well received in the Employee and Community Relations Divisions meeting, several other 700 Area groups have requested use of the game for future safety meetings.

Considerable time was spent by Special Programs during February in preparing a safety supplement to commemorate 100-D Area's third major-injury-free year. It is planned to distribute the supplement to all employees in the March 17 issue of the WORKS NEWS. Preparation for the safety supplement involved taking pictures representing the various divisions in 100-D Area, writing captions for the pictures, preparing the layout, arranging for artwork, and obtaining bids for the printing of the inserts from private printing concerns through the Purchasing Division. The supplement, which will be similar in appearance to the Candid Camera inserts, will be printed by photo-offset method by Bushong & Co. of Portland.

In addition to the Safety Supplement, a safety citation card for distribution to 100-D Area employees in commemoration of the Area's third year without a lost-time injury was designed by Special Programs. When completed, the card will contain, in addition to the recipient's name, his badge photo and other identification information, and will be laminated.

Two letters from Vice President Prout were produced and distributed to all Hanford Works employees through Special Programs during February. One

letter commended Hanford Works employees on the excellent safety record achieved during 1949, a major injury frequency rate of 0.714. Special Programs also assisted in the preparation of a letter concerning the request by the publisher of the TRI-CITY HERAID that G.E. and A.E.C. investigate the operation of the kichland VILLAGER. This letter explained that neither G.E. nor the A.E.C. had the right to investigate any Richland organization, and that the right to hold such investigations is not wanted. In each instance, the letters were sent to employees' homes with advance copies to Supervisors at plant addresses.

Special Programs also assisted in the production and distribution of a letter to all Industrial Firemen which explained that plant firemen have the same rights and privileges as all other Hanford Works employees, and which urged them to vote in the NLPB supervised election to determine whether or not industrial firemen wished to be represented in collective bargaining matters with the Company by the Hanford Atomic Metal Trades Council.

Production of 2,000 report covers for the Health Instrument Divisions was accomplished during February through Special Programs. The covers were designed through Special Programs during January. Arrangements also were made by Special Programs for the printing of a special quarterly report cover for the Health Instrument Divisions

Production and collation of the Employee and Community Relations Divisions booklets setting forth the accomplishments, objectives and organization of the Divisions was handled through Special Programs.

A member of Special Programs attended the February meeting of the Health Activity Committee in an advisory capacity. Arrangements were made for publicizing the March health topic at this meeting. To help in acquainting the families of Hanford Works employees with the February health topic, "Signs of Our Times", a news story on this topic was prepared by Special Programs and released to newspapers through the News Bureau.

Final draft of the G.Z. Employees Services Funi promotion plan was produced through Special Programs during February, with the first step in the plan scheduled for the middle of March.

The following classified recruiting advertisements for stenographers were placed by Special Programs for Employment on the dates and in the newspapers shown below:

Los Angeles EXAMINER Feb. 5, 6, 7, 8
Los Angeles TIMES Feb. 5, 6, 7, 8
Los Angeles HERAID & EXPRESS Feb. 6,7

San Francisco CHRONICLE Feb. 8, 9, 10
San Francisco EXAMINER Feb. 8, 9, 10

The above advertisements were placed to coincide with the dates a recruiter was in the two cities. Due to short notice, it was necessary to telephone the advertisements to Mr. Nm. Kyte of the Los Angeles office for insertion in Los Angeles newspapers in order to insure publication on the dates

required. Arranging for payment for classified advertisements, including obtaining the necessary vouchers and tear sheets, is handled by Special Programs.

During February, considerable time on off hours was spent by Special Programs Supervisor in preparing for the 1950 Red Cross fund campaign in his capacity as Information Director for the Benton County Chapter of the American Red Cross. Activities included laying out an overall publicity campaign, portions of which were put into effect during February, assisting in ordering solicitation supplies, ordering publicity materials, arranging for publicity assistance in other Benton County towns, establishing liaison with local radio stations for assistance in promoting the Red Cross fund campaign with local publicity and for scheduling special Red Cross recordings of "name" entertainment shows, and assisting in basic campaign strategy. One of the significant publicity accomplishments was the promotion of a fund campaign "Kick-off Party" at the Tri-City Country Club on February 28. Approximately 13 entertainment groups from this area donated their talent to the party. Radio station KWIE, through whom the party was arranged, broadcast the entertainment for nearly 1 1/2 hours.

"Employee Information" - WORKS NEWS

Four issues of the Hanford Works NEWS were published during February and "Candid Camera" was inserted in the February 3 issue.

The lead story for this issue was devoted to a review of the talk which the General Manager made to all Hanford Works Supervisors, and important highlights were mentioned. Pictorial coverage was given to the skit which accompanied the talk and the same treatment was given to the announcement of the Supervisors' Association being organized. Significant safety achievements such as the two consecutive injury-free years attained by the 700 Area and the enthusiastic interest in the Transportation Division contest were included. In line with the trend of the WORKS NEWS toward headlining good news reporter articles with a by-line, an article by one of the area reporters was given lead position on the reporter pages. Pictorial coverage was given on rescue operations performed by the Transportation Division during the flood of the Yakima River. A member of the WORKS NEWS staff was able to give an eye witness account of the rescue operations. A new column entitled "What's Doing " was introduced in the first issue of the month of February which is designed to acquaint Hanford Works people with recreational activities and items of general interest in the Community.

Special effort was made in the February 10 issue to include pictures with the Valentine spirit. A special feature devoted to a Hanford Works employee who will appear on a national radio hook-up in the "Bride and Groom" show was featured on the front page. Announcement was made of the results of the second quarter of the Maintenance Division Safety Derby with the highlights of the contest for that quarter. At the request of the Boy Scouts organization, recognition was given to their 40th anniversary.

In the February 17 issue, particular emphasis was given to the announcement that the Red Cross Drive would be launched on March 6. A lead story showing the national recognition Hanford Works has gained for their fine

safety program was included in this issue and was based on a congratulatory letter to the Safety Division from the National Safety Council. In an attempt to give adequate publicity on the membership drive for the Supervisors' Association, a story was included announcing that a membership drive was underway. Considerable stress on the safety campaign, urging H.W. people to help in the elimination of safety hazards was promoted through an editorial cartoon. A two-column lead story was devoted to Coffin Awards which were given to employees of the Company for meritorious work. As a means of informing Hanford Works people of the opportunities aviilable in the various crafts classes of the Adult Education School at Columbia High School, a two-column lead announcement was made.

The fine safety record of 365 days without injury made by the Transportation Division gained prominent recognition on the front page. Continued cooperation with the Red Cross on publicity for their fund campaign was given and additional editorial space was devoted for the same purpose. Continued interest by readers of the WORKS NEWS in the new column "Can You Tell Me" introduced a short time ago was evidenced by the number of questions and answers appearing in this issue. In an effort to have new employees feel more at home at Hanford Works, considerable space was devoted to recognition of new arrivals.

During the month additional time was required for training a new employee to take over the position as Assistant to the Editor, and correspondence was initiated to inform all WORKS NEWS reporters of the change. Computation of the WORKS NEWS survey required a great deal of extra time of all Supervisors within the Division. It is expected that final results will be made known in the near future.

"Employee Information" - Women's Features

Two women's pages appeared in the four issues of the Hanford Works NEWS during the month of February, 1950. "Where There's a Window There's a Way" featured interior decorator hints on window dressing. A leaflet giving directions for making draperies was offered to readers and 30 copies were sent out at the request of readers.

A story on safe handling of cleaning fluid in the home also appeared on this page. It was written from information supplied by the Community Fire Division.

"Tune Up and Put a Note of Spring in Your Step" was the feature in the February 17 issue of the WORKS NEWS. The article was the first in a series based on the theme of greeting the new season.

Exercises were shown and described as suggested by the Columbia High School adult education conditioning class instructor.

The folk dance club, square dancing, basketball, softball and Community Activities Divisions Sports Nights were named for active recreation.

Approximately 130 kmitting patterns were distributed at the request of readers as a result of a feature on hand kmit garments in the January 27 issue of the WORKS NEWS.

A new feature called "What's Doing" was initiated in the February 3 issue of the TORKS NEWS. The idea is to provide a chatty schedule of events about one week in advance as a service to readers of the WORKS NEWS seeking recreation in Richland. During the month activities promoted were the Square Dance Club, Richland Symphony Orchestra Concert, Allied Arts Association, Community Activities Division Sports Nights, S.P.E.B.Q.S.A., Women's Basketball, Eagles benefit dinner, Choral Society, Ray Whitley (for JayCees), "H.M.S. Pinafore", "No Time for Comedy", and Beta Sigma Phi Polio Benefit card party and style show.

A short feature on a Hanford Works employee who will be married on the "Bride and Groom" radio show was written for the WORKS NEWS. Pictures were obtained for this feature.

Each month requests for rides and riders for week end and vacation trips are handled through the facilities of the Women's Activities office. During February,127 calls were received requesting rides or riders for the following destinations: Kansas City, Spokane, Los Angeles, Casper, Wyoming, Laramie, Whoming, Lansing, Michigan, Aboline, Texas, Wilkes Barrie, Pa., Seattle, Portland, Yakima, Walla Walla, Hood River, Birmingham, West Virginia, Virginia, and Tennessee.

Community Divisions Public Information

At the beginning of the month, the Supervisor, Community Divisions Public Information, met with the Supervisor, Housing Allocation Section, Housing Division, to discuss ways and means by which the latter group might improve relations with people who apply for housing accommodations.

Following the meeting, the Supervisor, Community Divisions Public Information, outlined various recommendations, in written form, which are now being studied by the Division Head, Community and Public Relations. Once he approves them, they will be forwarded to the Housing Allocation Section for consideration and action.

The Supervisor, Community Divisioss Public Information, attended the February meeting of the Richland City Council, in order to keep abreast of its activities and proposals. The results of this meeting were verbally reported to the Division Head, Community and Public Relations, for his information.

To present a proposed publicity campaign for a March "Kite Flying Contest", the Supervisor, Community Divisions Public Information, met with members of the Community Activities Division, in the evening of February 27.

The publicity program designed and suggested by the Community Divisions Public Information Supervisor is as follows:

Written publicity

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- 1. News stories in local papers.
- 2. News pictures in local papers and WORKS NEWS (picture of G-E employee helping his son construct a kite)
- 3. Newspaper advertisements, sponsored by organizations furnishing awards, or community organizations, such as Kiwanis or Rotary

- 4. "Slug line" in firms' regular newspaper advertisements
- 5. Posters for school and community bulletin boards
- 6. Mimeographed "take-home" notices for distribution in school recreation classes
- 7. "Hand-outs" for distribution from children's departments of department stores

Spoken Publicity

- 1. Radio spot announcements, contributed by local radio stations
- 2. Announcements in school recreation classes

This Program was approved by members of the Community Activities Division, and is going ahead, through the cooperation of the Community Activities Division and the Community Divisions Public Information Supervisor.

An up-to-date description of Richland, Washington, was written during February by the Supervisor, Community Divisions Public Information, for mailing to people who apply for work in the Nucleonics Department. This description is now being checked by the Division Head, Community and Public Relations, and after his approval, will be presented to the Employee Relations Division for its use.

During February, the Supervisor, Community Divisions Public Information, met with the superintendents of the Community Activities Division and the Community Safety Division, for the purpose of further acquainting these groups with the functions of Community Divisions Public Information and the services offered by the Community and Public Relations Division.

A threat to poison 1,000 dogs in Richland was reported in the local newspaper last month. Immediately after this threat was made know, the Supervisor, Community Divisions Public Information contacted the Chief of the Community Patrol Division and recommended the following procedure be used in answering residents' questions as to what Patrol would do regarding the threat:

- 1. Assure residents Patrol will do all it can to prevent a "dog poisoning campaign".
- 2. Urge dog owners to keep their dogs close to home, as a precautionary measure.
- 3. Promise residents that the Patrol Division will act in accordance with the law in dealing with dog poisoners.

By being prepared to answer the question, "What is Patrol going to do about this 'dog poisoning campaign'", the Patrol Division Chief believes much ill will was avoided on the part of residents toward his division.

The Supervisor, Community Divisions Public Information met with the Superintendent, Community Accounting Division last month to outline a procedure to be followed in attempting to collect residents' over-due phone bills. "Direct mail" was chosen as the means, and the Supervisor, Community Divisions Public Information will draw up the form letters.

As a means of maintaining close liaison between the Community Divisions and the Community and Public Relations Division, the Supervisor, Community Divisions Public Information attended all of the Community Divisions staff meetings held in February. At each meeting, this Supervisor reviewed the actions he had taken toward winning the good will of residents for the Community Divisions, and noted, for future action, the community relations problems presented during the meeting.

Public Functions and Services

Reviewed Status Report text with the General Manager and his secretary, using the wire recorded transcription along with script and this was revised, mimeographed and distributed to several mambers of Supervision in Employee and Community Relations Division. A copy of this text was submitted to Training and Program Development where it served as an important part of their development of the Accountability of Source and Fissionable Materials program.

Public Functions continued to render assistance in direction and staging of special Security Division color slide film project. This series depicts "hiss X", representing a typical Hanford Works secretary whose job entails the handling of classified documents in a normal day of activities at home and throughout a regular working day. Considerable creativeness in direction has been employed to achieve unusual stage effects to create an interesting film. Processing of the film will be done at Portland and upon completion will be shown to all interested groups as a security feature.

A special film showing was arranged by Public Functions for members of Community and Public Relations Division and Training and Program Development which was a demonstration of a new sonic tone slide film projector that eliminates the manual operation of a projector and incorporates sound projection suitable for use in group meetings.

Submitted report of Objectives for 1950 of Public runctions to be combined with master portfolio.

Considerable increase in institutional motion picture request activity was noted this month in Public Functions. Notifications and folders were sent to several new clients who are availing themselves of the services we offer. This is especially true of the Boys and Girls Counsellors at the Carmichael Junior High and Columbia High Schools. In addition, the Chairman of the Supervisors' Association Steering Committee is using our institutional films to augment meetings held with potential members. Several excellent new films have been added to the General Electric Film Library in Portland and those concerned are being notified of these issues. Sixteen films were obtained from the Advertising and Publicity Office in Portland, Oregon for showing to employee and community groups.

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Supervisory members of Public Functions attended the Employee and Community Relations Divisions' supervisory conclave held at the Desert Inn early in the month. Considerable helpful knowledge was gained in learning the objectives of our associated groups and their projected activities whereby reciprocal relations may be conducted and our services correlated.

The Supervisor of Public Functions attended the 700 Area Safety Council Meeting with the Division Head and offered the services of our groups to assist in the projection of an award ceremony to be presented to all 700 Area personnel. A suggestion was offered that a colored slide—tableaus portraying executive management and representative employees in their respective work areas to be produced at small expense. This would create joint spectator interest on the part of all personnel who were responsible for the achievement.

Four applicants for a Public functions Assistant were interviewed and the qualifications of each carefully considered in respect to the requirements of the job.

Discussed the possibilities of employing Fublic Functions created programs of a Community Relations nature with management members of local radio stations (KWIE; KALE; KPKW) and they are very receptive to any service we can offer them for sustaining program. Development is in the initial planning stage for presentations suggested.

"Earning and Learning in Richland, Washington's stomic Energy Center", is the subject of a text prepared by Public Functions for use by the Division Manager who spoke before a group of Parent-Teachers Association members at Rosalia, Washington, Tuesday evening, February 28. The contents of the text included the objectives of the G.E. 9-Point Better Job Program, Benefit Plans available to General Electric Company personnel including educational benefits, Employee Relations and Supervisory Training programs being made available.

The Supervisor of Public Functions and Services attended two demonstrations of recording and public address system equipment made available by distributors from Spokane and Seattle. These were held in conjunction with a careful survey being made of this type equipment for use in Community Relations programs being developed for presentations to Supervisory-Management groups, Employee groups and residents of the Community. The equipment was sent-up at two recent community auditorium functions.

Assistance was rendered by Punlic Functions in the preparation of the February Safety Meeting Program presented by the Community and Public Relations Division. Material and recommendations were submitted in the construction of the participation game employed in the presentation.

The Chief Supervisor of Security notified the Public Functions Supervisor of the latter's appointment as a contest judge in a forthcoming slogan contest being offered Hanford Works personnel by the Security Division. Announcement of the contest will appear in the Larch 3 edition of Hanford Works NEWS.

Hanford Works Photo House

The space facilities of the Photo House were enlarged to provide a copylayout work and print drying room. An increase in the scope of work and assignments necessitated this acquisition, especially the orders being received from Medical Division for specialized color photos of Medical specimens.

As noted on the chart, sixty-nine photo assignments were completed by the Photo House during February, an increase of 29 over the previous month or about four assignments per day. Indications from clients are that these assignments will continue to increase in the ensuing months as well as the regular photo-badge work. Color photography has increased over 50 per cent from the previous month.

Motion picture assignments increased this month with the Technical Divisions projecting for special laboratory and process photography by the Photo House. Two assignments were formulated for motion picture filming in color this Spring and Summer for Community Activities Division and Safety and Security Divisions.

Special progress photos were made by the Photo House of all stages of the ice jam in the Yakima River for Transportation Division. Pictures were also made of blasting operations and a special letter of appreciation was received for these two assignments.

A letter directed to the Division Head from the Transportation Division acknowledging appreciation for the preparation of special safety certificates by all members of the Photo House was received and distributed.

A new photographic request form was prepared by the Photo House and was approved for use in establishing a photo control system throughout all processing stages of each request. This form will serve as the original assignment and identify each order until the finished work is delivered and then becomes a permanent record for compilation and reordering purposes.

Commercial Art

During February, the Commercial art services rendered included the regular quota of photograph layouts, editorial and security cartoons for the Hanford Works NEWS. In addition, designing and finished art work was completed on a new Woman's Page heading, two syndicated cartoons, a column heading for the Women's Basketball articles, March safety poster, new Richland telephone directory, (front, inside back and outside back covers), Safety booklet cover and Security Division posters. Also, sketches were prepared for the Supervisors' Association Membership Cards and Safety Celebration billfold cards.

Identification cards were prepared for Training and Program Development for use by the members of the Supervisors' 40-Hour Training Program. Also, a masthead was designed and completed for a Supervisors Bulletin being issued weekly by this group.

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AN INCREASE OF 172 NEGATIVES

COMMUNITY DIVISIONS

SUMMARY-FEBRUARY, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg.cf Month	End of Month
Community Administration Community Accounting Community Public Works Community Safety Community Commercial Facilities Community Housing Community Fire Community Petrol Community Activities	6 26 416 3 16 40 128 83 12 730	6 26 416 3 15 40 128 84 12
	730	730

Changes in the force of the Community Divisions during the month of February, 1950, were as follows:

	Reduced	Increased
Community Administration	-	-
Community Accounting	•	. •
Community Public Works	-	-
Community Safety	-	-
Community Commercial Facilities	1	-
Community Housing	-	-
Community Fire	-	-
Community Patrol	-	l
Community Activities	<u>-</u>	-

The total, therefore, remains unchanged as of the end of February, 1950.

GENERAL

Election of Community Council members was held February 4, 1950, in conjunction with the School Board election.

Three new commercial facilities opened for business during the month.

Housing applications increased from one hundred ninety-seven (197) to two hundred three (203).

Due to the extreme ice conditions on the Yakima River, unfavorable thawing weather could have created a serious threat to the bridges crossing the river; lowever, as a result of favorable thawing conditions, no damage to the bridges was experienced.

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COMMUNITY DIVISIONS PUBLIC WORKS DIVISIONS FEBRUARY, 1950

ORGANIZATION AND PERSONNEL	EXEMPT	NON-EXEMPT	LATOT
Number of employees on payroll:			
January 31, 1950 February 28, 1950	58 58	358 358	416 416
Personnel changes made during month:			
Transfers to Transportation Transfers to Services Division		1	
Transfers from Security & Services Transfers from Maintenance Transfers from Transportation		2 1 1	
(Transfers within Public Works One Steno from VM to VL)		1	
Returned from Leave of Absence		1	
Terminations Retirements		1 2	

GENERAL

Our new garbage, trash and refuse disposal grounds was opened on January 12, 1950. This site is located at a point near the Columbia River, south of the old Labor Yard. Some of the factors considered in the selection of this site for the sanitary fill were:

- 1. Easy accessibility for residents and reduction of mileage to be traveled by our garbage collection crew.
- 2. Greatest portion of excavation was performed by contractor building the dike who had borrowed top soil from this area.
- 3. Access roads were already built by the dike contractor.
- 4. Site was agreeable to the A.E.C. Public Health and was also recommended by the consultant firm of Greeley and Hansen who were engaged last year to study this matter.

During the past month the area surrounding the sanitary fill has been cleared of considerable debris, and the appearance of this area greatly improved.

Areas seeded to rye during the fall of 1949 are in good condition. Some loss was experienced by wind erosion however, there are sufficient plants to establish a stand this spring. Seeding operations will be resumed in the immediate future and will include outside edges of the By-Pass shelterbelt with some additional seeding in the vicinity of the hill at Elm Street and Swift Boulevard extended. Additional areas that are potential blow areas, on which construction work during the winter months destroyed the cover, will be reseeded.

GENERAL (CONTD)

A committee was set up to watch for ice jams and to be prepared to evacuate threatened personnel, to barricade roads and report information into head-quarters. Work was closely coordinated with Patrol, Air Patrol and weather stations.

Considerable damage was done to the Bailey Bridge from blasting ice. One road section was shot away and one section of sidewalk lost.

The ice left the river February 20, 1950, in a rotten broken up mass. There was jamming at the bridge, but nothing serious.

Carpentry work necessary to prepare 83 railroad car loads of lumber for shipment was performed for the Excess Division of Purchasing and Stores Divisions.

Removal of blow sands resulting from soil erosion and high winds from house lawns in Village started in February. This work is 50% complete.

PROJECTS

C-203-III - Water Supply & Sewage Facilities for Richland Village and North Richland Construction Camp - Invitations to bid on fencing and water lines in this area were opened 2-28-50.

Backfill along George Washington is being done by the Labor Section of the Public Works Divisions. A meeting was held with the Army Engineers in regard to the interference that is possible between the dike and the fencing and water line contractors.

C-282-R - Richland Community Dust and Pollen Control Program - No street trees were planted during the month due to the lingering frost, making it necessary to hold trees in the nursery. However, stakes were placed for street trees on North George Washington Way, Howell Avenue and Davison Avenue. A large percentage of these holes have been excavated by the tenants. Planting is scheduled to begin within the next few days.

A brief survey was made of the areas seeded to grass last year. Although these areas appear to have a poor stand of grass on them, with normal care they will not need reseeding.

No additional work was done on the shelterbelt planting during the month of February, with the exception of preliminary work necessary for the resumption of planting to be started as early as possible during the month of Merch.

C-288-C - North Commercial Area - A final inspection of utilities - water lines, sewer lines, storm sewer drain, inlets and sanitary sewer manholes - was made February 13, 1950. A number of exceptions were made on this inspection which have been cleared at this time by the contractor.

On February 20, 1950, a final inspection was made on paving, concrete curb and gutters, sidewalks throughout the area. A large number of exceptions were made during this inspection and are presently being cleared by the contractor.

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PROJECTS (CONTD)

C-232-II - Construction of Robert Gray Jr. High School - Field release (1) was issued 2-21-50. Specifications covering contract work incidental to execution of this project were prepared in preliminary form. Necessary estimate plans, requisitions, and other work incidental to this contract progressed satisfactorily.

C-233-R - Part II - Construction of Spalding Elementary School - Field release (1) was issued 2-7-50. Specifications covering contract work incidental to execution of this project were prepared in preliminary form. Necessary estimate plans, requisitions, and other work incidental to this contract progressed satisfactorily.

C-234 - Mercus Whitman School - The Marcus Whitman School was accepted with one exception.

C-345-R - Attic Duct Insulation - Precuts - Request to close project was issued 2-27-50.

C-348 - Asbestos Siding, 703 Building - Subcontract was let to Roof Service, Inc. of Seattle, Washington. Notice to proceed not yet issued.

C-351-R - Installation of Irrigation System - Public Grounds - Specifications covering contract work incidental to execution of this project were prepared in their preliminary form. Necessary estimate plans, requisitions, and other work incidental to this contract progressed satisfactorily.

"S" PROJECTS

S-147 - Addition to Fire Station #1 - Cost report was issued 2-8-50. Final inspection report was issued 2-15-40 and request to close project was issued 2-21-50.

S-149 - Addition to Fire Station #2 - Cost reports were issued 2-8 and 2-27-50.

S-216 - Rehabilitation of Irrigation Ditch West of Columbia High School - Revised specifications were issued 2-28-50.

S-229 - Furnace Cleaning, Conventional Houses - Field release (1) was issued 2-28-50. Work to begin on March 13, 1950.

S-290 - Traffic Control Signals - Rough draft for specifications was prepared 2-24-50. Design drawings in preparation.

ENGINEERING DIVISION EXEMPT NON-EXEMPT TOTAL Number of employees on payroll: January 31, 1950 17 12 29 February 28, 1950 17 12 29

Miscellaneous

The following routine items were processed during the month:

Requisitions	49
Store Stock Requests	4
Store Stock Adjustment Requests	2
Purchase Orders Expedited	18

Several samples of materials newly on the market, were obtained for inspection and testing by the Engineering Group.

Specifications were rewritten of several Store Stock items to include new materials now available.

The following number of jobs were completed on continuous engineering service requests:

ESR #97-CH - Elec. & Struct. Insp.	5
ESR #98-CH - Alteration Inspection	2
ESR #100-CH - Back Charge Estimates	3
ESR #118-CF - Approved Alter. Permits	5
	4

The following Engineering Service Requests were completed or cancelled:

Job No.	Description	Date Completed
243-PW	Irrigation Ditch fencing south of Carmichael Jr. High School	2-13-50
306-PW	Oil Heating - Prefabs	2-21-50
311-SS	Remodeling of 722-A Building	2-27-50

Technical information and instructions were furnished the following prospective facility operators, clubs, churches and schools.

Proposed Roller Skating Rink
Proposed Recreational Area (Commercial)

The status of Commercial Facility Division Sponsored Construction is as follows:

Theater - Construction started 12-14-49 - 5% complete

National Bank of Commerce - Construction started 1-31-49 - 90% complete

Deymonaz - Construction started 9-16-49 - 95% complete

Diettrich Food Store - Construction started 11-3-49 - 95% complete

Commercial Facilities Construction Status (Contd)

Barnhart's Bakery - Approved 8-29-49 - Awaiting information

Kaiser and Johnson Food & Drug - Construction started 10-17-49 - 95% complete

Cascade Radio Station - Awaiting information

Multiple Business Building - Construction started 11-2-49 - 95% complete

Morgan & Olberg Drugstore - Approved 1-18-49 - Awaiting detailed plans

Ellis Photographic Studio - Approved10-13-49 - Awaiting detailed plans

Stone & Garmo Food Store - Awaiting preliminary plans

Descrt Inn Remodeling, Entrance - Revised plans submitted

The status of Community Activities Division Sponsored Construction is as follows:

Latter Day Saints Church - Construction started 2-5-49 - 75% complete

South Side United Protestant Church - Construction started 11-5-48 - 99% complete

Richland Baptist Church - Construction started 11-27-48 - 99% complete

Assembly of God Church - Approved 5-16-49 - Awaiting start of construction

Church of Nazarene - Construction started 4-12-49 - 99% complete

Church of Christ - Construction started 12-19-49 - 50% complete

Swimming Pool Association - Awaiting information

Reorganized Latter Day Saints Church - Construction started 8-22-49 - 15% complete

Christian Science Society - Awaiting preliminary plans

The status of School Construction is as follows:

Chief Joseph School - Reviewed 8-8-49 - School board has advertised for bids. Bids to be opened at an early date.

New Elementary School - Awaiting information

Secajawea Grade School Cefeteric Addition - Construction started 9-16-49 - 100% complete. (Awaiting AEC notification for final inspection).

Conversion of Village Food to School Administration Offices - Construction started 11-15-49 - 75% complete

School Agricultural Building - Approved 2-15-50 - Awaiting start of construction

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Alteration Permit Progress is as follows:

Facility	Description	Approved	Remarks
Robley Johnson Studio	Extend front porch	3-23-49	100% complete
The Mart	General Alterations	10-3-49	90% complete
Robley Johnson Studio	Alteration to dark room	9-20-49	Work stopped
New City Cleaners	Install gas pump and storage tank	11-23-49	95% complete
Desert Inn	Install Neon Sign	12-19-49	Awaiting installation
Diettrich's Food Store	Install Neon Sign	1-9-50	Awaiting installation
Natl. Bank of Commerce	Install Neon Sign	2-8-50	Awaiting installation

The following work was done on streets and storm sewers:

The streets suffered considerable damage from the frost and will require above normal maintenance.

-Transportation is crushing rock for the Village to be used for hot asphalt patching.

The footings were poured in the Community Labor Yard for the asphalt tank. Delivery of tank is being awaited.

A complete review was made of our street and sidewalk program for this coming spring, and was submitted to Operations and Maintenance Division.

Grounds Maintenance and Irrigation

Assistance was given the Labor Section on scheduling of equipment for the coming irrigation season. A preliminary study of this problem indicates that equipment will have to be properly placed in order for it to meet the irrigation requirements of this season.

OPERATION AND MAINTENANCE DIVISION			•
MINTENINCE SECTION	EXEMPT	NON-EXEMPT	TOTAL
Number of employees on payroll:			
January 31, 1950 February 28 1950	19 19	188 189	207 208
Personnel changes made during the month:			•
Transfers from Maintenance Transfers from Plant Security & Services		1	
Transfers to Village Labor		1 🗻	
Temporary-on Loan from Maintenance		1,	

Miscellaneous

Renovation orders were completed in 41 vacant houses during February, a breakdown of this figure showing 9 prefabs and 32 conventional type houses. The work completed on these orders included 28 complete paint jobs 12 partial paint jobs, and cleaning and miscellaneous repairs as needed to bring these houses up to our accepted standards. There are 35 incomplete renovation orders on hand at close of month.

The Interior Paint Program (and necessary preparatory carpentry work) was continued in Division V and resulted in the completion of 53 conventional houses. The interior paint program of prefab houses was started the latter part of the month and 13 of these houses have been completed.

Six rooms and the corridor in East wing of Kadlec Hospital were also painted during February in addition to several partitions in Building 760.

Repairs to a fire damaged house at 645 Cottonwood are 95% complete, necessary work amounting to a major job, including new roof, partitions, wiring, furnace and duct repair, cabinet replacement and complete interior and partial exterior painting.

The remodeling of Tract House J-708 has been in process and is approximately 85% complete. This work includes a new bathroom, installation of a water heater, new plumbing septic tank and drain field, complete rewiring and service entrance and painting.

Approximately 31 man days were required to perform work at Columbia Camp in connection with the closing out of this facility. This work included the disconnecting of all heating, ventilating cooling, cooking equipment, so that this could be removed from the area, and the cutting of water service to all buildings.

Floors were leveled (through jacking up or re-enforcing) in 53 A&J Houses, 51 precuts and 41 prefabs.

Miscellaneous (Contd)

Faulty concrete bath tubs were replaced with metal bath tubs in 35 locations. "Tyle-Bord" was installed around 35 tubs and in addition was installed at 55 other locations amounting to a total of 90 "Tyle Bord" completions during the month

New shower stalls were fabricated and installed in 12 prefab houses to replace deteriorated stalls.

The overhaul of steam system was completed in Dormitories W-17 20 21 and M-1. Ten radiators which had broken sections as result of freezing during cold weather were repaired at same time.

Work is now in process to relocate water still from North Richland Hospital to Kadlec Hospital. When installation is complete, block tin lines will be run to make triple-distilled water available at several locations in the hospital.

Overhaul of #5 and #13 domestic wells has been completed, and overhaul is in process on #4 domestic well and irrigation system pumps.

During the month it was necessary to break holes in floors of several Ranch houses to repair water line leaks at the point where these lines rise up through the concrete floor. A sleeve was not provided in the floor for passage of the copper tubing, and these breaks are apparently due to fatigue set up by expansion and contraction of lines without expansion loops. When repair is made, allowance is made for this expansion.

A listing of miscellaneous work completed during February includes the replacement of 9 electric water heaters, 4 kitchen sinks and 6 wash basins; repair or replacement of linoleum on 78 floors and 64 sink boards; repair of 27 screen doors and 30 roofs; repair and refinishing of 31 chairs 4 dressers, 17 tables and 4 desks; upholstering and covering of 48 chairs; sanding and finishing of floors in 12 conventional houses; and the lining with colotex of 8 utility closets in prefabs.

Service Order Group

Oil burner mechanic service was discontinued on swing shift and week ends as of the last day of February since weather conditions indicate that this service will no longer be required.

The Service Order Group completed a total of 4124 Service Orders during the month, 96 3% of this work being done for Housing, 2.3% for General 1 1% for Concessions, and .3% Public Works.

The following is a status report of Service Orders:

On hand at beginning of month	513 orders
Received during month	3992 orders
Completed during month	4124 orders
On hand at end of month	381 orders

UTILITIES	SECTION

	EXEMPT	NON-EXEMPT	TOT/L
Number of employees on payroll:			
January 31, 1950 February 28, 1950	9 9	56 56	65 65

Steam

Some difficulty was encountered during the first part of the month with the coal conveyor and crusher at the Central Steam Plant. The coal crusher was removed, completely overhauled and re-installed. It was found that the main crusher shaft was too small at the bearing surface. A new shaft received from the manufacturer was exactly the same as the old shaft. It was necessary to turn old shaft down and sleeve it to correct size. It was necessary to replace the drive sprocket wheel on #3 coal conveyor after the sprocket wheel hub was cracked due to a faulty sheer pin socket

On February 8, 1950, it was necessary to take #4 boiler out of service to replace a leaking boiler tube. It was found that the leaking tube had been cut by abrasion from the first header wall soot blower. This soot blower was readjusted to prevent any further damage to tubes. On February 13, #4 boiler was returned to service, and #2 boiler was taken out of service for minor maintenance repairs to furnace and to clean chemical feed line.

A considerable amount of overtime was worked during the month to take advantage of shipments from the mines in view of the overall coal situation at present.

Operations at the 1131 Boiler House were normal throughout the month.

Contral Steam Plant

Steam Generated	32,803
Steam Sent Out	28, 120
Coal Consumed	5,047

Domestic Weter

Satisfactory progress is being made on routine overhauling of the domestic water well pumps and Consumers' booster pumps.

The north reservoir at 1182 was drained and cleaned during the month. Some repairs have been made to water line leaks that developed during the extremely cold weather.

9.

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland North Richland	98.7566	3.5270	82.0080 22.8552	2,9289 0.8163
Columbia Field 300 Area	35.8606	1.2807	28.5621_	1.0201
3 · · · · · · · · · · · · · · · · · · ·	134.6172	4.8077	133.4253	4.7653

Sewage

Several minor difficulties were encountered during the first part of the month due to the extremely cold weather causing some equipment freeze_ups.

Some progress has been made on the items of Project C-203-Part III being done by our maintenance groups.

The sewage flow integrator was removed from the venturi flow recorder and reinstalled on the parshall flume flow recorder. This change was thought desirable after considerable study of the installations which indicated that accuracy of the meter would be greatly improved by making this change.

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G.P.D.	Average Rate Flow Gals. Per Min.		
Plant 1 Plant 2	30.000 43.100	1.0714 1.5393	744 1069		
Total	73.100	2.6107	1813		

Pasco Warehouse Area

Some difficulty was encountered with water getting into fuel oil storage tanks when the sudden melting of snow caused excessive water run-off.

In inspection of the pilings and timbers supporting the river pumping station and the connecting ramp was made. This inspection revealed that most of the timbers have deteriorated considerably. Although it is thought the building is sufficiently supported at present, it may not be sufficiently anchored in case of excessive high river run off this coming season

LIBOR SECTION	EXEMPT	NON-EXEMPT	TOT/L
Number of employees on payroll:			
January 31, 1950 February 28, 1950	9 9	100 99	109
Personnel changes made during the month:			
Transfers to Plant Security & Services Transfers to Transportation		1	
Transfers from Plant Security & Services Transfers from Community Maintenance Transfers from Transportation		1 1 1 **	
Returned from Leave of Absence		1	
Terminations Removal from Rolls		2	

Miscellaneous

The garbage and refuse collection continued as usual, with the residential trash collection Wednesday of each week. Three men used each Saturday on garbage and trash removal from commercial facilities and stores. Six new facilities added to the commercial routes during the month of February.

Due to weather conditions, work was limited on Project C-282.

The delivery of topsoil on Tenant Relation Work Orders was started this month.

The repair of Project irrigation equipment was continued.

Twelve shipments of personal furniture were handled. Three men were required for handling Government furniture and fixtures during the month. The above group was used during slack periods on Grounds Maintenance.

Excavation work has been curtailed due to frost conditions but this type of work is now in progress. Several minor excavations have been completed this month.

The saddles for the road oil tank have been poured and backfill is complete.

Excavation work on the sever and water service to the Church of Christ at Thayer and Swift started the twenty-eight of February.

Removal of silt and shaping of banks along the irrigation canal is again in progress after four weeks of shut down due to frost conditions. We hope to have the canal system ready for water by the first of April. The canal carrying water to the 3000 area Well field should be ready by the 15th of March.

Miscelianeous (Contd)

Road and street maintenance is now on the increase due to holes in streets and soft roads caused by frost. The filling of holes with 3/4 minus gravel is a daily routine. We will start using Pre-mix when the temperature permits.

Covering of the sand blow area along the 3000 Area canal is 80% complete.

The cleaning of streets over the entire Village will be underway next week. This work has been somewhat slowed down due to the need of manpower and equipment on other work.

Materials moved this month:

Sand on icy streets and walks 3/4 Minus Gravel - Roads & Streets Pit run ballast, blow areas (3000 canal)	220 525 2496	cu.	yds.
3/4 to 1/2 clean chips to yard 1/2 to 0 clean chips to yard	1185 834		yds. yds.

Coal delivered from Hanford storage:

1131 Garage	2-1/4 ton
Renovation of houses	1-1/4 ton

COMMUNITY COMMERCIAL FACILITIES DIVISION

February, 1950

ORGANIZATION AND PERSONNEL	FEBRUARY
Number of employees on payroll	
Beginning of month	16
End of month	15
Net decrease	1

COMMERCIAL FACILITIES:

The following figures indicate trends in commercial activities as related to various basic items:

	January	February
Percent of room day occupancy - Desert Inn	- 52%	· 66% 2:,777
Gallons of ice cream sold Carnation milk & cream deliveries	2;168 51;731	59,157
Darigold milk & cream deliveries Morning Sun Dairy milk & cream deliveries	2;934 13;205	2;701 15;985
Theater customer count Gallons of gasoline sold	46;330 193,585	52;142 151,418

Total number of Commercial Facility Operators' employees, full- and part-time as of February 28: 1,021 (This shows a net increase of 10 over last month's 1,011.)

Thrifty Drugstore opened new department to repair electric razors, fountain pens, and make keys.

Construction was started February 27 on Kennell-Ellis Studios building in Uptown Business District.

The following routine items were processed:

Work Orders	33
Back Charges	24
Service Orders	30

CONTRACTS AND NEGOTIATIONS:

Supplemental Agreement was entered into with the following firm:

Vance Properties; Inc. - Supplemental Agreement No. III, dated January 11, 1950, covering the establishment and operation of a travel agency and corset shop, under sublease, and also the terms and conditions for the operation of the private dining room and service bar in the Desert Inn.

1212571

C. D. Joseph, of the Automatic Laundry Company, was authorized to sublet space in his new building in the Uptown Business Area to Mrs. Anne Schassberger for the establishment and operation of a ladies and children's shoe salon, to be known as "The Bootery".

John F. Gerdes was authorized to sublet space in his service station building to Floyd Johnson and Dale Sylvester for the operation of a motor tune-up service.

An award was made to Spencer-Kirkpatrick Insurance Agency to construct a business building in the Uptown Business Area.

A Super-Market Food Store award in the Uptown Business Area was made to Virgil O. McVicker, Richland, Washington. Mr. McVicker is expected to construct a building for subleasing to C & H Foods.

An award was made to H. A. Andrews and Gordon Matthews, Walla Walla, Washington, for a children's playland in the Light Industrial Area. They are expected to construct their own building and amusement facilities.

COMMERCIAL FACILITIES EXPANSION PROGRAM:

		January	February
ı.	Number of Government-owned Buildings	35	35
	(a) Number of businesses operated by Prime Lessees(b) Number of businesses operated by Sublessees(c) Total businesses operating in Government-	48 9	48 9
	owned buildings	57	57
2.	Number of Privately-owned Buildings	25	27
	(a) Number of businesses operated by Prime Lessees(b) Number of businesses operated by Sublessees(c) Total businesses operating in Privately—owned	26 9	28 10
	Buildings	35	38
3.	Total Number of businesses in operation	92	95
4.	Privately-owned Buildings under construction	5	4
5•	Ground leases awarded	0	3

The following Commercial Facilities opened for business this month:

Launderland, a serve-yourself laundry, opened for business February 6 in the Uptown Business District.

Lil-Dale Sewing Center opened for business February 9 in the Uptown Business District.

The Mixer, a combination restaurant and billiard room, opened for business February 16 in the Uptewn Business District.

REQUESTS FOR ESTABLISHMENT OF BUSINESSES IN RICHLAND:

A number of individuals and firms, the majority of which were not interested in constructing their own buildings, expressed a desire during the month to establish and operate businesses in Richland. The types of establishments desired are shown in the following list:

Outdoor Advertising
Auto Agency
Building Materials
Clothing for Plant Workers
Garage
Hardware Store
Optometrist
Photographic Studio
Restaurant
Skating Rink
Service Station
Variety Store

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

February, 1950

ORGANIZATION AND PERSONNEL	February
Number of employees on payroll	
Beginning of month	40
End of month	40

RICHLAND HOUSING

	Housing Utilization as of Month End Houses Occupied by Family Groups	Conven- tional		T	Pre- Cut	Ranch	Pre- Fab	Apt.	Tract	<u>Tota</u>	
,	Operations	2217	269	1	378	838	1145	63	41	4952	
	Commercial Facilities	98	6	-	26	69	63		4	266	
	Community Activities	10	-		- 2	8	5		2	27	
	Post Office	5				3	14		3	25	
	Government	103	35		12	24	25	2	4	215	
	Schools	42	•		5	12	49	l		109	
	Kellex Corporation	1	5		3	1				10	
	Atkinson-Jones	9	15		5	10	2	3		44	
	J. G. Turnbull	ĺ	ì		3	5	6	1		17	
	C. T. Main Co.	2			2		1	1		6	
	J. A. Terteling			8	l	2				11	
	Newberry Neon	2	1		1					4	
	Vernita Orchards								3	3	
	Urban-Smythe & Warren					1				1	
	TOTAL HOUSES OCCUPIED	2490	332	9	438	983	1310	71	57	5690	
	Houses assigned - awaiting tenants	9	1	1	11	13	21	3	3	62	
	Houses assigned - (Leases written	<u> </u>			1	_ 4	_1			7_	
	TOTAL HOUSES	2500	333	10	450	1000	1332	74	-60	5759	

COMMUNITY		

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Diff- erence
Conventional Type	2482	17	9	2490	Plus 8
Block Type	333	1	2	332	Minus 1
T Type	10	1	2	9	Minus 1
Precut Type	437	9	8	438	Plus 1
Ranch Type	976	25	18	983	Plus 7
Prefab Type	1308	27	25	1310	Plus 2
Apartments	70	2	1	71	Plus 1
Tract	57	0	0	57	None
TOTAL	5673	82	65	5690	Plus 17

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	13	472	44	516
Men - Unoccupied		•		•
Women - Occupied	13	*455	** 176	631
Women - Unoccupied	2		•	•

Women's Dormitories occupied by:
G. E. Office 1

Education 1
Apartments 1
31

* This includes space of 4 beds in W-9 used for supply rooms and dormitory offices. **This includes 100 beds in "Standby Condition" in W-17 and W-20.

GENERAL

Allocation Section Statistics

Total houses allocated to new tenants Exchanged houses	55 717
Moves (within the Village)	18
Total new leases signed	82
Turnovers	4
Houses sent to renovation	36
Houses assigned "As Is"	26
Terminations	35
Total Cancellations	65
Applications Pending	203
Voluntary terminations	14
R. O. F.	6
Transfers	4
Retirements	2
Moves off Project	15
Death of lossee	ĺ

Three prefabs at Columbia Camp were leased on February 2, 1950. Two of them are occupied by employees of the Corps of Engineers, and one by the carctaker of the Camp.

2.

TENANT RELATIONS

Processing of Service Orders, Work Orders and Service Charges

	Issued from January 31 to February 28	Incomplete February 28	Issued Previous Month
Service Orders Work Orders	3361 808	381 1672	4685 866
Service Charges	174	8	225

- 53 Conventional houses were painted on the interior by project forces as compared to 89 the previous month.
- 13 Prefabricated houses were painted on the interior by project forces.
- 14 Kitchens and bathrooms were repaired and painted as compared to 18 bathrooms the previous month.
- 12 Conventional houses had floors sanded and refinished.
- 51 Precuts were jacked up and shimmed as compared to 33 the previous month.
- 53 A & J houses were jacked up and shimmed.
- 41 Prefab foundations were repaired and leveled as compared to 51 the previous month.

ITEMS OF INTEREST	TOTAL OUTSTANDING	TOTAL OUTSTANDING PREVIOUS MONTH
Laundry tubs	2.0	
•	40	15
Bathtubs	132	116
Sink Linoleum	170	107
Bathroom tileboard	288	181
Bathroom linoleum	183	14
Kitchen floor linoleum	32	36

Alteration permits issued during the month of February totaled 49 as compared to 38 the month of January.

Automatic washers 8	Denomina harana alamah	_
	Remove broom closet	- 3
Basement partition 1	Refinish floors	6
Basement excavation 3	Reverse range and refrigerator	2
Door to coal bin	Water softener	2
Fence 9	Clothes dryer	ī
Driveway 2	Tool shed	2
Dog pen	Back door in prefab	ī
Air conditioner 2	Clothes poles	ว
Flower box	Bathroom cabinet door	2
Electric switch		_

TENANT RELATIONS

1011 Inspections were made during the month of February. A breakdown of the inspections shows the following distribution:

Window shades	58	General Inspections	92
Lot Lines	10	Top Soil	20
Tile in bathroom	54	Floorboards	41
Sidewalks	60	Leaking Basements	45
Linoleum	103	Walls	136
Alteration permits	54	Miscellaneous	338

In addition to the above, Field Clerks have been checking on sand blown on yards and parking of trailers in yards.

Frceze-Ups

Freeze-ups starting December 20, 1949 including February 5, 1950 totaled 1147.

Prefabs		547	Tract	15
Precuts		427	Terteling	9
A & J		58	Apartments	10
Ranch		50	Dormitories	2
Conventional	 **	29		

4.

1-26-50 thru 2-24-50	TOTAL INVENTORY \$106,403.36		-\$68,469.59					39,034.71	\$107,504.30	
	TOTAL II	\$68,177.99 6,068.96 \$74,246.95	\$5,777.36	37,196.87		67.679.73	·	I I I I		ب
ARY DATE	·	INV. ITEMS TOTAL	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							
MONTHLY SUMMARY	AMOUNT	\$2779.80 2019.30 1269.86 738.22 811.07 2204.00 73.79 1038.86	514.79 340.58 		3432.86		1645.02	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	ITEMS	1237 6405 705 59 69 859 3018 3039	456 220		32		50	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
U, M. S. WAREHOUSE		Received Inventory Items Received on Store Orders Received on Purchase requisition Disbursed Inventory Items furn. Dorm Furniture Free issue Cash Dorm Supplies Warehouse Supplies	Dorm Lineng Dorm Shades TOTAL INVENTORY ITEMS BALANCE-	PLANT ITEMS INVENTORY	RECEIVED	BALANCE	DISBURSED	TOTAL PLANT ITEMS INVENTORY -	GRAND TOTAL INVENTORY	Dorm Furniture Exchange 174 Range Exchange 5 Refirgerator Exchange 4 Sent to Maintenance 193 Received from Maintenance 139 Pre-Fab Heaters Exchanged 34

)

COMMUNITY SAFETY DIVISION

FEBRUARY 1950

ORGANIZATION AND PERSONNEL

Number of employees on Payroll

Beginning of month

3

End of month

3

GENERAL

The Parent and Student Council mentioned in the January report in reference to the Bicycle Safety Program, will sponsor the April Safety Campaign which will be themed "Child Pedestrian and Bicycle Safety". They are planning an extensive campaign for that month.

During February the Supervisor of Community Safety Division attended a course on Public Education for Traffic Safety at the University of California. Directors of the course were W. O. Kyte, Sales Promotional Advertising Manager of the General Electric Co., Los Angeles, and Virginia Hackett, National Safety Council, Chicago. There were speakers such as Alan Courtney, National Broadcasting Co., Don McNamara, Tela-Film, Inc., Professor Brant, University of California, Dick Farrel, Los Angeles Daily News, Robert E. G. Harris, Los Angeles Times, and many others. The course was well worth the effort of attending it, and many new ideas were derived.

Richland had minor newspaper publicity on the February campaign, which was "Know And Obey Traffic Laws and Signs".

The 1949 Annual Inventory of Traffic Safety activities for Richland was completed and submitted to the National Safety Council Traffic Committee. It was received by them on February the 22nd.

This office reviewed the proposed school board's agricultural class room for fire and safety aspects and plans have been forwarded on to the Engineering Section. Also the inspection of the Latter Day Saint Church in respect to Fire Safety has been reviewed by this office.

The Fire Prevention Survey which was requested by A.E.C. the latter part of 1949 is underway. The survey for the schools, which will be completed first, should be ready to leave this office the week of the 3rd or 6th of March. The surveys of the schools will be recommendations made to A.E.C. Safety Section, and A.E.C. Engineering Section will make cost estimates, etc. This applies to school board property only.

Weather conditions have held up the completion of the painting and conditioning of the new twenty-four sheet billboards. If the weather permits, this shall be done in the very near future.

COMMUNITY DIVISION REPORT

COMMUNITY FIRE PROTECTION DIVISION

February 1950

Organization and Personnel

	February
	128 128 -
Richland	North Richland
16	3
\$2,929.00 196.00	\$ 40.00 1,135.00
1.6	
16	4 · 8 18
72 173	34 75
	16 \$2,929.00 196.00 16 16 16 3 72

Note: Damage estimates on two Richland fires not compiled in time for the January report, amounted to \$755.00 Government loss and \$825.00 personal loss, bringing the totals for January to \$833.00 Government loss and \$830.00 personal loss.

Fire Department Activities

- 1. Performed salvage operations at 411 Basswood following a break in a water pipe inside the house.
- 2. Spot checks of Richland and North Richland fire hydrants were continued during unusually cold weather.
- 3. Two men with aerial ladder truck dispatched to Government Airport to assist on electrical repair of revolving beacon light atop hangar.
- 4. Men dispatched from North Richland station to test Columbia Camp water system risers and hose boxes. Hose was replaced in one box.
- 5. Auxiliary alarm boxes tested in North Richland theatre, hospital Pasco-type barracks and women's barracks.
- 6. Twelve lengths (600 feet) $2\frac{1}{2}$ inch hose transferred to Transportation Division labor group.

l.

Richland Fire Prevention

2. Fire Extinguishers 1. Inspections 788 87 Inspected 700 Area Buildings 1100 Area Buildings 64 Recharged Commercial Facilities (Gov't owned) 77 Relocated 28 Schools, Churches and Clubs Removed Areas around buildings Total

3. Fire Investigations

2-8-50: A small fire occurred in 706 Building when some chemicals were mixed in a metal disposal can. Chemist in building used 10 lb. carbondioxide extinguisher to successfully extinguish fire and notified Fire Marshal. No damage. Extinguisher replaced.

4. Fire Prevention Lectures:

2-23-50: "Fire Safety in the Home" was subject of lecture delivered to 70 Public Works Division employees safety meeting.

2-24-50: "Fire Safety" lecture made to 27 Purchasing Division employees at a safety meeting.

5. Miscellaneous Fire Prevention Activities:

Inspections in government-owned buildings housing commercial facilities revealed stock well arranged and housekeeping generally good.

Replacement parts obtained for frozen sprinkler valve under wing "A" of Kadlec Hospital. Parts were installed and system returned to normal February 9th.

Covered enclosures at outside stairs leading to sprinkler system pits under "A" and "B" wings of Kadlec Hospital completed at suggestion of Fire Marshal's office. This project was instigated to prevent future freezing of sprinkler systems in extreme weather.

A meeting was held with the Kadlec Hospital administrative staff relative to a simplified evacuation procedure. When completed, the plan is to be reviewed for approval.

At the Fire Marshal's suggestion, the Kadlec Hospital administrator requested a committee representing Operations Fire and Safety, Community Safety and A.F.C. Fire and Safety Divisions to investigate the

Eight man-hours were spent in recharging carbon-dioxide extinguishers for the Atomic Energy Commission.

On recommendation of Fire Marshal, a test was made with insulation used against steampipes under dormitories. Samples were wrapped around a 450-degree steampipe at the power house and left for three hours. No signs of char were detected.

An inspection was made of the school agricultural farm buildings on George Washington Way. Rather than to continue the cooking of hog food on open fires, recommendation was made for the installation of an enclosed gas-fired cooker. Since no water is available for fire protection, recommendation was also made for installing a wheel-type 40-gallon fire extinguisher.

COMMUNITY DIVISIONS

COMMUNITY PATROL

FEBRUARY 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month

83

End of month

Net Increase:

1

Reason: 1 Reactivation.

GENERAL

On February 6, 1950, the Washington State Patrol began issuing and renewing drivers licenses at Community Patrol Headquarters on Mondays only.

During the month the Community Patrol cooperated with the Ice and Flood Committee which was organized on February 7, 1950, for the purpose of correlating flood control activities.

On February 8, 1950, a master key to the Bremerton Houses was furnished the North Richland Patrol.

On February 9, 1950, Capt. C. F. Klepper and Capt. W. A. Ziegler visited the Yakima Police Department for the purpose of inspecting their records division and for reviewing other police operating methods and procedures with them.

On February 16, 1950, the responsibility of opening the 705 Building each morning was transferred to the 700 Area Patrol.

During the month, 35 Traffic Violation Reports were received which consisted mainly of Accidents, Negligent Driving, and Failure to Stop and Identify. A total of 23 other reports were received which consisted mainly of Petit Larceny, Family Disturbance, Burglary, and Larceny by Check.

During the month, a total of 78 letters were received, consisting of 73 inquiries on arrests and 5 requests for assistance.

During the month, 6 prisoners were processed through the Richland Jail.

During the month, 23 gun registrations were taken by Community Patrol.

During the month, 389 bicycle registrations were taken by Community Patrol.

TRAFFIC

On February 10, 1950, the control box for the traffic semaphore on Goethals Drive was relocated from Mansfield Circle to the Knight and Goethals intersection.

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Community Patrol Division - Continued

A large book of exhibits was mailed to the National Safety Council on February 15, 1950, covering progress made during the past year. The exhibits, together with information forms, will be forwarded to the National Traffic Contest judges. Richland rated second position in the nation during 1949 as one of the three "No Traffic Death" cities, according to information from the National Safety Council.

Twelve traffic safety lectures were made to plant and civic groups during the month. A new film "The Careless Driver" was shown to each of the groups.

TRAINING

Subjects covered in the lieutenent's training classes for the month of February were as follows:

Directing Traffic Citation Tickets Sex Complaints Legal Questions Exchange of Information Suspicious Persons Police Bulletins

Advance training for Community Patrol members at the small arms range for the period in field instruction was as follows:

Pistol 2 hours

The .38 caliber revolver was used in double action firing. No score was kept.

A total of 59 men reported to the Range for training.

ACTIVITIES AND SERVICES (RICHLAND)

	December	January	February
Check on absentees	6	10	2
Persons assisted *	186	184	189
Doors & windows found open in			•
commercial facilities	30	29	40
Lost children found	8	5	4
Ambulance runs	29	26	34
Lost dogs reported	8	9	15
Dog, cat, loose stock complaints	56	43	116
Persons injured by dogs	4	3	. 4
Bank escorts and details	40	41	35
Fires investigated	23	28	26
Miscellaneous escorts :	16	17	20
Complaints investigated	126	29.	20
Natural deaths reported	3	2	ı
Suicide investigated	1		
Missing persons reported	14		
Totals	540	426	506

^{*} Includes: Assisting other departments, assisting outside police agencies, assisting private persons, delivering emergency messages, etc.

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	December	January	February
Check on absentees	0	1	1
Persons assisted *	64	101	86
Doors & windows found open in			
commercial facilities	19	65	122
Lost children found	1	0	. 0
Ambulance runs	0	0	2
Lost dogs reported	0	0	0
Dog, cat, loose stock complaints	0	0	0
Persons injured by dogs	l	2	0
Bank escorts and details	20	21	25
Fires investigated	3	74	Ţ
Miscellaneous escorts	10	. 7	6
Complaints investigated	33	0	l
Natural deaths reported	0	0	0
Suicide investigated	0		
Missing persons reported	0		
Totals	151	201	544

^{*} Includes: Assisting other departments, assisting outside police agencies, assisting private persons, delivering emergency messages, etc.

NOTE: Effective last month the following changes in the Activities and Services report were made: Complaints investigated - includes those where no enforcement action was taken. Those with such action are shown in the Crime Report. Missing persons - included in Crime Report. Suicide investigated - included in Crime Report. Doors and windows found open in commercial facilities - includes all warehouses, schools, and commercial facilities.

COMMUNITY PATROL DIVISION

FORCE REPORT

FEBRUARY 1950

Patrol		Entire Patrol 1-31-50	Entire Patrol 2-28-50
Patrol Supervisor Captains Lieutenants Sergeants Patrolmen	·	1 5 8 11 <u>5</u> 4	1 5 8 11 55
	Totals	7 9	80
Clerical			
Steno-Typists Clerks		2 2	2 2
•	Totals	. 14	14
	Grand Totals	. 83	84

- Reason for Increase

1 Reactivation

PATROL DIVISION	JUSTICE COURT CASES
COMPUNITY	RICHLAND JU

	TOTAL	\$62.50 \$87.50 \$51.50 \$7.50	\$5.50 \$14.00 \$7.50 \$5.00 \$17.50	\$258.50	to Neg. Dr.	iol.
	TOTAL SUSP.	\$30.00 \$12.50 \$5.00 \$5.50 \$17.50	\$7.00	\$115.00	case red., to	us viol n this v ns viol h this v this vio
	TOTAL	\$232.50 \$80.00 \$97.50 \$27.50 \$62.00 \$5.50	\$19,00 \$5,50 \$7,50	\$592.50		Dr. Lic. case incl. with this viol. Stop Sign case incl. with this viol. Stop Sign case incl. with this viol. Dr. Lic., cases incl., with this viol. Stop Light case incl. with this viol. Veh. Lic. case incl. with viol.
	LIC. REV.	m		3	Reckless Dr.,	e incl case il se incl ses incless included
	SENT.		H		- Reck	Dr. Lic. case ir Lic. Plates case Stop Sign case i Dr. Lic., cases Stop Light case
	SENT.			7	H	Dr. Li Lic. F Stop S Dr. Li Stop I
	WARR. ISS.	-		1	88.	* * * * * * * * * * * * * * * * * * * *
1950	CASES PEND.	הה מ ה		5	7.50 Fined \$12.50 Fined \$7.50	****
February	CASES CON'T.		H	7	f: \$7. eb. F Feb.	07 02 02 02 02 04
H	NO.OF FORF.	2001	H 4 H H H	92	Feb., - For tried in F.	
	NO.OF		1 271	38	H + +	q
	NO.OF	の	11100011	02	l., tried lov., - 1 Nov.	viol
5 A	VIOLATION	Drunken Driving Reckless Driving Negligent Driving Speeding *** Stop Sign No Driver's License **** F.T.Y.R.O.W. **	F.T.S. & I. with Unatt. Veh. Illegal U Turn Improper Parking * No Lic. Plates on Trl. No Valid Lic. Plates Public Intoxication	inira negroe assauro		Cases Froc., thru Crt. Cases Pend. Cases Pend. Cases orig., in prev., mo's & tried in Feb. TOTAL CASES:

COMPUNITY PATROL DIVISION NORTH RICHLAND JUSTICE COURT CASES

February 1950

TOTAL BAIL.	\$24.00 \$17.50	\$41.50
TOTAL SUSP.	\$15.00	\$15,00
TOTAL	\$7.50 \$18.50 \$15.00 \$40.00	\$12.50
LIC. REV.		0
SENT.		0
SENT		0
TARR. ISS.		0
CASES PEND.	<u>-</u> . ·	0
CASES CON'T.	rH	1
NO.OF FORF.	ر 1	9
NO.OF CONV.	7 7 7	12
NO.OF CASES	ноел	1
VIOLATION	F.T.Y.R.O.W. Stop Sign Speeding * Lic. Plates **	Public Intoxication

1 - Failure to Flare Stalled Veh., case orig., in Jan, & tried in Feb., Fined \$5.50

TOTAL CASES:.... 23 Cases Pending.... Cases orig., in prev., mo's., and tried in Leb

* 2 - Dr. Lic. cases incl., with this viol. ** 1 - Dr. Lic. case incl., with this viol.

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	Minor Injuries Jan. Feb. 0 2 0 0 0 2	Other Ce	18 10 1 2 19 12	Other Violations Totals Jan. Feb. Jan. Feb. 0 0 37 101 0 0 26 54 0 0 63 155	Parking V. Other V. Totals Jan. Feb. Jan. Feb. 8 9 22 24 53 86 1 0 8 9 12 22 9 9 30 33 65 108
control statistics	Major Injuries Jan. Feb. 0 0 0 0 0	Reckless & Drunken Driving	Jan. 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Def. Equipment Jan. Feb. 2 2 2 2 2 2 5 5 11	Right of Way V. Neg. Dr. Parl Jan. Feb. Jan. Feb. Jan. Feb. Jan. Feb. Jan. Jan. Jan. Jan. Jan. Jan. Jan. Jan
PATROL DIVISION - TRAFFIC CONTROL STATISTICS February - 1950	Fatalities Jan. Feb. 0 0 0	Failure to Yield Right of Way	Jan. Feb. 10 6 2 2 12 8	Parking Imp. License Jan. Feb. 34 72 1 26 21 44 1 2 27 55 116 2 27	ETS ISSUED: Reckless Dr. Jan. Feb. 1 2 0 0 1 2
	Richland North Richland 36 23	ACCIDENT CAUSES: Negligent Driving	Richland 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Speeding	TRAFFIC CHARGES AND COURT CITATION TRAFFIC TICK Speeding Stop Sign Drumken Dr. Jan. Feb. Jan. Feb. Jan. Feb. Bichland 12 15 2 18 2 3 3 10 12 18 3 3 3 3 3 3 3 3 3

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on 2-24-50, on George Washington Way north of TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on 2-24-50, on George Washington Way north of Traffic Volume Count for week ending on 2-24-50, on George Washington Way north of Traffic Volume Count for week ending on 2-24-50, on George Washington Way north of Traffic Volume Count for week ending on 2-24-50, on George Washington Way north of Traffic Volume Count for Washington Way north of Traffic Volume Count for Washington Way north of Traffic Volume Count for Washington Washington Washington Washington Washington Washington Count for Washington Wash

Note: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

	Perpetrators	Involved.	ភ :	d C) =	2 (a)	0	2 (b)	(o) 9	n	(d)	a :	n (°)	(a) (c)	~ _	- - C	o c	o ~	t 0	0	ជ	ಶ	p () I	a C	o C		22	
	Cleared by	Other Action 0	0 (0 0	> C) 	0	'n	18	9	H	0	0 1	(72 (0 (O (o -	4 0	2 €	0	0	0	0 (0 (0 0		38	
	Offenses	Arrest 1	0	o ۱	0 0	> [-		ć	> r-	10	0	0	0	, ,	0	н	0	0	0 0	> C	0	0	0	0	0	0.0)	7.	
NC	Offenses	February	0	<i>ع</i>	0 r	ا	2 0	1	ر در	រដ	Н	8	8	К	E	႕	0	0	4	Ν (m ر	, N	7	0	8	0		73	7
OL DIVISION	7, 1950	. ∺ι	0	0	0	0 0	o!	٠ .	- ≯ Ç	6T	t o	≀ ←	10	9	7	. w	. ~	Н	9	י א	⊣ ⊢	4 (1"	, o	Н	2	Н	ᅱ	75	0
COMMUNITY PATROI	FEBRUAR	Unfounded) 너	0	0	⊣ (> C	>	r4 (0 0	o c	> C	o C	o 0	C	o C	0	0	0	0	0 (> <	o C	o 0	c	0	0	(
		Offenses anown or Reported to Patrol	- 1	1 67		23	~ 0		,	23	۲. ر		N (ρ• 3	J 0	<i>ر</i> د	н с	0		2			7 -	-1 C	•	,			
		Classification of Offenses	Assault	Possible Attempted Arson	Burglary	Attempted Brk. & Entering.	Co Larceny by Check	Forgery	Over \$50.00	Under \$50.00	Bike Theft	Dest. of Personal Property.	Dest. of Government Prop	Loss or Theft of Gov't. Prop.	Investigation	Disturbance	Public Intexication	Public Nuisance	Pickup For Outside Agency	Winday Dorsons	Carnal Knowledge of Minor.	Vandalism	Malicious Mischief	Molesting	Auto Theft	Prowlers	Counterfelt Money IMP	beatting homes or the	TOTALS,
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(Continued on Page Two)

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Ages 1	Age 12. Age 15.	Age 13	Age 15	Age 7. , Ages 15,
1 Juvenile Age 20. 2 Juveniles Ages 1	Juvenile, Juvenile,	Juvenile,	Juvenile,	Juvenile, Tuveniles,
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Perpetrated	= =	= =	: =	Case " by 1 Case " by 4
Case Case	Case	Cases	case Case	Case Case
	H &	\omega r		
(a)	(c)			(e)

Property Recovered During the Month-\$389.23 (6 bikes) No Colored Persons Involved. Represents Unknown. j

COMMUNITY PATROL DIVISION NORTH RICHLAND CRIME REPORT

)

Classification of Offenses Offenses Known or Reported to Patro	Known or to Patrol	Offenses Unfounded	Actual Offenses January Februa	ffenses February	Offenses	Cleared by Other Action	Perpetrators Involved
Possible Attempted Arson 1 Larceny (Except Auto & Bike) Over \$50.00		0 000	0 0 % 1	ה סקר	0 0010	o ooo,	а Орнг
Investigation	مارا ا	000	00 0 - 4	~	D 0 H	40/4	1 7 2

There were no Juveniles or Colored Persons Involved. u Represents Unknown.

10

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COMMUNITY PATROL DIVISION CRIME COMPARISON REPORT

FEBRUARY, 1950

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 inhabitants:

Land	1950 0 0 0 0 0 0
North Ricl	1950 1950 0 0 0 0 0 0 0 0 0 0 0 0
Land	1950 1950 1950 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Rich	January 1950 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
North Richland	Six Months (Jan-June 1949) 0 1 16 5 97 5
Richland	Six Months (Jan-June 1942) 0 0 0 4 8 181 4
Oregon & Calif.	Months One Month Six Month 1949 Average (Jan-June 1 0 2.63 0 0 2.63 0 10.15 1.69 4 0 15.15 8 0 42.37 181 0 6.40 4
Wash.	Class. (Jan-June 1942) Murder Robbery 15.80 Aggrav. Asslt. 10.15 Burglary 90.90 Larceny 254.22 Auto Theft 38.4
	-,

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred a minol districts

Richland North Richland	January February January February	1950 1950 1950 1950	1	0 0	0 0 1	0 0	23 29 3 1	0 0 0	
North Richland	City Months	(9/61 19/9)	(74/T ample (74/T)) r	7,	1°	U 5) X	^
ըքորվորվ	٦١:	NOUT WONTER	Jan-June 1747	5 (ο.	-21	ω ; 1	181	7
rural districts	of Washington	One Month	Average	ET.	1.87	·63	12.39	70.26	6.34
in cittes or	State	Six Months	Class. (Jan-June 1942)	Murder .79	Robbery 11.25 1.87	Aggrav. Asslt. 3.82	Burglary 74.35	Larceny 241.60	Anto Theft 38.05

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures: February Richland January North Richland Six Months Jan-June 1949 Six Months Richland National Average Six Months Class. (Jan-June 1949) Auto Theft Burglary Larceny Robberry

published by the Federal Bureau of Investigation, which states: "It should be remembered that the number Note: Statistics of Juvenile offenses throughout the United States were taken from the Uniform Crime Report of arrests recorded is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

12:2591

COMMUNITY DIVISIONS

COMMUNITY - ACTIVITIES DIVISION February, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of month

Additions 0

Terminations 0

End of Month 12

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of February 28, 1950:

Administration	6
Principals & Supervisors	16
Clerical	18
Teachers	244
Health Audiometer	1
Building Custodians	51
Cooks	37
Nursery School & Ex. Day Care	11
Bus Drivers	2
Farm Manager	1
-	387

CLUBS AND ORGANIZATIONS

As of February 28, 1950, organization's personnel include:

Villagers, Inc.	7
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	2
Red Cross	3
Castle Club	1
Post Office	44
Veterans Administration	2
Girl Scouts	2
Masonic Lodge	l
Justice of Peace	1
	70

Community-Activities Division

Final arrangements were made on February 2, 1950, for the Village Players to use a paint hutment for the painting of the sets for the production of "No. Time For Comedy."

On February 3, 1950, the Gonzaga Glee Club presented a concert in the Carmichael Junier High School auditorium before a capacity house. The Richland Gonzaga Alumni Association were the sponsors for this concert. Profits will be used for a scholarship.

Mrs. Helen Louise Holmquist was the guest artist for the Symphony Concert held in the Carmichael Junior High School auditorium on Sunday afternoon, February 5, 1950. The crehestra is composed of musicians from Richland residents with five members from the surrounding areas.

Nine hundred sixty-five Boy Scouts observed the 40th Anniversary of the Boy Scout Movement during the week of February 6 - 11. The original troop of 20 boys was organized in December, 1943. The organization has expanded to its present size of 8 Packs, 8 Troops, and 2 Explorer Units in its seven years of existence in Richland.

in annual review combined with a Valentines Day Dinner for the Scout Leaders and wives was held in the main dining room of the Recreation Hall on February 14. Plans to send scouts and scouters to the National Jamboree were completed.

On February 16 and 17, the regular monthly inspection of all clubs and organizations was made by the Community-Activities Division and the Fire Protection Engineer.

On February 14, at the regular meeting of the Recreation Advisory Committee the following organizations were approved subject to security clearance: Emerican Society of Civil Engineers and H. W. Supervisor's Association. Approval was also given to the Richland Sports Association and the Theatre Werkshop to hold organizational meetings.

The Richland Light Opera Company presented the Operatta "H.M.S. Pinafore" on Friday and Saturday February 24 and 25. Near capacity audiences viewed the two evening performances and the matince performance. The All Saints Episcopal Church sponsored the programs.

Seventeen Service Orders were issued by the Activities Division during the menth. Twenty-feur Work Orders were written during the Menth of February. These have been reduced as a result of the revised leases.

CHURCHES

The following is a tabulation of full-time paid church personnel, as of February 28, 1950

-2-

1212593

	Ministers	Staff	Total
issembly of God	1	0	ı
Catholic	2	2	4
Contral United Protestant	2	2	4
Church of Christ	1	0	1
Church of God	1	0	1
Episcopal Church	1	0	1
Free Methodist	1	0	1
Foursquare Gospel	1	0	l
Mission Baptist	1	0	l.
Mo. Synod Lutheran (Redeemer)	1	1	2
National Lutheran	. 1	2	3
Nazareno	1	0	1
Regular Baptist	1	0	1
United Protestant - North Richland	1	0	1
United Protestant - West Side	1	0	1
United Protestant - Southside	1	0	1
United Protestant - Northwest	1	0	1
	19	$\overline{7}$	26

The Central United Protestant Church choir presented a concert which was open to the general public on February 19, 1950, in the Central United Protestant Church.

On February 16 and 17, representatives of the Activities Division and the Fire Protection Engineer conducted their regular monthly inspection of all government-owned church buildings.

On February 20, the Community-Activities Division received from the Community-Engineering Section the preliminary sketch of the church site requested by the Free Methodist Church. This location is on the southwest corner of Wright Avenue and Symons extended. Contacts have been made with the Free Methodist Church to see if the site meets with their approval.

The church construction program status is listed below:

CHUR CH	DATE STARTED	ESTIMATED % COMPLETE	OC CUPANCY DATE
Nazarene Church Latter Day Saints Latter Day Saints	April 12, 1949 February 5, 1949 August 22, 1949	98% 70% 20%	11/30/49
(Reorganized) U. P. Southsido Richland Baptist Church of Christ	November 5, 1948 November 27, 1949 December 21, 1949	98 % 98 % 45%	4/10/49 4/17/49

RECREATION

Trophies were awarded to all "Hoop Shoot" winners for the Richland contest in all age brackets at Columbia High gymnasium on February 7. District finals of the "Hoop Shoot" contest were held at Columbia High School on February 14. Charles Gant, 1016 McPherson, was the winner. Mr. Gant competed in the finals at Seattle on February 25, and placed sixth in the State.

Archery instruction classes for juniors were started February 25. The indoor archery range at the Columbia High School girls' gymnasium is utilized for this activity. Classes for elementary school age children are held from 1:30 PM to 3:00 PM, and older children meet from 3:00 PM to 4:30 PM each Saturday afternoon. Thirty-one children were enrolled in the initial sessions. Instruction is provided by the Reving Bowmen Archery Club and overall supervision and administration is handled by the Recreation Section.

The Roving Bowmen have utilized the indoor archer range on Friday evenings. The initial session was on February 3.

On February 27, a meeting was held to discuss the various plans and regulations for the kite centest to be spensored by the Recreation Section. Volunteer assistance will be provided by the Junior Chamber of Commerce, the schools, and the Youth Council.

Due to unavoidable complications in planning and administering the News Forum, the date for the forum has been tentatively set for April 20.

The winter recreation program now includes a badminton and ping pong group on Friday nights at Spalding Grade School gymnasium. The initial night was February 3. Instruction is offered to beginners and informal play progresses from 7:00 to 10:00 PM. Average attendance to date is seventeen (17) per night. Volunteer instructors are provided by the Richland Badminton Club.

Summary of the menth's participation in the recreational activities sponsored by Community-Activities Division:

		No. Sessions	No. Participants
Women's Sport Night		4	87
Co-Rec Sports		4	116
Men's Sports		3	59
Bodminton & Ping Pong		4	66
Foncing Class		3	28
Junior Archery		1	31
Weight Lifting		9	164 (104 teen-agers)
	Total	28	551

Preliminary plans have been made for the formation of a theatre work shop to be co-sponsored by the Richland Players, Inc. and the Recreation Section. This project will provide an opportunity for participation in the various phases of dramatics.

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Community - Activities Division

A Recreation Survey covering facilities (grounds, equipment, etc.), leadership, and expenditures for seven Washington cities has been completed. Cities included in the survey were Pasco, Kennewick, Yakima, Bremerton, Bellingham, Olympia, and Vancouver. The survey was made for the purpose of determining standards of neighboring cities and those of comparable size to Richland as an aid in developing areas and establishing facilities in Richland.

Ice skating facilities at the Columbia Playfield were maintained through the first week of February. Participation at the rink throughout the entire period of operation was low due to extremely low temperature and heavy snowfall.

Maintenance work was started at play areas - ball diamends and tennis courts - in order to have facilities available for use by March 15.

Community Service

Arrangements were made for the loan of three industrial films to the Columbia High School for educational purposes. The films were made available by the Richland Section of the American Chemical Society.

Community bullctin boards were located on Tright Avenue near the C & H Grocery and in the uptown business district south of the Davis Furniture Store.

The Community-Activities Division assumed the following duties and responsibilities in the conduct of the School Board and Community Council elections on February 4:

- 1. Arranged for the transportation of all election equipment from Prosser to the voting places, and returning same to Prosser after the election.
- 2. Assistance in contacting election officials and informing them of arrangements.
- 3. Arranged for the delivery of registration books, poll books, tally sheets and ballots to voting places.
- 4. Arranged for the printing of 200 Community Council tally sheets and 5500 Community Council election ballots.
- 5. Arranged for patrol assistance in delivery of poll books, tally sheets and registration books from voting places to the election headquarters in the 720 Building, Community-Letivitics Division office.
- 6. Had on duty one supervisor throughout the election day and until the final tabulation of votes was made.

-5-

Park Development

The construction program for the Richland Park System for the fiscal years of 1950 through 1955 was completed during the Month of February.

The Richland Park System write-up was completely rewritten during the month.

A large scale map of the Richland Park System has been completely revised to coincide with the new write-up.

MAJOR ACTIVITIES DURING MONTH

February		Gonzaga Glee Club School Board and Community Council	Carmichael Junior High
·	_	Election	All Schools
		Symphony Concert	Carmichael Junior High
	7	District #5 Final Hoop Shoot	Columbia High School
6 ~	.11	Observance of National Boy Scout Week	Community
	14	Valentine Day Dinner - Boy Scouts	Recreation Hall
24 -	25	H. M. S. Pinafore	Carmichael Junior High
25 -	25	Sub-District Basketball Tournament	Columbia High School
	28	Community Concert - Patricia Travers,	
		Violinist	Carmichael Junior High

GENERAL ELECTRIC COMPANY HANFORD WORKS COMMUNITY ACCOUNTING DIVISION

MONTHLY REPORT FOR FEBRUARY, 1950

ORGANIZATION

Employees - Beginning of Month	26	Exempt	Ħ	Male	8
Terminations	0	Non-Exempt	22	Female	18
Total - End of Month	26	Total	<u> 26</u>	Total	26

The Community Accountant attended a meeting of representatives of Oak Ridge, Los Alamos and Richland which was held in Washington, D.C. the week of February 13, 1950.

Rents	February	January
House Leases Processed New Leases Modifications Cancellations Total Active House Leases	123 4 12 6 5,703	97 4 104 5,706
Dormitory New Assignments Removals Total Occupancy	81 66 942	79 59 927
Rental Revenue was as follows: **Equipment *House *Dormitories *Facilities	\$ 163.93 254,382.15 13,072.33 33,617.10	\$ 60.07 255,297.02 12,580.20 49,658.54
Unoccupied Dormitory Revenue Loss Unoccupied House Revenue Loss Total Potential Revenue	\$301,235.51 2,725.17 2,739.74 \$306,700.42	\$317,595.83 3,217.30 3,775.48 \$324,588.61

^{*} Includes utilities furnished which are collected as a part of the rental.

The accountability control of houses was verified with the Housing Office and found to be in agreement. House and Dormitory receivable accounts are in good condition.

Seven Facility Operators still have equipment on a rental basis.

^{**}Includes coal handling equipment temporarily leased to Northwestern Fuel Cc. during cold weather emergency.

Telephone

Number of Work Orders Processed	685	526
Number of Working Phones	3,890	3,356
Revenue including Services	\$13,939.29	\$11,809,65

Four minor telephone account balances were written off in the net amount of .61 cents.

February

January

Work in the telephone section is heavy as evidenced by the increase of 534 working phones and a little over \$2,600.00 in revenue during the month. No increase in personnel has been necessary to date.

Rules and regulations covering rate schedules and application of rates have been compiled in cooperation with the Telephone Section of the Manufacturing Division and will be placed in written form similar to a regular Commercial tariff booklet.

Miscellaneous

Invoices Issued	277	209
Miscellaneous Revenue	3,970.55	751.68

Thirty-two collection letters were written during the month resulting in the collection of \$64.79.

The large increase in revenue from tenant service in comparison to the increase in number of invoices handled is in most part due to the large amounts of backcharges covering work and services performed for the Mart in connection with their renovation program.

The following building permits were issued during the month:

Lessee	Amount
J. C. Robinson L. A. Hopkins Total February Revenue	2.00 109.10 111.10
Previously Reported Total to Date	5,286.51 5,397.61

No Government owned equipment was sold during February.

Total amount sold to date is: \$105,439.97

ACCOUNTS PAYABLE

STATISTICS	February	January
Accounts Payable Vouchers Processed Freight Bills Processed Purchase Orders Received Net Amount of Purchase Orders Receiving Reports Received 2 2 5 0 0 Total Net Amount Disbursed	140 11 52 \$ 5,762 61 \$48,779	178 13 59 \$7,598 75 \$ 3 5,325

A summary of active Community Subcontracts is shown below:

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Frederickson, Dr. J. L. Newland Cafeteria Richland Maintenance Co. West Coast Painters Co. Abrams Aerial Survey Corp. Tacema Asbestos Cc. Holaday & Edworthy, Inc. Pringle, R. A. Curtis Middlebrook & Co. (Service Agreement)	G-219 G-268 G-281 G-284 G-289 G-290	* 1,483.00 * 5.58 * 70,856.39 58,526.79 14,208.41 12,667.35 4,700.00 9,925.57 10,800.00	0 7,443.45 0 14,208.41 2,959.29 0	1,483.00 5.58 70,856.39 43,974.85 14,208.41 12,667.35 0 0 3,600.00	0 2,926.34 0 0
,,		183,173.09	28,350.15	146,795.58	2,926.34

^{*} Total amount of contract will be total of estimates as submitted.

The Community Divisions Obligations and Expenditures report Compilation of B & O Tax, and Report on Overtime meals was submitted for consolidation to the General Division.

The Community Division's estimate of Cash Receipts for February amounted to \$96,500 and estimated cash disbursements were \$67,800.

COST

Reports

The January Operating Report was completed and distributed on February 15, 1950.

The Comptrollers Appropriation Report for January was issued on February 16, 1950.

Budget

A. Operations

Work sheets for each Community Division and Section were completed showing first six months actual cost and provision for the balance of the fiscal year 1950, 1951 and 1952 to be inserted. These sheets were forwarded to each respective office with a request that they be completed and returned to the Cost Division by March 3, 1950.

Estimated assessments to other Divisions were prepared.

B. Construction

A work sheet for use of the Engineering Section was prepared and all data concerning prospective Projects were gathered in preparation for a meeting with the Engineering Section.

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Work Orders

A summary of service order statistics for the last two months is listed below.

•	Service Orders		To	tal
	Jan.	Feb.	January	February
1. Plumbing 2. Electrical 3. Heat & Vent 4. Glazing 5. Lock & Key 6. Carpentry 9. Sheet Metal	775 2,295 939 58 184 327 12	947 2,556 921 133 390 650 8 5,605	1,943.67 6,049.25 3,588.90 300.43 541.94 761.26 87.20 13,272.65	2,685.06 6,488.88 3,739.07 669.79 1,425.12 1,776.88 62.92 16,847.72

The new Work Order Forms will be shipped March 20, 1950. The installation date of the new procedure will probably be July 1, 1950. The revisions in our present procedure will not effect our compilation of cost.

Statistics covering regular work orders:

		JANUARY	FEBRUARY	NET CHANGE
Active Routine Active Normal		484 1,372 1,856	419 <u>1,747</u> 2,166	-65 <u>/375</u> /310
Work Orders Received Work Orders Complete Work Orders Incomple	đ	1,291 1,093 7 198	1,634 1,324 310	/ 343 / 231 / 112

GENERA	L LEDGE	<u>3</u>	Amount
	No.	Debit	Credit
Second Class Invoices Received Second Class Invoices Issued	80 41	\$395,708.06 168,750.44	\$251,740.28 281.60

The January Trial Balance and supporting financial statements were forwarded to the General Division for consolidation on February 17, 1950.



DESIGN AND CONSTRUCTION DIVISIONS

February 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll: Beginning of month End of month	554 579
Net increase	25

INVENTIONS OR DISCOVERIES

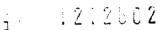
All persons engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the best of their knowledge and belief, no inventions or discoveries were made in the course of their work during the period covered by this report except as listed below. Such persons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

INVENTOR	TITIE
J. B. Medlin	Charging and Discharging Speration for Special Request Materials
P. P. Smith	Semi-manual Continous Pile Charging Mechanism
C. C. Reitz	Combined Gas Seal and Guide for Sheet Rods HDC-1527
George Thayer	Electrical Connectors
John L. Swanson	A Plastic Trap
C. W. Harrison	Final Product Mechanism
C. W. Harrison	Sampler Pipette
R. C. Hoffman	Fire Alarm and Temperature Detection Device
T.	EACTOR DIVISION

I. SUMMARY

"DR" Water Plant

With the assistance of the Principal Mechanical Engineer, D & C Design Staff, a study was made of the problems associated with the expansion of the "DR" Water Plant. Document HDC-1631 describes in detail the results of the study.



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Materials

Information received from Battelle on the preparation of gadolinium-titanium alloys generally substantiated that obtained previously from Remington Arms. The possibility of obtaining gadolinium-titanium alloys containing up to 4% Gd is very encouraging. Limited results from corrosion tests of sirconium and aluminum alloys in process water show zirconium to be very promising as a tube material and indicate that several aluminum alloys possibly may serve as substitutes for 2S aluminum.

A meeting was arranged with representatives of the Battelle Memorial Institute to discuss a proposed investigation to determine the basic physical properties of magnesium oxychloride concrete. This information will supplement the nuclear properties established by Oak Ridge. Comments on the program will be submitted by Battelle the week of February 26th.

Heat Transfer Test Facilities

Because of the significant difference between the cost estimates prepared by the Reactor Division and by Atkinson-Jones, it has been decided to request lump sum bids from several contractors for the preparation of the test facilities. The necessary specifications and drawings have been prepared for discussion with the Contract Section. The latest estimate for the start of the test program is approximately July 1.

II. STATISTICAL AND GENERAL

Graphite Key Tests

This test program is being run to evaluate the relative strength of round vs. square keys and key ways. The results of the tests completed to date indicate that the round keys are much stronger than square keys, because of the lack of stress concentration inherent with the latter.

Control Rods

Preliminary analyses indicate that satisfactory deceleration of the control rod will probably be obtained using the proposed inverted thimble, which also serves as a pneumatic cylinder. The deceleration force is obtained by a piston attached to the upper end of the control rod and fits in the inverted thimble.

These studies are being continued.

Control Analyses

The preliminary studies indicate that it will be feasible to gas cool gadolinium control rods. These preliminary calculations should be completed by March 15, at which time some tentative conclusions will be reached.



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Control Analyses (continued)

It has been determined that 11,000 balls of 3/8" diameter, for the 3-X System, will have the same effectiveness as a 3" round rod. The results of the preliminary analysis indicate that sufficient rapid control will be obtained by the falling balls to obviate the need for a quick acting supplementary control system.

Irradiation Tests of Rubber Samples

Eight synthetic samples and two samples of natural rubber have been subjected to 90 hours of exposure. Only the two natural rubber samples appear to be unaffected by exposure, whereas all of the synthetic samples have deteriorated to the point where they have lost all resilient properties and several have actually broken.

Heat Transfer Tests

Heater Tube. The General Engineering and Consulting Laboratory was visited February 7 and 8 with the intention of improving the progress on the procurement of the heater tube for the 100-G heat transfer test. The discussions included joint design, process tube brazing, bus design, end water connections and electrical connections, thermocouple and voltage probes, internal fluid, and test stand.

Recirculation Test

The present status of this test is as follows:

Drawings	80%
M & E Lists	95%
Equipment Requisition	100%
Material Requisition	75%
Construction	0%

Owing to a postponement of the scheduled February shutdown of "H" Area, the planned installation of certain of the test piping has been delayed. This does not represent any delay in the over-all test schedule.

The Production Test Request covering this work has been rewritten to redistribute the responsibilities shared by the "F", Technical, and Reactor Divisions.

Control Rod Alloys

Word was received from Battelle that they also had succeeded in preparing gadolinium-titanium alloys, by arc melting under a 99.92% argon atmosphere. Gadolinium exide was used as a source of gadolinium. In one heat, it appeared that about 5% gadolinium had been alloyed with titanium, although the hardness of this heat (232 Vickers), which presumably contained 0.8% oxygen was less than the 320 Vickers hardness to be expected in titanium containing this much oxygen. Previously, experimental work by Remington indicated that only about 4% of GD could be dissolved in titanium, using Gd₂O₃. Verification of the gadolinium content of Remington's alloys was received from Research Chemicals. These alloys contained 3.85% to 4.2% Gd.

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Control Rod Alloys (continued)

In other experimental trials with titanium-boron alloys, it appeared that about 2% boron was the maximum amount that could be incorporated in titanium and still yield a workable alloy.

III. ORGANIZATION AND PERSONNEL

Number of employees on payroll;

Beginning of month

End of month

Net increase

41 42

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SEPARATIONS DIVISION (D&C)

I. DESIGN

MJ-1 Production Plant

A project proposal was prepared and submitted to the Manufacturing Divisions covering all work authorized by the latest modification to Directive HW-99.

The Kellex narrative report on Main Production Plant, Stack and Mock-up for the month of February has not been received. The scheduled percentage completion of design as of the end of February is 38.0. The expected completion is 35.0%. All of the Engineering Flow Diagrams with the exception of one have been either approved or submitted to the Separations Committee for approval. The AEC has approved the scope drawings for the Mock-up Building in its new location in the West Area. Scope drawings covering the architectural, heating and ventilating for the 202-S Building have been submitted to the AEC for approval.

Approximately 300 scope and construction drawings have been received from The Kellex Corporation for approval by General Electric. Approximately 50 of these have been approved and are being distributed to the contractor. The rate at which Kellex has been submitting drawings for approval was satisfactory up to February 11. Between February 11 and February 25 the rate decreased. Kellex is aware of this condition and has taken steps to remove the internal bottlenecks and get back to the scheduled rate so far as possible. However, it should be pointed out that the rate of approvals by General Electric through the month of February was extremely low, and of the approximately 200 drawings scheduled for approval by the end of the month, 150 are still not approved.

Firm agreements have been reached with Kellex in regard to the Operating Galleries piping diagrams, and design is proceeding with the expectation that there will be little cause for any delay in these drawings.

Special equipment design, i.e., heat exchangers, towers, and concentrators, have been firmed up to Kellex except two vessels on which data and decisions from Technical Division were required. The data on one vessel have been received and will be transmitted to Kellex; the remaining data are expected shortly.

The total number of requisitions received as of February 24 is 102. Of this total, 69 have been forwarded to Procurement; the balance are being reviewed by General Electric or corrected by Kellex. Procurement Division has agreed to accept a bulk requisition for stainless steel plates to be allocated to specific vessel requisitions by size and thickness.

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MJ-1 Production Flant (continued)

This will enable the rolling of steel now held by Alleghany-Ludium. Part of the pipe connector order on the Crane Company has been approved by the Atomic Energy Commission. All male ends and a portion of the female ends should now be on order. Of the 19 construction specifications being prepared by Kellex, 13 have been approved and issued. Specification HW-4302, "Plain and Reinforced Concrete," was recalled from the Atomic Energy Commission prior to receiving their approval, and has been issued.

Design schedules for outside auxiliary facilities being designed by General Electric have been brought up-to-date and are ready for formal issuance by the Separations Division. All of the remaining basic design information has been transmitted to Power & Mechanical Division with the exception of two items, the waste lines to the Tank Farm, 240-S, and the Laboratory Waste Disposal Facilities, 219-S. In connection with the latter, we have been requested to provide an estimate for two alternates to the Technical Divisions' Contact Engineer by February 27. It will be necessary to receive firm scope instructions from the Technical Division on 219-S as quickly as possible in order that this facility may be constructed on time, and in order that its construction will not interfere with outside utilities. Outside utilities scope work is approximately 92% complete and construction design is approximately 40% complete.

MJ-1 Waste Disposal Facilities

It was decided during February to remove the steam lines, water lines and permanent railroad from the lump sum contractor's scope of work for the 241-S Tank Farm, and to include this work in the Atkinson-Jones' contract. Invitations to bid are being prepared by the Contract Division.

The second preliminary estimate of the construction costs for installing the R. M. Line together with a summary, by tasks, of the basic field costs was completed. The total estimated cost was \$1,517,400 which was approximately \$31,700 more than the estimate of April, 1949. The increase was due to the availability of some additional information.

There is to be no further extension of the lA classification, which includes the design modifications requiring immediate action that are necessary to make the R. M. Line operable, unless it should develop that the modifications can be incorporated in the line at no added expense and with no delay to installation.

Fersonnel from Schenectady were in Richland February 27 and 28 to discuss their revised cost estimate and to investigate the possibility of doing some of the assembly and test work on the R. M. Line equipment at Hanford.

Authorization was received from the Atomic Energy Commission to eliminate the personnel barrier in the operating or Zone 2 side of the R. M. Line. This was the barrier which separated the 234 and 235 portions of the building. The section of the wall in Zone 3 area is to be retained.

The justification letter for Construction Completion of the Mechanical Development Shop was approved by the Atomic Energy Commission, but no actual work will be done nor orders placed for the equipment until the current review of NJ-2 costs indicates that such expense is permissible.

An investigation was made of the water chiller system, Fhase I work. Operating







MJ-1 Waste Disposal Facilities (cont.)

experience since the building start-up has shown that the original specified quantity of chilled water flow can be substantially reduced. This factor, together with the evaluation of the equipment, has resulted in a decision to install a new tube bundle in the existing chilled water system. A requisition has been issued.

A work order was issued to the Instrument Division to install the manual synchronizing controls on blower EM-3 and EM-4.

A work order issued in April, 1949, for disconnecting and disassembling the temporary construction electric feeders and substation near the 234-5 Building was cancelled.

The work to be done in H. I. Room 161 has been outlined and submitted to the Estimating and Control Saction of the Project Engineering Division in order to obtain an estimate before the work order is issued.

MJ-3

GE & CL design on the electrolytic cell is under way and the first report is expected by the end of this month.

Scope approval has been obtained for the Cell 5 installation and is essentially ready for approval on Cell TA installation. Flow sheet and layout work on Cell TB is proceeding on a relatively firm basis, based on information from the Fansteel Metallurgical Corporation on the feasibility of vessel and equipment fabrication.

Sampling device mock-ups are being fabricated to test methods developed by an initial study. The design of sampling devices and carriers will proceed on the basis of the results of these tests. Detailed design of equipment and jumpers is behind schedule one or two weeks on Cell 5 equipment, principally because of a shortage of drafting manpower. Drawings have required nearly twice the time originally estimated for drafting.

Scope of temporary construction facilities has been approved and design work on these facilities is nearly complete.

Scope design of the 222-T Laboratory addition has been initiated on the basis of sketches received from the Technical Divisions. The new laboratory addition will probably occupy less than 3,000 square feet in area. Preliminary schedules for the scope and detailed design of this building have been prepared.

Detailed design of the 272-E mock-up facilities is under way and a preliminary schedule has been issued.

The scope print covering mechanical design work on the 291-T fan installation has been prepared and is awaiting approval.

A Material and Equipment List has been prepared for 221-T and 272-E but not yet issued. Material and Equipment Lists are still to be received on 291-T and 222-T.

The design of laboratory equipment is proceeding according to schedule.

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<u>MJ-4</u>

As previously reported, a Design Instruction, including an Engineers' Flow Sketch has been prepared covering removal of waste from one cascade of the 241-U Tank Farm. This is to serve as a basis for a firm design proposal to be submitted by an architect-engineer. Four work orders have been written to obtain information necessary to design. These include:

- 1. Temperature measurements in both used and unused underground pipe lines during cold weather.
- 2. Investigation into light intensity required for viewing by periscope of the inside of a 241 waste tank.
- 3. Pressure testing of presently unused underground waste lines in the 200 Areas.
- 4. Radiation intensity measurements within specific 241 waste tanks.

Cost estimates were completed on the two possible waste transportation systems, pipe line vs. tank cars, and the questions resolved in favor of pipe line transportation.

The Chemical Flow Sheet was received from the Technical Divisions on February 16. Material Balance calculations have been completed and issued for approval by the Process Working Committee.

An Engineers' Flow Sketch and Process Description covering feed concentration, extraction, waste concentration and nitric acid recovery, product concentration, and organic treatment is approximately 90% complete. Layout studies for the 221 Canyon are also estimated at 90% complete. Design of special equipment such as fractionating towers, condensers, etc., has been started.

MJ-5

Authorization to proceed with Preliminary Design and Preparation of a Project Proposal has been issued.

Organization of the MJ-5 group is being built up through a services contract with Fluor Corporation. Preliminary work on layout and flow sketches has been started.

Redox Analytical and Plant Assistance Laboratory

The architect-engineer reports design approximately 90% complete as of February 28, 1950.





HW-17056

Redox Analytical and	Plant	Assistance	Laboratory	(continued)

	/	Architectural and foundation drawings with the exception of foundation details on the Multicurie Wing have been issued for construction. Structural drawings except slab details and second-floor structure have been issued for con-
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MJ-3

All the Work Orders for 221-T Canyon clean-up have been issued and work is under way.

About 20% of the Work Orders for temporary construction have been issued; work has not yet started.

Requisitions for designed equipment for 272-E are all issued. Bulk orders have been issued for the materials required for 221-T jumper fabrication.

Redox Analytical and Plant Assistance Laboratory

Construction work on this facility was released on February 13, 1950. Work to date has consisted of construction of temporary facilities and utilities and grading.

III. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month

End of month

73 84

Net increase

11

POWER AND MECHANICAL DIVISION (D&C)

I. SUMMARY

With fair normal weather the latter half of February, construction progress on projects both inside and outside the barricade has been satisfactory. Such cannot be said of progress during the early part of February because of subzero temperatures.

Due to ice conditions on the Yakima River above the two highway bridges, considerable anxiety on the part of all concerned was relieved with the passing of heavy ice February 20 and 21. Blasting with small dynamite charges previous to the heavy ice flow, particularly on Sunday, February 19, kept the channel clear for the heavy movement of ice the two following days. This, no doubt, was a contributing factor which possibly averted a serious ice jam above the bridges. Construction work on the Yakima River railroad bridge was resumed the latter part of February, with steel trusses now on the site, with one span in place as of March 1. Steel work for the trestle over Highway 410 was completed February 20. Physical completion of the total NP-UP Railroad Connection, Project C-185, is estimated at 65 per cent.

The work load in the Drafting Section from revised drawing schedules indicates an average of 115 draftsmen required for the months of March and April. The contract section has been negotiating with Chas. T. Main, Inc., of Boston, Massachusetts, to furnish qualified draftsmen to meet the schedule. Contract G-285 is now in the process of final negotiations.



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SUMMARY (continued)

In the general engineering section, an analysis of time spent by the 27 engineers shows that 48 per cent of the time was charged against other divisions and 52 per cent of the time was spent on Power and Mechanical Division projects.

Since the speed-up program on DR was initiated during the first part of February, the contractor assigned a second shift starting February 20. A small third shift of 15 men was initiated February 28 to handle form stripping, clean-up, concrete curing, and maintenance. Approximately 1800 cubic yards of concrete have been poured to date on building foundations, 183-DR and 190-DR. It is estimated that approximately 2-1/2 to 3 per cent of the physical facilities are complete.

II. STATISTICAL AND GENERAL

Briefly listed in the following is the status of the active construction projects:

C-185, Railroad Connection South of Richland: This project is approximately 65 per cent complete. Work on the Yakima River bridge resumed on February 15 and has continued satisfactorily to the end of the month.

C-288-A, B, C, D - Richland Village Improvements

Existing Business District (C-288-A) is 72 per cent complete.

Light Industrial Area (C-288-B) is complete with the exception of small

ight industrial Area (C-200-8) is complete with the exception of Small items.

New Central Commercial Area (C-288-C) - final inspection was held in February.

Neighborhood Shopping Areas (C-288-D) - Duportail and Wright portion has been accepted as complete. The entire project is approximately 80 per cent complete.

- C-234, Marcus Whitman Grade School: Work on paving is essentially complete.
- C-233, Spalding Elementary School: All paving work on this project complete with the exception of Laykold application on the tennis courts.
- C-232, Carmichael Junior High School: Paving work is 35 per cent complete to date.
- C-328, Lee Boulevard: Completed and finally accepted.
- C-203, Sawage Disposal Plant: Paving work is 10 per cent complete.
- C-312, DR Water Works: Design progress as of February 27 is 73-1/2 per cent.

 Design work on the gas system, Building 115, is scheduled for completion around May 1.

Field construction work is moving along in routine order. The 230 KV line relocation was completed February 7 and the line was energized February 9, as scheduled. Approximately 270,000 cubic yards of earth have been removed, representing over 90 per cent of the excavation required for the main structures.



C-342, DR Water Works (continued)

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Temporary construction is now 80 per cent complete.

The first concrete was poured on the job February 9 from the Operations plant north of White Bluffs. The central mix plant between 200 East and 200 West areas was placed in operation February 20. The yardage poured to date on 183-DR foundations is approximately 1800 cubic yards.

The average daily force for Atkinson-Jones on DR for February is 732 manual and 420 non-manual employees.

The temporary construction fence for 100-DR required by the H. I. and Security Divisions will be erected during the month of March.

C-276, Over-all Plant Telephone System: All work now authorized (Part I) on this project was completed February 20 and final inspection made February 28. A few minor exceptions were noted and corrections will be made.

Hanford Works Laboratories:

Study GET-14, Radiochemistry Building: The cost estimates follow generally the scope plans prepared by J. Gordon Turnbull, Inc., and are essentially complete. The project proposal is scheduled for submission March 20.

GET-15, Radiometallurgy_Building: Revised scope drawings sufficient for estimating purposes have been prepared. Estimates are due March 20.

GET-16, Plot Plan and Utilities: Tentative arrangement plan has been prepared and submitted to the Technical Divisions for preliminary approval prior to preparation of estimates.

- MC-964, Records Depository: Awaiting approval of project proposal by the Atomic Energy Commission.
- C-204-B, Additions to Kadlec Hospital and Medical Arts Building: Study has been completed in accordance with the last information furnished by the Medical Division and forwarded to W. D. Norwood. It is probable that part of this work may be altered by the Medical Division,

The work in connection with the Medical Arts Building has been held up pending information from Medical.

- C-289, Additional Laundry Facilities, 200 West Area: All design information necessary for preparation of bid invitations has been submitted to the Contract Section.
- C-352, Jadwin Avenue Relocation: Cost estimates for construction are being prepared based on final plans.
- C-353, Richland Water Supply: The Contract Section has received approval from the Atomic Energy Commission to negotiate with Alvord, Burdick & Howson as architect-engineer for this work.

Completion reports were written on Projects C-241, C-292, C-299, and C-314 and Study AEC-21 during the month of February.





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III. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month 196
End of month 205
Not increase 9

CONSTRUCTION SERVICES DIVISION (D&C)

I. SUMMARY - None

North

II. STATISTICAL AND GENERAL

Richland Construction Camp			
	Beginning of Month	End of Month	Net Change
Camp Population (Barracks 320) (Trailers 1709) (Houses -572)	2397	2601	≠ 204

Barracks in Use

9 wings, one-story male barracks
2 wings, one-story female barracks

Trailer Lots

Occupied - 603

Houses

Of the 201 houses available in North Richland Camp, 31 were vacant at the end of the month. Sixteen houses were assigned during the month and 14 vacated.

Maintenance

The construction contractor's maintenance force at the end of the month totaled 50 employees.

Work Order Control

Number brought forward 1-28-50	36
Issued in February	103
Completed in February	85
Voided in February	5
Palanco carried forward 1-24-50 (Fri.)	49



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H-17056

North Richland Construction Camp (continued)

Steam Generating Plant

The following is a resume of the operation of the steam generating plant from January 28, 1950 through February 24, 1950, inclusive:

Steam generated, M Pounds	23,522
Oil consumed, gallons	16,270
Coal consumed, tons	1,501
Boilor efficiency, average percent	77.59%
Steam Cost per M Pounds	.885

Commercial Facilities

There were 18 commercial facilities operating at the close of the month.

From the information available at this time the trend of business is noticeably improved.

Community Activities

During the month Community activities increased. There were 48 church meetings and 23 other gatherings held in the community during the month.

Camp Columbia

The custody of Camp Columbia and the operation of the necessary utilities were assumed by the North Richland Realty Section on February 1. At the present time there is a resident caretaker who will remain until the camp is disposed of.

Two employees of the U.S. Engineers are presently housed at the camp on a temporary basis.

Office Scrvices

A survey of anticipated requirements of office furniture for D&C Divisions and Subcontractors was conducted and certain items were obtained from Pasco Marchouse. This equipment was to be disposed of and will help to supply future needs.

Office space has been reserved in Building 87 for the Power and Mechanical Division. The space is to be utilized by draftsmen.

Services performed during the month by this section included the following:

Ditto Masters Processed Stoncils Processed Mail Handled (pieccs) Mail Resigtered (pieccs) Teletypes Sent and Received Telegrams Sent and Received	3,241 3,009 172,821 150 482 318	Copies Copies	56,098 132,142
Orders issued for Stationery Stationery issued (requests)	84 1,262		31

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ce Services (continued)		H7-17056
Phone Installatims requested	26	
Phone Moves requested	74	
Office Furniture Moved (pieces)	224	
P. I. T. Processed	12	
Special Messenger Runs	148	
Office Machines Delivered Repair Shop	10	
Service Calls	620	
Work Orders Issued	14	
Requisitions Approved	9	
Reports Prepared	10	

Security Administration

A summary of activities is as follows:

Visitor passes issued	169
Badge number changes	215
	6
Lost Badges	618
New Hires (Contractor)	
Terminations (Contractors)	127
Number of Subcontractors and Vendor	
Employees as of 2-24-50	2,160
"FP" Clearance requested	28
Received this month	73
	125
"Q" Clearances requested	
Received this month	170
"P" Clearances requested	19
Reinstate - Request-	426
Visitor Clearances Requested	20
	192
Total Clearances Requested	
Total Clearances Received	243

		IN				OUT	
Area Badges Authorized:	A	₹.O.D,	<u>B</u>	T	A	V.O.D.	. <u>B</u>
100 D Operation	0	2	0	0	0	1	0
100 F Operation	0	0	0 -	5	0	1	0
200 E Operation	0	2	0	4	0	0	0
200 T Operation	0	3	0	5	0	0	0
100 DR Water Flant	386	0	0	4	47	0	0
Redox (Construction)	214	0	3	0	0	0	0

Effective Friday, February 24, 1950, the Adminsitration Area of the 3000 Area was established as a "controlled" area during the night shifts, Saturday, Sunday and holidays.

Major Construction Equipment

Equipment assignment as of February 28:

Atkinson and Jones 743 pieces
Design and Construction Div. 108 pieces



DECLASSIFIED



H :-17056

Safety Report		Lump Sum
Construction Injuries	C.P.F.F. Contractors	Subcontractors
Major Injuries	ı	0
Sub-Major Injuries	0	0 .
Minor Injuries	46	0

No motor vehicle accidents were reported during the month. A fire seriously damaged the trailer of Dale Clender located in the Trailer Camp. Fire damage to the trailer was estimated at \$300. and personal property loss at \$500.

Labor Relations

- 1. No work stoppages occurred during the month.
- 2. Concerted effort was made during the period to negotiate an addendum to the Hanford Torks Agreement to cover Steamfitters and Plumbers on the project. Negotiations are still under way without an agreement having been reached on the addendum to date.

Inspection Section

The Inspection Section has continued to perform routine concrete test work, welder qualifications, and welding and riveting inspection in connection with the fabrication and erection of structural steel for railroad crossing at Highway #410 and the Yakima River.

Specimens of concrete for test started to come into the laboratory February 13 from 100 DR.

III ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of Month

End of Month

108

Net Increase

7

CONTRACT DIVISION (D&C)

I SUMMERY

Negotiations with Hanley & Co., Subcontract No. 37 under G-133 have resulted in full agreement on complete rescoping of work, cost and fee for MJ-1. Modification No. 1 covering above was forwarded to the Commission for formal approval on February 23, 1950.

The scope of work for Newbery-Neon Electric Co., Subcontract No. 22 under G-133 is in the process of being completely restated in Modification No. 10. All provious modifications are being incorporated in this modification and the revised



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CONTRACT DIVISION (D & C) Continued

scope classified by the following groups: (1) Work Completed; (2) Major Jobs Now in Process; (3) Minor Jobs Now in Process.

Subcontract G-150-A, J. Gordon Turnbull, Inc.--Graham, Anderson, Probst & White, Inc., covering seven (7) A-E items pending since early 1948, has been agreed upon by all parties concerned and formally approved by the Commission.

II. STATISTICAL AND GENERAL

Twenty-three contract items were completed during the month. Fifty-one contract items remained open at the end of the month.

III. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	23
End of month	26
Net increase	3



PROJECT & RELATED PERSONNEL - FEBRUARY 1950

	1-31-	<u>-50</u>	2-28	<u>-50</u>
Civilian Personnel - Atomic Energy Comm. Civilian Personnel - G. A. O.	341 8	• .	339 8	
Total		349	بمغد	347
RICHLAND VILLAGE PERSONNEL				
Commercial Facilities (includes No. Richla Organizations, Clubs. Etc., Schools Churches	nd)1011 77 389 26		1021 70 387 26	. •
Total		1503	•	1504
CONSTRUCTION SUB-CONTRACTORS				•
Atkinson & Jones Newberry Neon Urban Smyth, Warren Co., Hanley & Co., Kellex Corp., J. A. Terteling & Son J. A. Troxell Charles T. Main Inc., No. Electric Mfg. Co., Graham Anderson, Probst & White Inc., & J. Gordon Turnbull McCorkle Const. Co., Curtis Sand & Gravel Fisher - Pudget Sound Painter Bergman & Lampson Consolidated Western Steel	1000 96 12 - 397 40 6 103 2 23 39 10 - 26 15		1660 137 15 4 403 52 12 135 2 22 24 12 3 27 17	
Total		1769		2525
General Electric Personnel		7431		7464
Grand Total		11052		11837