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- # 5 - J. R. Rue
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- # 7 - A. B. Greninger
- # 8 - ~~F. R. Sreedon~~ *W. E. Johnson*
- # 9 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
- #10 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
- #11 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
- #12 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
- #13 - Hanford Operations Office
Attention: F. C. Schlemmer, Manager
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Attention: R. W. Richardson, Historian
- #15 - 700 File
- #16 - 700 File
- #17 - 700 File

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REPOSITORY PNL
 COLLECTION Atmospheric Releases
 BOX No. N/A HANFORD WORKS
 MONTHLY REPORT
 FOLDER# N/A NOVEMBER 1949

December 16, 1949

DECLASSIFIED
 WITH DELETIONS
 By Authority of W.A. Snyder 6-12-91
RLO-CG-4
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December 16, 1949

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GENERAL SUMMARYNOVEMBER, 1949**DECLASSIFIED**MANUFACTURING DIVISIONSProduction Divisions

A total of 57 tons of metal was discharged from B, D, and F Piles at an average concentration of 392 MW/ton. Approximately 13 tons of metal at an average concentration of 449 MW/ton were discharged during the month. The operating efficiency was 89.6 percent exclusive of the H pile which had several shutdowns. The operating levels were 275 MW at B, F, and E piles and 305 MW at D pile at month end.

A total of 78 tons of acceptable slugs was canned at a yield of 92.7 percent. The machining yield of 74.8 percent represented a new high. The melt plant produced 19 tons of billets at a yield of 71.4 percent.

Sixty-three batches were started in the Canyon Buildings, with 63 batches being processed through the Concentration Buildings and 70 through the Isolation Building. The average purity of completed batches from Isolation was 98.4 percent.

Mechanical Divisions

The balancing of the 234-5 ventilating system is completed.

A 63 percent increase of inbound cars over the past two months was due to heavy shipments of industrial coal.

A major power disturbance at 100-B on November 26, 1949 made it necessary to establish Critical Power Conditions (Grade "Z"). One hour outage was required for switching. Replacement of burned poles and cross arms was necessary.

In an effort to decrease over-all electrical demand, procedures have been developed with the Power Division for maximum off-peak river pumping at the 100 Areas.

TECHNICAL DIVISIONSPile Technology Division

The H Pile operated at 275 MW through most of the month. Anticipated loss of reactivity was encountered, caused by the time delay in the build-up of plutonium. Anticipated evidence of graphite expansion was observed, caused by the initially low graphite temperatures.

Increases in carbon dioxide concentration in the atmosphere of the B and D Piles resulted in a month-end status of 100% carbon dioxide at the H Pile, 80% at the B Pile, and 60% at the D and F Piles.

General Summary

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Operation of the critical mass facility is scheduled to start on March 1, 1950.

All four lines of the P-10 extraction facility were in operation by the end of the month.

Separations Technology Division

Improvements in calibration and measurement methods have brought recent Separations Plants material balances to 100.4% and 98.3% for B and T Plants, respectively, but further improvements are still being sought. The B Plant has been converted to semi-parallel operation. A reduction of the Concentration Building metathesis time cycle to ca. 12 hours has thus far been satisfactorily effected in a production test currently in progress. Building 234-5 product salt conversions have averaged 93% and salt-to-metal conversions have averaged 93% and salt-to-metal conversions have averaged 98.3% during the past month. Core Model 090 equipment recently received have been calibrated with lead. The Model 051 core units have failed the electrolytic test following abrasion operations aimed at correcting dimensional defects.

In Redox development, eleven additional column runs were completed during the month involving studies of 1A, 1B, and 1C pulse column operation. The effects of pulse frequencies and amplitude of H.E.T.S., H.T.U., plate efficiency, and flooding capacities for these systems have been measured. In addition, five column runs were made to study the operation of the IS Rework Column and the IID and IIE Columns (second uranium cycle). Preliminary column studies of the T.B.P. metal recovery process have also been initiated. Semi-works runs on the di-uranate method of waste metal recovery feed preparation for Redox gave satisfactory phosphate removal but high uranium losses (ca. 20%) and precipitates with poor handling properties. Revision of the 321 Building ventilation system and installation of the Scale-Up inert gas generator have been essentially completed. The G.E. & C.L. Submerged Pump No. 2 was dismantled after nearly five months of continuous test operation in aluminum nitrate solution with no evidences of serious wear. Semi-works studies of the clarification of metal solution by Super Filtrol and the handling properties of this material have been continued.

In the research laboratory, exploratory studies of the TBP process for metal recovery have been initiated. These have involved measurement of concentration factors obtainable on the first column waste, system density and viscosity measurements, batch equilibrium studies, pulse column battery operation, and decontamination of uranium from plutonium. Continued ruthenium volatilization studies have resulted in the preferential choice of cobalt as the catalyst, after ozonization plus one Redox extraction and two scrub stages produced ruthenium D.F.'s greater than 10^5 . The use of Igepon 1P as an agglomerating agent in the precipitation of sodium di-uranate for metal recovery feed preparation has been studied, as have the rates of phosphate clean-up at varying acidities. Cerium has been used as a stand-in for plutonium in further studies of the phenylarsonate method of Redox coupling with metal production. A number of preliminary tests of 234-5 crucible and slag waste treatment has been

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carried out. Ion-exchange decontamination of 221 Building cell drainage and scavenging of Building 224 wastes are now being investigated. Feasibility establishment studies of catalytic decomposition of Building 231 peroxide supernatants have been continued.

In the 234-5 process development laboratory, studies of the precipitation of plutonium peroxide as a substitute purification process have been extended to yield measurements at high acid concentrations and variable temperatures. Equipment is being set up for the routine testing of calcium used in the 234-5 Building production.

After more than one year of operation, continued monitoring of the 200 Area exhaust air sand filters shows no change in pressure drop, air flow, or filtration efficiency. Preliminary pilot runs with No. 55 Fiberglas over a gas flow range up to 100 ft./min. have given promising results for high flow rate-reasonable pressure drop filter predictions. The formation of ammonium nitrate in the projected off-gas Fiberglas filters appears very probable from the results of recent test runs and methods of prevention are being scouted. Additional pilot runs with the silver reactor have continued to demonstrate iodine removal efficiencies in excess of 99%.

Metallurgy and Control Division

In the Battelle determination of uranium rolling constants in connection with 300 Area rolling mill design, it was determined that the roll separation force at 300° is three to eight times that at 600°C. From these data Project Engineering has calculated that the average deformation strength in rolling at 300°C varied from 44,000 psi in the first passes to 88,000 psi in the final pass (90 percent total reduction). Battelle's observations in this 300°C rolling indicate that it may not prove feasible in practice to break down the original cast structure at such low temperature, but that 300°C rolling of pre-worked metal proceeds satisfactorily.

Metallurgy Section development work on equipment for bronze dipping four slugs at a time was completed, and these new canning facilities were put into routine use by the P Division. The considerable extension of slug immersion time in the bronze bath made possible by this facility should assure the desired complete transformation of the uranium structure. Additional production and maintenance cost advantages will be realized. Promising results are being obtained in experiments with a slug dilatometer designed to afford a non-destructive slug check for completeness of transformation.

As part of the Rala design effort, the Analytical Section completed the preliminary calculations of shielding requirements and the design of internal fixtures for two junior caves to be used in the Rala laboratory. Equipment and space requirements for the spectrochemical facilities also were established, and plans were made for the formation of a special design group to expedite work on the detailing of new equipment for this laboratory.

As a result of a cooperative study initiated by the Statistics Group, a significant reduction in the width of cut-off tool used in uranium machining

was effected by the P Division. The net savings to accrue from this step are estimated at \$75,000 per year at the present production rate.

HEALTH INSTRUMENT DIVISIONS

Net changes in the force resulted in a total increase of seventeen people. There were five Special Hazards Incidents reported; none involved significant exposure.

The Operational Division report indicates the radiation problems in the field to be essentially the same as reported last month.

Atmospheric monitoring and land and vegetation contamination surveys followed the normal pattern. Considerable effort was expended in preparation for the "green run" schedules for the end of this period. Due to inclement weather the test was postponed until atmospheric conditions would permit adequate dilution of the activity.

Biological monitoring continued with no unusual accumulation of activity noted. The sheep to be used in the I¹³¹ toxicology study were received during the month. Experimental feeding is planned to start in early January.

PLANT SECURITY AND SERVICES DIVISIONS

There were no lost time injuries during the month. The injury frequency rate for the year to date has been reduced to 0.71.

Eight minor fires in the industrial areas resulted in a loss of \$150.

Volume remained the same in the process laundry. A decrease in the 700 Area Laundry volume resulted in the lay-off of several employees. It is expected, however, that volume in both laundries will increase within a short time due to the anticipated construction program.

The amount of mail handled increased further in November. The number of pieces handled, 403,223, represents approximately 100% increase since June.

Arrangements have been made for the Office Equipment Section to handle all office equipment requirements for the Construction Program.

The records inventory program is continuing at a satisfactory rate. Records inventory of the Manufacturing Divisions was completed during the month.

Patrol and Security personnel was allowed to decrease further during the month; however, it is anticipated that the Construction Program will necessitate resumption of hiring in January or February.

General Summary

DECLASSIFIEDEMPLOYEE AND COMMUNITY RELATIONS DIVISION

Open requisitions decreased from 110 at the beginning of the month to 86 at the end of the month. Total plant personnel decreased from 7,512 to 7,429. Turnover rate including terminations due to lack of work during November was 2.14%. Turn-over rate exclusive of terminations due to lack of work was 1.06%. A revised termination procedure was installed during the month of November. Seniority dates in three seniority groups were revised during November.

The G. E. Health Insurance Plan was completed during November, and at the end of the month 93.7% of all employees at the Hanford Works had elected to participate in this plan. Four employees retired during the month, two of which were on optional retirement. One employee death occurred during November. Seventeen awards, totalling \$730, were approved by the Suggestion Committee during November. One public liability claim against a subcontractor was settled for \$2,750.

Thirty-six supervisors participated in the 40-Hour Supervisor's Training Program in November. Three Employee Relations Handbook revisions and two additional sections were prepared and submitted to the Printing Shop. A total of 159 meetings was conducted by the Training and Program Development Group on G. E. Health Insurance Plan, with 4,422 non-exempt employees participating. Two sound movie films were previewed, and twelve sound slide films were reviewed during November. A training report was made to all Superintendents and Division Heads on November 29. Recommendations for appearance improvement in conference rooms were submitted to the Coordinator of Area Councils.

The Labor Relations and Wage Rates Division was concerned primarily with the processing of grievances and interpreting Article XIII of the HAMTC - GE Agreement. A formal hearing was scheduled by the NLRB in regard to the Building Service Employees International Union, to be held December 6. The Hanford Industrial Firemen's Union filed a petition with the NLRB for representation. The Technical Engineers and Architects Association filed an Amended Petition with the NLRB.

A meeting was held between the Council Negotiation Committee and the Company in which a Declaration of Intent was drawn up covering Article XIII of the Agreement. Conferences were held by representatives of AFL unions, and officials of General Electric Company and the Atomic Energy Commission. Two meetings were held with the Council Grievance Committee. All supervisors were informed regarding the disposition of the grievances settled and discussed at those meetings. Work was started on the Northwest Community Rate Survey. A survey was completed to determine the rates paid policemen and guards in the Northwest.

The continuing efforts of the Community Relations Division to provide necessary services of an advertising and publicity nature to Hanford Works and the Nucleonics Department resulted in the formation, effective November 1, 1949, of the Hanford Works Photo House. Services of the Photo House include: All news photography for the Nucleonics Department News Bureau, all photographs required for HANFORD WORKS News, all photographic services required by the Medical Division, which makes a complete photo-

graphic service available to all divisions of Hanford Works. The Hanford Works Photo House was privileged during the month of November to serve the Medical, Technical, Transportation, Community Fire, and Employee and Community Relations Divisions. A total of 3,982 prints were produced, 52 of which were handled through the classified files procedure, and 230 negatives were exposed, 39 of which were handled through the classified files procedure. The large number of total prints produced is accounted for by the fact that 3,155 2" x 2" identification badge photographs were produced for the plant.

A marked increase has been experienced by the Nucleonics Department News Bureau during the month of November in the number of requests for special information by local representatives of Northwest papers. In many instances the requests have been for a complete story about a particular event. In other instances the News Bureau has been asked to confirm current rumors or reports. The News Bureau has, since its formation, endeavored to encourage such requests. The report of Community Relations for the month of November contains specific mention of individual requests for information, and the manner in which various rumors and "unofficial" reports have been handled because they form an important part of Hanford Works community relations activities.

A total of 20 releases was distributed to the "Local List" of newspapers during the month of November, including releases to radio stations in the vicinity. Four releases were sent during the month to the 72 daily newspapers, radio stations, and wire services in the Northwest.

It is significant to note the interest expressed by local newspapers in obtaining a copy of the Richland Master Plan for use in preparing future stories. Dealing with this particular request has required patience and diplomacy in order to explain satisfactorily the circumstances surrounding the Master Plan which make it advisable not to release it beyond the organization specifically concerned with the operation of Richland.

The requests for films during the month of November totalled eight. Those films were obtained from the Portland films distribution center and scheduled by Community Relations personnel for showing by the organizations requesting them.

National Fire Prevention Week required the services of each of the various community relations groups and a complete report of their activities was contained in the over-all report prepared for use in national fire prevention contests.

All of the various phases of special programs' publicity portion of the over-all promotion plan used to present the new GE Group Health Insurance Plan to employees were completed during the month of November. The publicity during November included WORKS NEWS stories, photographs, an editorial, and an editorial cartoon, in addition to letters mailed to employees' homes and a specially prepared self-mailing piece which went to all employees' homes.

Distribution was completed during November by Special Programs, working in conjunction with the G-E mail room, of all 1950 calendars and diaries

General Summary

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to the various divisions based upon their requests during May of this year. Additional quantities were obtained to supply requirements of divisions which have experienced substantial changes since the original estimates were submitted.

The Nucleonics Department portion of the G-E Organization Directory was completed during the month of November. The final section submitted was that of the Design and Construction Divisions and reflects the recent changes made in that organization.

"You and General Electric at Hanford Works", a new handbook for Hanford Works employees, was received from the printer during the month of November. Preparations necessary for distributing them were completed during the month and the distribution was begun.

Hanford WORKS NEWS continued to publish numbers assigned to telephones being installed, and the last issue of the month contained a summary of all numbers assigned to newly installed telephones during the month.

Four issues of Hanford WORKS NEWS were published during the month, and the "Candid Camera" for the month of October was inserted in the November 4 issue. This change in insertion date is necessary because of the insertion on the last Friday of each month of the summary of telephone numbers.

Hanford WORKS NEWS continued to serve as a medium for reaching Hanford Works employees with information specifically designed for their attention. Examples were the announcement of area representatives authorized to issue Employee Sales Certificates, which results in an increase in the convenience to employees in obtaining these certificates. Another example was the appearance of the "Can You Tell Me?" column in which questions submitted by Hanford Works people concerning plant matters were answered.

Through the medium of the Women's Feature Writer in the News Bureau, an intensive campaign is being carried forward to encourage improved community relations through offering the WORKS NEWS as a medium for publicizing of activities of organizations in Richland. These include meeting notices, plans for future programs, and information concerning recreation activities offered through the various organizations in the town.

PURCHASING AND STORES DIVISIONS

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

	<u>Total Personnel</u> as of 10-31-49	<u>Total Personnel</u> as of 11-30-49	<u>Net Change</u>
Exempt	49	49	0
Non-Exempt	<u>268</u>	<u>262</u>	<u>Minus 6</u>
TOTALS	317	311	Minus 6

General Summary

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The work load of the Purchasing Division showed an increase over October: 1,638 purchase orders were placed as compared with 1,546; 2,638 purchase requisitions were received as compared with 2,482; and 687 requisitions were on hand at month's end as compared with 647.

A market survey was conducted relative to price and availability of operations materials to be used in the new Redox plant. All items required were found to be in plentiful supply with two exceptions, and we are proceeding to develop sources for these two items.

Considerable time and effort were expended working with the Reactor Division of the Design and Construction Divisions in developing costs and delivery time on materials which might be required by them for future construction.

Reduction of freight charges during the month of November amounted to \$2,531.44.

As a result of negotiations with the Transcontinental Truck Lines, a reduced rate was obtained on Nitrogen Gas which will result in annual savings of \$450.

Stores active inventories were reduced \$44,962.34. Stores activity increased approximately 40 percent over October.

Inventories of subcontractor-held materials were progressing on schedule. Ten catalogues covering this material have already been issued.

The subcontractor lumber inventory, MS-204, was taken over and manned by General Electric personnel.

Inventories of surplus materials in Pasco were completed and cataloging was progressing as scheduled.

The Stores Division began an inventory of all graphite stored in the 101 Building preparatory to assuming accountability and physical control of this raw material.

One hundred and ten representatives of Government agencies and private businesses were escorted through warehouses and scrap yards for the purpose of negotiating the sale of surplus property.

COMMUNITY DIVISIONS

Sales of basic items show no appreciable change for the month of November.

Five retail business firms began operation in Richland during the month.

Unfilled applications for housing were reduced from 231 to 189.

Dormitory W-20 was vacated and placed in "stand-by" condition.

General Summary

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Appropriations Request No. 69, Street Construction and Improvement, Jadwin Avenue and vicinity, and Appropriations Request No. 70, Richland Water Study, were approved by the Appropriations and Budget Committee; Project Proposals C-352 and C-353 were forwarded to the Committee.

MEDICAL DIVISIONS

The Medical Divisions' roll decreased by 11 from 382 to 371.

Doctors Smith, Moore, and Cantril, and Mr. McNary, consultants for the Medical Divisions, met in Richland November 11 and 12 and made the following recommendations:

1. That the professional practice of medicine and dentistry in the community be placed on a private basis.
2. That the present clinic building be approximately doubled in size.
3. That much smaller additions than those previously recommended for Kadlec Hospital be made. That all additions to Clinic and Hospital be kept within present appropriations for this purpose.
4. That reductions in Kadlec Hospital staff personnel, particularly nurses, be made in the immediate future.

The Medical Divisions' administrative staff is in agreement with these recommendations and visualizes great benefits accruing from the combined recommendations of its consultant group.

There was a continued decrease in hospital and out-patient revenue. While the total medical program is operating within the budget, the expense of the community medical section is exceeding the budget figure.

GENERAL ACCOUNTING DIVISION

Calculation of salary adjustments retroactive to April 11, 1949, resulting from the Union Agreement was completed and checks covering the adjustment were distributed to employees on November 18, 1949, approximately six weeks in advance of the original estimated delivery date. Payments were made to 4,576 active employees and 381 employees who have been removed from the payroll. The gross amount of the payment was \$227,638.22.

Permission to defer one week of their 1949 vacations until 1950 was granted by Division Managers during November to 21 weekly paid employees and 22 monthly employees. To date permission to defer one week of vacation has been granted to 51 weekly paid employees and 45 monthly employees.

In connection with mid-year reviews of budgets, reports covering budget estimates for General Division and Medical Division were distributed

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General Summary

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on November 25.

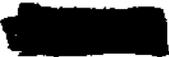
Credit policies and collection procedures in effect at Kadlec Hospital were reviewed and as a result some changes in procedures to insure more effective collections are to be made. Contacts were made with several collection agencies with respect to their assisting in collecting delinquent accounts.

Since the issuance of the June 30 Plant Accounting Statements in September, work has continued on these records and it is intended that another statement will be issued as of December 31 before the end of January.

Hanford Works and Nucleonics Department Financial Statements for the month of October were completed and distributed on November 21 and November 22, 1949, respectively. General Divisions Operating Reports covering October operating costs were completed on November 15, 1949.

Advances from AEC were reduced from \$3,500,000 at the beginning of the month to \$3,000,000 at the month end. Items comprising the balance in the advance account as of November 30 compared with those of October 31 are detailed below:

	<u>October 31</u>	<u>November 30</u>
Cash in Bank - Contract Accounts	\$ 2,667,073	\$ 2,416,198
Salary Accounts	55,000	55,000
Travel Advance Funds	50,000	50,000
Unliquidated portion of Advances prior to June 1, 1949	13,307	2,117
Advances to Subcontractors	300,180	300,000
Accounts Receivable - AEC	11,930	-0-
Cash in Transit	<u>402,510</u>	<u>176,635</u>
Total	<u>\$ 3,500,000</u>	<u>\$ 3,000,000</u>



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STAFF

General Manager G. R. Prout

Assistant General Manager R. S. Neblett

Assistant General Manager E. K. McCune

Assistant to the General Manager W. I. Patnode
(Technical and Education Matters)

Assistant to the General Manager J. R. Rue

Assistant to the General Manager and Manager of
the Plant Security and Services Divisions G. G. Lail

Department Comptroller F. E. Baker

Counsel L. F. Huck

Community Manager E. L. Richmond

Manager, Design and Construction Divisions F. R. Creedon

Manager, Manufacturing Divisions C. N. Gross

Manager, Technical Division A. B. Greninger

Manager, Health Instrument Division H. M. Parker

Manager, Medical Division W. D. Norwood, M. D.

Manager, Employee and Community Relations Division H. E. Callahan

Manager, Purchasing and Stores Divisions W. A. Jeffrey



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**FORCE REPORT
NOVEMBER - 1949**

	NON - EXEMPT		EXEMPT		TOTAL	
	<u>10-31-49</u>	<u>11-30-49</u>	<u>10-31-49</u>	<u>11-30-49</u>	<u>10-31-49</u>	<u>11-30-49</u>
<u>GENERAL</u>	20	19	14	13	34	32
<u>LAW</u>	3	2	3	3	6	5
<u>DESIGN & CONST. DIV'S.</u>						
Administrative	17	17	6	5	23	22
Construction	54	51	71	68	125	119
Const. Acct'g.	53	51	8	8	61	59
Design	127	129	128	129	255	258
No. Richland Realty	64	55	11	11	75	66
<u>MANUFACTURING DIV'S.</u>						
General	4	14	9	10	13	14
Proj. Eng'r. Control	15	16	15	18	30	34
Proj. Eng'r. Design	66	66	42	42	108	108
Proj. Eng'r. Minor Const.	204	177	22	25	226	202
Mfg. Accounting	44	44	8	8	52	52
<u>OPERATING DIV'S.</u>						
"P"	261	275	67	66	328	341
"S"	299	295	75	77	374	372
Power	455	456	81	81	536	537
<u>MECHANICAL DIV'S.</u>						
Maintenance	358	322	60	60	418	392
Electrical	259	257	48	46	307	303
Instrument	192	192	46	47	238	239
Transportation	569	556	58	58	627	614
<u>TECHNICAL DIV'S.</u>						
General	2	2	5	5	7	7
Pile Technology	25	22	52	56	77	78
Separations Technology	61	61	97	95	158	156
Metallurgy & Control	323	352	117	120	440	452
	294	287	86	84	380	371
<u>MEDICAL DIVISION</u>						
<u>H. I. DIVISIONS</u>						
General	2	3	6	6	8	9
Operational	139	149	54	53	193	202
Development	63	66	24	26	87	92
Biology	24	26	20	20	44	45
<u>ACCOUNTING DIVISIONS</u>						
Gen. Acct'g. Payroll	85	83	7	7	92	90
Gen. Acct'g. Acct'g.	78	77	13	13	91	90
Employee & Comm. Rel. Div.	54	52	27	27	81	79
<u>PLANT SECURITY & SERVICE DIV'S.</u>						
Patrol & Security	522	519	57	57	579	576
Safety & Fire	116	113	36	36	152	149
Gen. & Off. Services	191	184	21	21	212	205
<u>PURCHASING & STORES DIV'S.</u>						
Purchasing	35	35	28	27	63	62
Stores	233	230	28	28	261	258
<u>COMMUNITY DIVISIONS</u>						
	604	591	147	147	751	738
GRAND TOTAL	5915	5826	1597	1603	7512	7429

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PERSONNEL DISTRIBUTION - NOVEMBER 1949

	100-B	100-D	100-F	100-H	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	Total
<u>GENERAL</u>											
Clerical	-	-	-	-	-	-	-	-	-	13	13
Total	-	-	-	-	-	-	-	-	-	19	19
										32	32
<u>LAW DIVISION</u>											
Clerical	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	2	2
										5	5
<u>DESIGN & CONST. DIV'S.</u>											
<u>ADMINISTRATIVE</u>											
Supervisors	-	-	-	-	-	-	-	-	-	4	4
Engineers	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	16	16
Others	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	-	22	22
<u>CONSTRUCTION</u>											
Supervisors	-	-	-	-	-	-	-	-	-	-	-
Engineers & Inspectors	-	-	-	-	-	-	-	-	-	20	20
Clerical	-	-	-	-	-	-	-	-	-	37	37
Others	-	-	-	-	-	-	-	-	-	36	36
Total	-	-	-	-	-	-	-	-	-	26	26
										119	119

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	100-B	100-D	100-F	100-H	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	

DESIGN & CONST. DIV'S.

CONST. ACCT'G.

Supervisors 8
 Clerical 51
 Others 59
 Total 118

DESIGN

Supervisors & Estimators 13
 Clerical 116
 Others 59
 Total 258

NO. RICHLAND REALTY

Supervisors 8
 Engineers 3
 Clerical 10
 Others 45
 Total 66

MANUFACTURING DIVISIONS

GENERAL
 Supervisors 10
 Clerical 4
 Total 14

DECLASSIFIED

1225199

100-B Area 100-D Area 100-F Area 100-H Area 200-E Area 200-W Area 300 Area Plant General Area 3000 Area 700-1100 Area Total

MANUFACTURING DIVISIONS

PROJ. ENGR. CONTROL

Supervisors
Engineers
Clerical
Others
Total

-	-	-	-	-	-	1	-	-	8	9
-	-	1	-	-	-	1	-	-	7	9
-	-	-	-	-	-	-	-	-	11	11
-	-	-	-	-	-	-	-	-	5	5
-	-	1	-	-	-	2	-	-	31	34

PROJ. ENGR. DESIGN

Supervisors
Engineers
Draftsmen
Clerical
Others
Total

-	-	-	-	-	4	1	-	-	34	39
-	-	-	-	-	-	-	-	-	3	3
-	-	1	-	-	6	2	-	-	39	48
-	-	-	-	-	-	-	-	-	6	6
-	-	-	-	-	3	-	-	-	9	12
-	-	1	-	-	13	3	-	-	91	108

PROJ. ENGR. MINOR CONST.

Supervisors
Engineers
Clerical
Others
Total

-	-	-	-	-	-	-	-	-	22	22
-	-	-	-	-	-	-	-	-	3	3
-	-	-	-	-	-	-	-	-	13	13
-	-	-	-	-	-	-	-	-	164	164
-	-	-	-	-	-	-	-	-	202	202

MFG. ACCOUNTING

Supervisors
Clerical
Total

-	-	-	-	-	-	-	-	-	8	8
-	-	-	-	-	-	-	-	-	44	44
-	-	-	-	-	-	-	-	-	52	52

HW 15267

DECLASSIFIED

100-B 100-D 100-F 100-H 200-E 200-W 300 3000 700-1100
Area Area Area Area Area Area Area Area Area Total

OPERATING DIVISIONS

OPERATING DIVISIONS	100-B	100-D	100-F	100-H	200-E	200-W	300	3000	700-1100	Total
<u>Supervisors</u>	11	11	12	12	-	-	13	-	7	66
<u>Operators</u>	36	38	36	35	-	-	115	-	-	260
<u>Clerical</u>	2	2	2	2	-	-	4	-	3	15
<u>Total</u>	<u>49</u>	<u>51</u>	<u>50</u>	<u>49</u>	<u>-</u>	<u>-</u>	<u>132</u>	<u>-</u>	<u>10</u>	<u>341</u>

"S" DIV.

<u>Supervisors</u>	-	-	-	-	25	38	-	-	14	77
<u>Operators</u>	-	-	-	-	106	166	-	-	-	272
<u>Clerical</u>	-	-	-	-	6	12	-	-	5	23
<u>Total</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>137</u>	<u>216</u>	<u>-</u>	<u>-</u>	<u>19</u>	<u>372</u>

POWER

<u>Supervisors</u>	12	12	12	16	5	8	4	-	-	71
<u>Technical</u>	-	-	-	-	-	-	-	2	-	10
<u>Operators</u>	86	78	83	82	26	49	10	1	-	415
<u>Clerical</u>	1	1	1	1	-	1	-	5	-	10
<u>Others</u>	5	6	6	6	-	7	1	-	-	31
<u>Total</u>	<u>104</u>	<u>97</u>	<u>102</u>	<u>105</u>	<u>31</u>	<u>65</u>	<u>15</u>	<u>18</u>	<u>-</u>	<u>537</u>

MECHANICAL DIVISIONS

MECHANICAL DIVISIONS	2	5	9	8	5	14	5	-	2	50
<u>Supervisors</u>	2	5	9	8	5	14	5	-	-	50
<u>Engineers</u>	-	-	3	1	-	-	-	-	6	10
<u>Craftsman</u>	17	26	36	38	34	80	43	-	-	274
<u>Clerical</u>	-	-	3	2	2	2	2	-	1	12
<u>Others</u>	3	4	11	8	2	11	7	-	-	46
<u>Total</u>	<u>22</u>	<u>35</u>	<u>62</u>	<u>57</u>	<u>43</u>	<u>107</u>	<u>57</u>	<u>-</u>	<u>9</u>	<u>392</u>

MAINTENANCE

<u>Supervisors</u>	2	5	9	8	5	14	5	-	2	50
<u>Engineers</u>	-	-	3	1	-	-	-	-	6	10
<u>Craftsman</u>	17	26	36	38	34	80	43	-	-	274
<u>Clerical</u>	-	-	3	2	2	2	2	-	1	12
<u>Others</u>	3	4	11	8	2	11	7	-	-	46
<u>Total</u>	<u>22</u>	<u>35</u>	<u>62</u>	<u>57</u>	<u>43</u>	<u>107</u>	<u>57</u>	<u>-</u>	<u>9</u>	<u>392</u>

DECLASSIFIED

5.

1225201

	100-B	100-D	100-F	100-H	200-E	200-W	300	Plant	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	General	Area	

ELECTRICAL

Supervisors
Engineers
Craftsman
Clerical
Others
Total

Supervisors	1	2	2	3	1	5	2	2	23	41
Engineers	-	-	-	1	-	-	1	1	2	5
Craftsman	12	12	15	16	10	14	11	-	105	195
Clerical	1	-	1	1	-	1	1	2	25	32
Others	-	-	1	3	-	2	-	-	24	30
Total	14	14	19	24	11	22	15	5	179	303

INSTRUMENT

Supervisors
Engineers
Mechanics
Clerical
Others
Total

Supervisors	2	2	2	3	2	6	8	-	4	29
Engineers	1	1	-	-	-	2	10	-	4	18
Mechanics	-	-	-	-	-	-	17	-	-	17
Clerical	1	1	1	1	1	1	6	-	4	16
Others	12	13	13	15	14	33	47	-	12	159
Total	16	17	16	19	17	42	88	-	24	239

TRANSPORTATION

Supervisors
Engineers
Drivers (Based on areas serv'd.)
Journeyman
Trainmen
Servicemen
Clerical
Others
Total

Supervisors	2	1	2	1	1	1	1	18	26	53
Engineers	-	-	-	-	-	-	-	-	5	5
Drivers (Based on areas serv'd.)	2	3	4	2	3	4	4	161	38	221
Journeyman	8	3	3	3	1	5	-	-	69	92
Trainmen	-	-	-	-	-	-	-	24	-	24
Servicemen	3	1	7	2	5	5	6	11	24	64
Clerical	1	1	1	1	1	1	1	5	16	28
Others	5	6	6	6	3	7	3	53	38	127
Total	21	15	23	15	14	23	15	272	216	614

TECHNICAL DIVISIONS

TECHNICAL GENERAL
Supervisors
Clerical
Total

Supervisors	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	7	7

DECLASSIFIED

100-B Area 100-D Area 100-F Area 100-H Area 200-E Area 200-W Area 300 Area Plant General Area 700-1100 Area Total

TECHNICAL DIVISIONS

PILE TECHNOLOGY

Supervisors	1	-	-	1	-	-	-	-	10	-	-	-	-	12
Physicists.- Technologists-Chemists	5	7	1	3	-	-	-	-	29	-	-	1	-	46
Tech. Grads.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory Assistants	5	4	1	-	-	-	-	-	5	-	-	-	-	15
Clerical	-	-	-	1	-	-	-	-	3	-	-	-	-	4
Others	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Total	12	11	2	5	-	-	-	-	47	-	-	1	-	78

METALLURGY & CONTROL

Supervisors	1	1	-	1	5	13	-	-	31	-	-	6	-	58
Chemists-Engr's. & Metallurgists	5	-	-	-	-	2	-	-	54	-	-	1	-	62
Technologists & Tech. Grads.	1	1	1	2	8	28	-	-	30	-	-	-	-	71
Laboratory Assistants	1	-	-	5	25	57	-	-	70	-	-	35	-	158
Clerical	-	1	-	-	1	4	-	-	37	-	-	-	-	78
Others	2	-	-	-	-	-	-	-	23	-	-	-	-	25
Total	10	3	1	8	39	104	-	-	245	-	-	42	-	452

SEPARATIONS TECHNOLOGY

Supervisors	-	-	-	-	1	4	-	-	19	-	-	1	-	25
Chemists-Engr's.	-	-	-	-	5	11	-	-	51	-	-	-	-	67
Tech. Grads.	-	-	-	-	-	2	-	-	2	-	-	1	-	8
Clerical	-	-	-	-	-	2	-	-	9	-	-	1	-	12
Others	-	-	-	-	-	1	-	-	44	-	-	3	-	48
Total	-	-	-	-	6	20	-	-	125	-	-	5	-	156

DECLASSIFIED

	100-B	100-D	100-F	100-H	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	
Supervisors	-	-	-	-	-	-	-	-	-	39	39
Physicians	-	-	-	-	-	1	1	-	1	24	27
Dentists	-	-	-	-	-	-	-	-	1	8	9
Technicians	-	-	1	-	-	1	1	-	-	19	22
Nurses	1	4	4	1	4	5	2	-	2	77	100
Clerical	-	1	1	1	1	-	1	-	7	68	80
Others	-	-	-	-	-	-	-	-	1	93	94
Total	1	5	6	2	5	7	5	-	12	328	371

MEDICAL DIVISION
 Supervisors
 Physicians
 Dentists
 Technicians
 Nurses
 Clerical
 Others
 Total

1225203

H. I. DIVISIONS
GENERAL
 Supervisors
 Engineers
 Clerical
 Total



OPERATIONAL
 Supervisors
 Engineers
 Clerical
 Others
 Total

Supervisors	1	1	1	2	2	3	8	-	-	3	21
Engineers	4	3	4	3	5	11	2	-	-	-	32
Clerical	-	-	-	1	1	-	-	-	-	-	2
Others	9	14	10	12	21	38	35	8	-	-	147
Total	14	18	15	18	29	52	45	8	-	3	202

DEVELOPMENT
 Supervisors
 Engineers
 Clerical
 Others
 Total

Supervisors	-	-	-	-	1	4	5	-	-	-	10
Engineers	-	-	-	-	5	4	6	-	-	1	16
Clerical	-	-	-	-	1	1	2	-	-	-	4
Others	-	-	-	-	12	25	16	-	-	9	62
Total	-	-	-	-	19	34	29	-	-	10	92

DECLASSIFIED

100-B 100-D 100-F 100-H 200-E 200-W 300 Plant 3000 Y00-1100
Area Area Area Area Area Area General Area Area Total

H. I. DIVISIONS

BIOLOGY

Supervisors
 Engineers
 Clerical
 Others
 Total

-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
-	-	8	-	-	6	-	-	-	-	1	-	-	-	-	-	-	-	-	17
-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
-	-	17	-	-	6	-	-	-	-	1	-	-	-	-	-	-	-	-	24
-	-	27	-	-	13	-	-	-	-	3	-	-	-	-	-	-	-	-	46

ACCOUNTING DIVISIONS

GEN. ACCT'G. PAYROLLS

Supervisors
 Clerical
 Total

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90

GEN. ACCT'G ACCT'G.

Supervisors
 Clerical
 Total

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90

EMPLOYEE & C.M.M. RELATIONS

Supervisors
 Employee Rel. Counselor
 Clerical
 Others
 Total

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79

DECLASSIFIED

100-B 100-D 100-F 100-H 200-E 200-W 300 Plant 3000 700-1100
 Area Area Area Area Area Area Area General Area Area Total

PLANT SECURITY & SERVICE DIVISIONS
PATROL & SECURITY

Supervisors	5	6	6	5	5	9	7	10	4	57
Patrolmen	41	46	68	55	121	64	64	5	37	502
Clerical	-	-	-	-	-	-	-	13	2	15
Scamstress	-	-	-	-	-	-	-	2	-	2
Total	<u>46</u>	<u>52</u>	<u>74</u>	<u>60</u>	<u>130</u>	<u>71</u>	<u>71</u>	<u>30</u>	<u>43</u>	<u>576</u>

SAFETY & FIRE

Supervisors	9	-	-	-	4	4	4	10	4	31
Firemen	37	-	8	-	9	14	14	-	14	82
Safety Engineers	-	1	-	1	-	1	1	-	1	5
Inspectors	5	4	4	4	-	1	1	3	1	26
Clerical	-	1	-	1	-	-	-	-	2	5
Total	<u>51</u>	<u>6</u>	<u>12</u>	<u>6</u>	<u>13</u>	<u>20</u>	<u>20</u>	<u>13</u>	<u>22</u>	<u>149</u>

GENERAL & OFFICE SERVICES

Supervisors	-	-	1	-	1	2	-	1	16	21
Laundry Operators	-	-	-	-	-	34	-	-	10	44
Janitors & Servicemen	4	6	7	6	15	13	13	-	37	92
Clerical	-	-	-	-	-	-	-	-	17	17
Others	-	-	-	-	-	-	-	-	31	31
Total	<u>4</u>	<u>6</u>	<u>8</u>	<u>6</u>	<u>51</u>	<u>13</u>	<u>13</u>	<u>1</u>	<u>111</u>	<u>205</u>

PURCHASING AND STORES DIVISIONS

Supervisors	-	-	-	-	-	-	-	5	22	27
Clerical	-	-	-	-	-	-	-	-	35	35
Total	-	-	-	-	-	-	-	5	57	62

DECLASSIFIED

	100-B Area	100-D Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General Area	3000 Area	700-1100 Area	Total
Supervisors	6	-	1	-	-	1	5	-	-	17	28
Clerical	7	-	1	-	-	1	36	-	-	185	230
Total	13	-	1	-	-	1	41	-	-	202	258
Supervisors	-	-	-	-	-	-	-	-	23	124	147
Patrolmen	-	-	-	-	-	-	-	-	25	27	52
Firemen	-	-	-	-	-	-	-	-	41	56	97
Journeyman	-	-	-	-	-	-	-	-	-	182	182
Serviceemen	-	-	-	-	-	-	-	-	-	36	36
Truck Drivers	-	-	-	-	-	-	-	-	-	30	30
Power Operators	-	-	-	-	-	-	-	-	-	46	46
Clerical	-	-	-	-	-	-	-	-	-	88	88
Others	-	-	-	-	-	-	-	-	-	60	60
Total	-	-	-	-	-	-	-	-	89	649	738
GRAND TOTALS	377	330	420	374	432	913	971	352	286	2974	7429

PURCHASING & STORES DIVISIONS

STORES

Supervisors
Clerical
Total

COMMUNITY DIVISIONS

Supervisors
Patrolmen
Firemen
Journeyman
Serviceemen
Truck Drivers
Power Operators
Clerical
Others
Total

GRAND TOTALS

DECLASSIFIED

MANUFACTURING DIVISIONS

NOVEMBER 1949

DECLASSIFIED

SUMMARY

Production Divisions

A total of 67 tons of metal was discharged from B, D, and F piles at an average concentration of 392 MTD/ton. Approximately 13 tons of metal at an average concentration of 449 MTD/ton were discharged during the month. The operating efficiency was 89.6 percent exclusive of the H pile which had several shutdowns. The operating levels were 275 MW at B, F, and H piles and 305 MW at D pile at month end.

A total of 73 tons of acceptable slugs was canned at a yield of 92.7 percent. The machining yield of 74.8 percent represented a new high. The melt plant produced 19 tons of billets at a yield of 71.4 percent.

Sixty-three batches were started in the Canyon Buildings, with 63 batches being processed through the Concentration Buildings and 70 through the Isolation Building. The average purity of completed batches from Isolation was 98.4 percent.

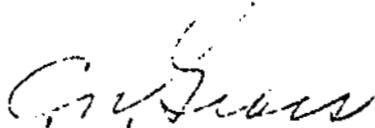
Mechanical Divisions

The balancing of the 234-5 ventilating system is completed.

A 63 percent increase of inbound cars over the past two months was due to heavy shipments of industrial coal.

A major power disturbance at 100-B on November 26, 1949 made it necessary to establish Critical Power Conditions (Grade "2"). One hour outage was required for switching. Replacement of burned poles and cross arms was necessary.

In an effort to decrease over-all electrical demand, procedures have been developed with the Power Division for maximum off-peak river pumping at the 100 Areas.


C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

DECLASSIFIED

MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF NOVEMBER, 1949

Richland, Washington
December 8, 1949

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

N O N E

C. N. Gross

C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

**DECLASSIFIED
WITH DELETIONS**

**DECLASSIFIED
WITH DELETIONS**

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**DECLASSIFIED
WITH DELETIONS**

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DECLASSIFIED

December 7, 1949

P DIVISION

NOVEMBER, 1949

I. GENERAL

The B and F Piles operated at 275 MW and D Pile at 305 MW throughout the month except for outages listed under Area Activities. The H Pile operating level was increased from 100 MW to 275 MW early in the month and maintained at the new level for the balance of the period. The "Time Operated" efficiency for the four piles was 92.2%.

A total of 67.39 tons of metal at an average concentration of 392 MWD/ton was discharged from the piles during the month.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - November, 1949	
Beginning of Month	332
End of Month	341
Net Increase	9

P. E. Lowe, Chief Supervisor at 100-F Area, transferred to the Design and Construction Divisions effective November 1, 1949.

W. P. McCue, Chief Supervisor at 100-H Area, assumed Mr. Lowe's duties at 100-F Area.

One operator terminated voluntarily from the 300 Area.

Ten operators were rehired and one operator transferred from the Maintenance Division to fill vacancies in the 300 Area.

DECLASSIFIEDIII. AREA ACTIVITIES

<u>FILE SUMMARY</u>	<u>FILE B</u>	<u>FILE D</u>	<u>FILE F</u>	<u>FILE H</u>
Time Operated (%)	89.4	92.2	91.4	95.6
Operating Efficiency (%)	87.8	90.7	90.4	86.9
*Power Level (MW)	275	305	275	275
*Inlet Water Temperature (°C)	10.0	10.5	10.0	10.5
*Outlet Water Temperature (Maximum °C., 10 tubes, C.240" Zone)	50.6	54.5	52.2	36.8
Number of Scrams	0	0	0	5
Number of Purges	1	0	1	1
Helium Consumption (cu. ft.)	14,078	33,538***	13,406	26,351**
Metal Discharged (tons)	23.01	20.82	23.44	.1
Inhours Gained (this month)	7	18	2	-50
*Inhours Poisoned	534	522	516	167
*Inhours in Rods	73	110	90	120

* Month end figures.

** CO₂ consumption.

*** Includes 15,000 cu. ft. for IR File.

FILE BUILDINGOutage Breakdown

<u>Date of Outage</u>	<u>Scheduled</u>		<u>Unscheduled</u>	<u>Length of Outage (Hours)</u>
	<u>Metal Discharged</u>	<u>Maintenance</u>		
11-1-49	B			27.2*
11-2-49	F			21.8
11-6-49		H(1)		8.5
11-8-49			H**	.2
11-9-49	D			24.0*
11-16-49	F	F		40.0*
11-20-49			H**	.3
11-22-49	B			29.3*
11-22-49		H		21.3
11-23-49			H****	.3
11-27-49			B*****	19.5
11-28-49			H**	.8
11-29-49	D			31.4*

* Includes outage to discharge temporary poison.

** Scram caused by unexplained surge on #2 Beckman.

*** Scram caused by unexplained surge on #1 Beckman.

**** Outage due to critical Y power condition caused by fire in #1 transformer bank at 190 Building.

(1) Unit scrambled due to unexplained surge on #1 Beckman. Work planned for outage scheduled for 11-8 completed while unit was down.

DECLASSIFIEDOperating Experience

Production tests having operational significance are reported below:

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

	<u>1.485"</u>	<u>1.490"</u>
4664-B		4559-B
4661-D		4588-B
4662-D		4683-B
4685-D		
4686-D		

- 105-103-P (Corrosion at Elevated Temperatures, Supplement A)
It was necessary to install a larger orifice on tube 0954-D during the month to reduce exit water temperature on this tube. At month end 32 tubes are operating at reduced water flow in accordance with the provisions of this test.

- 105-168-P (Replacement of Pile Atmosphere with CO₂)
During the month the CO₂ concentration at B Pile was increased from 60% to 80% and the concentration at D Pile was increased from 40% to 60%. F Pile atmosphere was maintained at 60%. No unexpected changes in operating conditions have been noted.

- 105-248-P (Reactivity Power Coefficients, Supplement A)
The H Pile was operated at reduced level for four hours on November 14 in accordance with the provisions of this test.

- 105-288-P (H Pile Graphite Sampling)
Tube 2577-H was discharged and left empty in accordance with the provisions of this test.

A total of 58.18 tons of Group V (alpha rolled, triple dipped, completely transformed) material was discharged during the month. Of this amount, 44.89 tons had an average concentration of 405 MWD/ton and 13.29 tons were discharged at an average concentration of 449 MWD/ton in accordance with the program of investigation of higher concentration levels.

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Tube 3396-B, which contained Group I material, required forces up to 1200 pounds for discharge. Subsequent inspection of the discharged material revealed one badly warped piece. Tube 3968-D, which contained Group V material, required forces up to 1000 pounds for discharge. Inspection of the material revealed one severely distorted and two moderately blistered pieces.

Segmental discharge of six tubes was attempted during the month. Two tubes were successfully processed at B Pile; the tape could not be inserted on two other tubes. Two tubes were successfully processed at 10C-D.

One process tube was replaced during the month in channel 3396-B.

Tubes Nos. 0454-B, 0493-B, 4354-B and 4393-B were removed from service preparatory to the installation of a quadrant monitoring system.

The operating level of the H Pile was increased from 100 MW to 275 MW over the period November 1 to November 3 in accordance with the H Pile activation plan.

Mechanical Experience

At month end all vertical and horizontal safety rods are in satisfactory operating condition. Work of an unusual nature performed on the rods during the month included the following:

1. Rods Nos. 28-F, 29-F, and 37-F were replaced with stainless steel rods and guides and the guide for 27-B rod was replaced with a stainless steel guide. A knuckle jointed rod and a shortened stainless steel rod guide were installed in location 38-F. This activity completes the program of rod and guide replacements except for No. 27-D.

The tie-in of the D-DR effluent line at the 1904 Building was completed during the month.

On November 27, high winds caused a failure of the normal lighting power circuit at 105-F Building. Although it was not necessary to shut down the pile, considerable difficulty was experienced because the emergency lighting circuit did not function properly. Corrective measures are planned during December.

The near and far side screens were examined on five crossheaders at H Area during the shutdowns of November 6th and 22nd. All screens were in good condition; a negligible amount of trash was found on some of the screens. Seven orifice screens examined on the same days were in good condition but also had evidence of trash on them.

P Division

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File Area Development

The tie-in of the necessary water lines to the pilot algae filter at 107-F was completed during the month. This work is now 90% complete.

Process Control Activities

The routine activities of the group continued throughout the period.

Gas Processing Building

Operations in these buildings were normal during the month.

Special Hazards

The intensity of the beam at the top far edge of the B Pile has increased to 2.5 r/hr. This rate of increase is considered normal. In addition, a beam (75 mr/hr) has been identified for the first time near the front corner of the top far edge.

The gamma intensity of the beam at the top far edge of the F Pile remained essentially unchanged during the month.

It was necessary to increase the shielding at the test and octant monitoring holes on the H Pile. It was also necessary to fill the inspection rooms around the effluent sewers with sand to eliminate radiation hazards at these locations.

300 AREA METAL FABRICATION

Production Statistics

Production for the month of November was as follows:

Billets Produced	19 Tons
Rods Machined	129 Tons
Bare Pieces Machined	97 Tons
Acceptable Pieces Canned	78 Tons

Melt Plant

The casting yields were as follows:

	<u>October</u>	<u>November</u>	<u>To Date</u> <u>1949</u>
Billet	78.1	71.4	68.9
Solid Metal	87.8	85.4	85.7

P Division

The billet yield was appreciably lower this month as a result of difficulty with proper seating and breakage of stopper rods. Eight billets were rejected for this reason when crucible charges had to be poured before reaching the required temperature. In addition seven billets were rejected because of poor surface quality. Emphasis has been placed on charging techniques and inspections to assure a tight seal between the stopper rod and crucible.

Machining

Machining yields were as follows:

<u>% Yield</u>		
<u>October</u>	<u>November</u>	<u>To Date 1949</u>
73.1	74.8	70.7

Improved rod quality and reduction in width of the cut off tool contributed to the higher yield. (See Development Section, below.)

Chip Recovery

The chip recovery yield was as follows:

<u>Yield</u>		
<u>October</u>	<u>November</u>	<u>To Date 1949</u>
90.1	89.9	90.5

The entire chip recovery process was operated five shifts, with the press being operated an additional fourteen shifts. All chips were pickled prior to briquetting and 44,120 pounds of TXB were produced.

Oxide Burning

The material burned was as follows:

<u>Weight Out - Pounds</u>		
<u>October</u>	<u>November</u>	<u>To Date 1949</u>
37,797	51,995	370,712

Oxide burning was continued on a one-shift five day week schedule.

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P Division

Oxide Stocks on Hand at Month End (Metal Content)

To be burned	918.6 lbs.
To be analyzed	20,537.1
To be shipped	<u>5,979.9</u>
TOTAL	27,435.6 lbs.

Canning Operation

The canning yield was as follows:

<u>October</u>	<u>November</u>	<u>To Date 1949</u>
88.5	92.7	91.1

Canning rejects, by cause, were:

	<u>Per Cent</u>		
	<u>October</u>	<u>November</u>	<u>To Date 1949</u>
Non Seating	1.8	1.9	1.1
Marred Surface	2.3	1.6	2.5
Al-Si on Outside of Can	0.3	0.5	1.0
Frost Test	1.6	1.7	2.0
Bad Welds	0.5	0.5	0.6
Miscellaneous	<u>5.0</u>	<u>1.1</u>	<u>1.7</u>
	11.5	7.3	8.9

Marred surface rejects were reduced appreciably through emphasis on careful handling of pieces. In addition, miscellaneous rejects were much lower as a result of no losses for high tin, which contributed largely to the low yield experienced in October.

An analysis for tin was run on the bonding layer of pieces taken at random from the 984 pieces rejected on October 5 because the tin content of the canning bath reached 0.65%. The amount of tin ranged from 30.0 to 54.0 milligrams as compared with 3.5 to 11.6 milligrams in the bonding layer of standard canned pieces. Since the tin content was excessive, the pieces have been transferred to recovery for stripping. The 492 pieces rejected on October 7, when the canning bath reached 0.25% tin, are being held for pile loading under a production test. Acceptance of these pieces increases the canning yield for October to 89.6 and yield to date to 91.1.

Considerable work was done during the month in developing a satisfactory means of dipping four slugs in the bronze bath to permit lengthening the dip time. Initial production runs, dipping four slugs and double cycling in the bronze bath, were started on one canning line November 25 and continued through November 29.

P Division

On November 30 the canning cycle on both canning lines was converted from This was done to increase the previous nominal production rate of acceptable canned slugs from 70 tons to 85 tons per month. A minimum dip time of is being maintained in the bronze baths, with no change in temperature.

The following special request pieces were canned:

<u>Request No.</u>	<u>Content</u>	<u>No. of Pieces.</u>
ORNL-10-108	Uranium	30
P-10-A	Lithium Aluminum Alloy	414

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In addition 458 bismuth slugs were canned.

Slug Recovery

	<u>% Recovered</u>		<u>Average Wt.-Lbs.</u>	
	<u>November</u>	<u>To Date 1949</u>	<u>November</u>	<u>To Date 1949</u>
Z Slugs	86.1	88.5	3.910	3.912
X Slugs	12.3	9.6	3.863	3.859
Rejects	1.6	1.9	---	---
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

	<u>October</u>	<u>November</u>	<u>To Date 1949</u>
	0.05/M	.04/M	.06/M

There were two autoclave failures in November. Both pieces were completely destroyed.

No penetration was found within 0.010" of the outer can wall on any of the canned slugs tested for penetration during the month. Two pieces were penetrated at 0.015".

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

	<u>% Usable</u>		
	<u>October</u>	<u>November</u>	<u>To Date 1949</u>
Aluminum Cans	92.0	89.0	93.7
Aluminum Caps	99.1	99.1	94.7
Steel Sleeves	99.2	*	88.0

*No new sleeves were inspected.

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Material Handling

A total of 170.5 tons of alpha rolled rods was received from Simonds Saw and Steel Company. Seventeen tons, net weight, of oxide (MD-6, CRD-6 & C-6) were shipped to Mallinckrodt Chemical works.

305 Test Pile

The test pile was operated on a one shift five-day week schedule. Thirty-nine tests were run on canned slugs, 53 on billet eggs, 515 on graphite bars, and the following on special work requests:

<u>Request No.</u>		<u>No. of Tests</u>
112	To measure the absorption cross section of a thermocouple.	8
113	To test P-10-A pieces for pile loading.	25

The graphite testing program was completed on November 25, 1949.

Special Hazards

No unusual conditions developed during the month.

Development

The evaluation of cut-off tools having a width of less than the standard 5/16" tool on the Gisholt turret lathes was completed. A tool having a width of 3/16" was found satisfactory and tool mortality was comparable to the 5/16" tool. On November 4, the 3/16" tool was accepted for normal process use. Results to date indicate that turning scrap has been reduced about 2%. Based on a 90 ton production rate of machined slugs, an estimated annual savings of about \$75,000 will be realized from this change. Approximately \$5,000 will be saved in material and labor used in the 300 Area fabrication processes and about \$70,000 in recycling scrap off plant.

To determine the feasibility of reducing airborne contamination during rod straightening, test runs were made on rods that had been coated with a 50% solution of calol. Results of initial tests were favorable. Air samples have ranged from 5 to 50 times tolerance during normal straightening and averaged about 2 times tolerance for oil treated rods. Additional tests are planned.

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December 8, 1949

S DIVISION

NOVEMBER, 1949

OPERATING SECTION

I. GENERAL

Sixty-three batches were started in the Canyon Buildings, sixty-three batches were processed through the Concentration Buildings and seventy batches were completed through the Isolation Building. The average purity for completed batches was 98.4 percent.

Canyon and Concentration Building Production Performance Data -
(11-1-49 - 11-30-49, inclusive)

	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Number of charges started	30	33	63
Number of charges completed	31	39	70
<u>For completed charges:</u>			
Percentage of starting product in waste:			
This month	2.7(a)	2.7(a)	2.7
Last month	2.7(b)	2.7(b)	2.7
Cumulative to date	4.3(c)	4.1(c)	4.2
Percentage of starting product recovered:			
This month	96.6	96.8	96.7
Last month	95.4	100.2	97.5
Cumulative to date	97.3	95.6	96.5
Percentage of starting product accounted for:			
This month	99.3	99.5	99.4
Last month	98.1	102.9	100.2
Cumulative to date	101.6	99.7	100.7
Gamma decontamination factor (Log.)			
This month	7.45	7.48	7.46
Last month	7.50	7.52	7.51
Cumulative to date	7.36	7.35	7.35

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(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.010%-T Plant; 0.006%-B Plant. (b) 0.014%-T Plant; 0.013%-B Plant. (c) 0.098%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (11-1-49 to 11-30-49, inclusive)

	% of Incoming Product			
	Prepared for Shipment	Recycle	Waste	Retained Material Samples Balance
Average for this month	96.3	4.01	-0.028	0.036 100.3
Average for last month	95.4	4.53	-0.034	0.035 99.9
Average to date	95.8	4.66	0.06	0.02 100.5

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	374
End of month	374
Net change	None

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

- 1 transfer from another Division (weekly roll)
- 1 transfer from another Division (monthly roll)
- 2 promotions from weekly to monthly roll
- 2 terminations (weekly roll)

A. R. Deas was transferred from the H. I. Divisions as a Supervisor-in-Training, effective November 28, 1949.

H. L. Short and T. B. Griffith, Chief Operators on the weekly roll, were transferred to the monthly roll as Supervisors-in-Training, effective November 1, 1949.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants and 231 Building

Extraction Waste Losses

There were no increases in extraction waste losses during the month which could be correlated directly with increase in the average MWD/ton level of metal processed. The average results obtained are tabulated below:

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	<u>T PLANT</u>		<u>B PLANT</u>	
	<u>November</u>	<u>October</u>	<u>November</u>	<u>October</u>
Original analysis	1.18	1.06	1.02	0.99
Throw-away loss	0.74	0.69	0.71	0.77
Average MFD	358	378	375	333

Acid Wash Runs - T and B Plants

Prior to switching the B Plant Canyon process to semi-parallel flow late in the month, a normal acid wash was processed through the equipment to remove product held in process tank heels. This run picked up 35.5 percent of a normal run from the Canyon Building process equipment and 7.2 percent from the Concentration Building equipment for a combined recovery of 42.7 percent. The run was sent to the Isolation Building for further processing there.

Immediately following the processing of the first acid wash run and the installation of piping for paralleling the first decontamination cycle operation, a second acid wash was routed through Sections 8, 12, 16, 18 and 19. This run picked up 3.3 percent of a normal run from the Canyon equipment. At month end the second acid wash was still in process in the Concentration Building.

A regularly scheduled acid wash for clean-out of product heels in process tanks was processed through the T Plant Canyon and Concentration Buildings' process equipment. The pick-up of product was low; 15.9 percent from the Canyon Building and 2.8 percent from the Concentration Building for a combined recovery of 18.7 percent. This run was returned to the Concentration Building process as re-cycle. Prior to processing of the acid wash through the Concentration Building, a special pre-flush of the B Cell lanthanum fluoride product centrifuge, the B Cell metathesis tank and F Cell equipment was made, recovering 15.7 percent of a standard charge. This material was recycled to the Concentration Building process.

Semi-Parallel Operation Canyon Process - B Plant

Sections 18 and 19 were activated during the month in B Plant to permit semi-parallel operation of the Canyon equipment for decreased over-all time cycles. The first run having the second decontamination cycle performed in Sections 18 and 19 was B-911-F-17. The lines of flow in the B Plant Canyon are now identical to those shown for the T Plant Canyon in last month's report.

Reduced Metathesis Volumes - T Plant (Production Test 224-T-13)

In order to reduce the Concentration Buildings' F Cell time cycles from the present average of 14 hours per process run toward the ideal of 12 hours, there was initiated during the month in T Plant a study, under a production test, of possible reductions in the metathesis step volumes. The first phase of the study was completed successfully, indicating that a predicted reduction of 40 minutes

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in time cycle for this phase of the test can be realized. In this phase ten runs were processed at 80 percent of the present standard volume in metathesis by reducing the amount of caustic solution used for metathesis. In addition, to keep metathesis slurry caustic concentrations standard, 25 percent of the metathesis wash effluent from the preceding run was diverted for rework from the metathesis slurry to the metathesis centrifugation effluent. In all of the test runs no process difficulties were encountered and waste losses were normal. Succeeding steps in this production test will be directed toward increasing the caustic concentration at which the metathesis centrifugation is performed for a resultant decrease in the first centrifugation volume and shorter first centrifugation time cycles.

Lanthanum Fluoride By-Product Cake Rework Effluent - T & B Plants

In order to effect a time cycle reduction in the lanthanum fluoride by-product step in the Concentration Buildings, the product effluents from the D Cell centrifuge, which eventually go to B Cell for lanthanum fluoride product precipitation, are now being held in the D Cell centrifuge catch tank until one-half of the by-product cake rework effluent has been centrifuged and added to the product solution. This method permits centrifugation of the D Cell rework cake to proceed during a period when a previous run is completing the long lanthanum fluoride product cycle in B Cell. Previous process methods called for transferring the product carrying effluent to B Cell before starting of the by-product effluent rework centrifugation in D Cell. This coordination of D and B Cell operations results in a reduction of over-all time cycles in D Cell by approximately four hours. The second half of the effluent from the by-product cake rework is held in the D Cell centrifuge catch tank as in the past to be picked up by the following run which in turn is processed through E Cell for the lanthanum fluoride product step.

Concentration Building Bismuth Phosphate By-Product Losses-T & B Plants

Preliminary experiments with controlled rates of addition of phosphoric acid for the strike in the bismuth phosphate by-product step in the Concentration Buildings indicate that it may be possible to reduce waste losses there to less than 0.10 percent per run (0.14 current average) without affecting adversely the decontamination factors. Phosphoric additions during by-product precipitations have always been performed as rapidly as possible, since early studies during development of the Separations and Concentration processes indicated that better decontamination is effected by the rapid strike. Further investigation of the controlled strike is currently in progress.

WASTE DISPOSAL

Second Decontamination Cycle Waste Supernatant Cribbing - T Plant

In order to provide additional space for storage and settling of second decontamination cycle wastes in the X-110-T series of tanks in the 241-T Area, cribbing of supernatant from the X-112-T (final tank in 110-T series) was resumed on November 18, in

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accordance with the general agreement that was reached in a joint meeting held on October 27, 1949, with representatives of the United States Geological Survey, Atomic Energy Commission and the Company, the minutes of which are covered in Document HW-14991, issued November 7, 1949. Cribbing of 215,000 gallons of supernatant was completed during the month. A total of 2,598,000 gallons of this type waste has been cribbed in the 200 West Area since cribbing of second cycle supernatants was first initiated.

Concentration Building Waste Disposal Cribs - B Plant

During the month drainage rates from the cribs handling B Plant Concentration Building wastes decreased from fifteen hours for a normal waste to twelve hours.

Waste Status

The status of the Waste Storage Areas as of November 30, 1949, is shown in the following table:

B Plant

Bldg. 241 Tanks	Waste	Percentage Full			Reserve Capacity in Batches to Process			
		B	C	BX	B	C	BX	Total
x101,2,3	Metal	100	100	100	0	0	0	0
x104,5,6	Metal	-	100	67.5	-	0	49	49
x105,6	Metal	-	-	-	-	-	-	-
x201,2,3,4	Metal	0	100	-	-	0	-	0
x107,8,9	Metal	-	-	-	-	-	-	-
x101,2,3,4	Metal	-	-	-	-	-	-	-
x107,8,9	1st Cycle	100	100	-	0	0	-	0
x110,11,12	1st Cycle	-	100	-	-	0	-	0
x104,5,6	1st Cycle	-	-	-	-	-	-	-
x109,10,11,12	1st Cycle	-	-	-	-	-	-	-
x115,118	1st Cycle	-	-	-	-	-	-	-
x107,8	1st Cycle	-	-	100	-	-	0	0
x110,11	1st Cycle	-	-	27.9	-	-	212	212
x104,5,6	2nd Cycle	67.5	-	-	207	-	-	207
x110,11,12	2nd Cycle	100	-	-	0	-	-	0
x110,11	2nd Cycle	-	-	-	-	-	-	-
x113,14,16,17	2nd Cycle	-	-	-	-	-	-	-
x112	2nd Cycle	-	-	0	-	-	212	212

BX 109 No Allocation

T Plant

Bldg. 241 Tanks	Waste	Percentage Full			Reserve Capacity in Batches to Process			
		T	U	TX	T	U	TX	Total
x101,2,3	Metal	100	100	-	0	0	-	0
x104,5,6	Metal	-	100	-	-	0	-	0
x105,6	Metal	-	-	0	-	-	353	353
x201,2,3,4	Metal	0	0	-	-	51	-	51
x107,8,9	Metal	-	100	-	-	0	-	0
x107,8	Metal	-	-	0	-	-	353	353
x101,2,3,4	Metal	-	-	17.9	-	-	592	592
x107,8,9	1st Cycle	100	-	-	0	-	-	0
x110,11,12	1st Cycle	-	100	-	-	0	-	0
x104,5,6	1st Cycle	100	-	-	0	-	-	0
x109,10,11,12	1st Cycle	-	-	34.7	-	-	548	548
x115,118	1st Cycle	-	-	0	-	-	410	410
x107,08	1st Cycle	-	-	-	-	-	-	-
x110,11	1st Cycle	-	-	-	-	-	-	-
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	82.6	-	-	102	-	-	102
x110,11	2nd Cycle	-	-	-	-	-	-	-
x113,14,16,17	2nd Cycle	-	-	0	-	-	1123	1123
x112	2nd Cycle	-	-	-	-	-	-	-

MECHANICAL PERFORMANCE

Equipment Failures - T and B Plants

The following process equipment failures occurred during the month:

- a) Gaskets were replaced in three connector assemblies in Sections 18 and 19 of T Plant when leaks developed.
- b) A leak developed at a weld in the cell wall nozzle (piping through concrete, nozzle #78) of the manometer line for the Section 8 centrifuge in T Plant. Since radiation levels in this cell preclude the possibility of making repairs, this connector was abandoned and the manometer system rerouted through a spare pipe through concrete. This is the first failure of a cell wall nozzle in T Plant.
- c) The Phillie gear reduction assembly for the 18-4 cake solution tank agitator in B Plant failed shortly after Section 18 was activated and was replaced. The agitator is part of the original equipment installation for this cell and had been operated two hours each week during standard idle equipment runs. Since radiation levels involved are expected to be low, repairs to the gear reducer will be attempted.
- d) The distributor in the lanthanum fluoride product precipitator in E Cell of T Plant Concentration Building fractured near the

S Division

spray slot (probably due to embrittlement of the metal by HF solutions used in the E Cell process) and was replaced.

Recycle Unloading System - T Plant

Because of chronic difficulty from plugging of the 3 gpm jet used for unloading of recycle cans from the Isolation Building at the T Plant Concentration Building, the recycle unloading system was revamped to conform to the installation at the B Plant Concentration Building. This change consisted of relocating the jet from the F-10 enclosure unloading station to the E-4 recycle storage tank and substituting a 10 gpm jet for the 3 gpm jet formerly used. Operation of the jet is now controlled from E Cell panel board rather than at the F-10 enclosure.

Hydrostatic Testing and Repairs of HF Storage Tanks - B Plant

The SY-181 HF storage tank in the 211-B Chemical Tank Farm and the E-1Y HF storage tank in the 224-B Concentration Building were both emptied during the month and hydrostatically tested at 100 psi and found satisfactory. All valves on each tank were replaced with Teflon trimmed Chapman valves. Similar repairs to the SY-182 storage tank in the 211-B Area will be performed at a later date.

IV. EXPANSION AND CONTROL SECTION

Redox and Metal Recovery

Work was continued during the month in cooperation with the Design and Technical Divisions on the design of the Redox Main Plant project. One member of the group was assigned on a temporary basis to the Survey Committee which is currently evaluating the various metal recovery processes.

During the month the Contact Engineer's Group reviewed and offered comment on the layout of the service lines in the Redox Area, and on the engineering flow sketches for the 211-S Chemical Storage Tank Farm. Engineering flow sketches are now being prepared on the process for conversion of UHF to UO_2 , in batch and continuous process variations of the UO_2 process in use by Mallinckrodt.

The market survey for the establishment of procurement of aluminum nitrate continues. J. T. Baker Company personnel visited the Plant during the month for discussion of this problem, and bids from other vendors are being received. Data are being gathered for a cost comparison on shipment of crystalline material versus a 72 percent solution of this essential material.

The Manufacturing Divisions have recommended the use of stainless steel flooring, in those cells handling solvent, as a protection to the concrete, and the use, in the remaining process sections, of Amercoat paint. A coating of flame-sprayed polyethylene, which

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has been under development as a protective coating for Redox process buildings, was decided against because of high cost and a comparatively undeveloped technique of application, resulting in pin-holes in the coating.

Consideration is being given to relocation of the stack to a position north and east of 202-S Building. The necessity for relocation results from a recommendation by the Meteorological Consultant for the H. I. Division that the present height of 200 feet be increased to 400 feet, if the stack is to remain in its present location, or that the stack be relocated. It is feared that, with the silo portion of the 202-S Building in a general down-wind position from the stack, ground-looping of the stack discharge would result from the turbulence set up by the silo.

Engineering flow sketches on the waste disposal portion of the 222-S Laboratory Building have been approved. The laboratory will have a small waste neutralization and transfer building in the area between 202-S and 222-S. In addition, the 222-S waste disposal system will include an independent retention basin and independent cribs for low-level wastes. Wastes of higher activity level will be accumulated in the above waste neutralization building, neutralized by Technical Division personnel, and then transferred, by a procedure yet to be worked out with S Division, to the 241-S Tank Farm.

Rala

During the month the Contact Engineer's group reviewed and offered comment on the first issue of Process Flow Diagrams, and Material Balance Flow Sheets.

Decision has been reached to use a Neutsch type filter for separation of solids in the purification step. Centrifugation and decantation were also under consideration, but since a Neutsch filter presents the least development work requirement, and is currently in use for this function at Oak Ridge, its selection was considered desirable.

A corrosion study indicates that 25-12 SCb stainless steel will be satisfactory for the relatively high concentration of sulfuric acid in the extraction step.

The Design Division is currently studying G. E. and C. L.'s proposed design for the electrolytic cell. A quotation on the cost of design and fabrication of this equipment is expected from G. E. and C. L. in December.

The Technical Divisions are currently studying analytical techniques, laboratory layouts, and requirements for the "caves" proposed for manipulation of radioactive samples and solutions. They are also evaluating a proposed design of scrubbers for removal of iodine from the dissolver off-gas.

234-5 Building - Phases II and III

Reported under separate cover in Document HW-15332.

PROCESS CONTROL

241-BY Tank Farm - Project C-271

As previously reported, the sub-contractor's phase of this work has been completed. In the General Electric phase only minor work is incomplete. Physical completion of all work is expected during the coming period.

Pipe Creeping Through Concrete - Canyon Buildings

A further attempt to return the No. 54 steam pipe in Section 16 in the 221-B Canyon to its normal or original position at the pipe gallery wall through the use of a hydraulic jack and expanded CO₂ gas was made. Although the pipe was returned to its original position with the flange six inches from the pipe gallery wall, there was no movement of the pipe on the cell side where the connector flange remains about one inch further in the cell than the adjacent flanges. It is therefore evident that the pipe was stretched rather than being pulled free in the concrete. The method is not recommended for further application.

Metal Waste Samples

Two 100 gallon samples of metal waste supernate were obtained from the 103-U tank for shipment to Site K-25. Preparation was being made, at month end, for the taking of a 400 pound metal waste sludge sample for use at Oak Ridge in the development of the trybutyl phosphate process for metal recovery.

First Cycle Neutralized Waste Sample

A 500 ml sample of first cycle neutralized waste was shipped to an off-plant site in a special container fabricated here. Maximum exposure to personnel during the sampling was 1750 mrep per hour.

First Cycle Waste Evaporation Project Proposal

The Project Engineering Divisions' Design Division is preparing a project proposal for the installation of one 500 gallon per hour first cycle waste evaporator in the 200 West Area. It is expected that the estimated cost of this evaporator will be of the order of \$250,000 to \$300,000. The estimated yearly savings that will be realized are in the order of magnitude of \$1,000,000.

Dissolver Off-Gas Filters

A revised project proposal has been submitted to the A and B Committee for the installation of one dissolver off-gas filter using


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AA Fiberglas in one dissolver cell in each of the T and B Plants. During the month the Technical Divisions reported the finding of the formation of ammonium nitrate salt in experimental off-gas filters. This presents a serious problem since the formation of the salt presents a plugging problem and possibly an explosion hazard. There are several possible solutions and an immediate effort will be made to determine the best one.

[REDACTED]

POWER DIVISION
NOVEMBER 1949

GENERAL

An inspection of steam line poles was completed in all areas to determine the effectiveness of previous treatment to retard underground decay. A small percentage of these poles will need to be replaced, or stubbed in the near future.

During the last three days of the month, the raw water turbidity increased from 3 ppm to 45 ppm. As a result, coagulant feeds were progressively increased from approximately 7 ppm to 35 ppm.

PERSONNEL AND ORGANIZATION

No. of employees on payroll November	
Beginning of month	537
End of month	<u>538</u>
Net Increase	1

The indicated net increase was the result of the transfer into the Division of two men and the termination of one employee.

OPERATIONAL EXPERIENCE

100 AREAS

In the 100 B Area, on November 27, the area fence lighting circuit was out of service from 2:30 a.m. to 5:12 a.m. on account of a broken line caused by high wind.

The dismantling of water and steam lines to the 185 Building de-aerators was accomplished in the 100 B and 100 D Areas during the month. This completes the preliminary phase of the deaerator dismantling in the B, D, and F Areas.

In the 100 F Area, on November 10, the fire and sanitary line to Patrol Headquarters was out of service for seven hours for the purpose of making permanent 4-inch and 6-inch connections for the new facilities in the 108 Chemical Mix Building.

In the 100 F Area, the 15 million gallon emergency section of the 182 reservoir was out of service on November 16 and 17 for internal inspection and painting exposed metal surfaces. Also, in the 100 F Area, on November 27, the area emergency electric feeder was out of service for a two minute period when the circuit breaker opened at 4:45 p.m.

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Power Division

Items listed as unfinished in the 100 H Area at the end of October which have now been completed, include efficiency tests on the boilers, calibration of steam and water flow meters and coal scales, and completion of a new 2-inch fire and sanitary water line to the No. 1 Inlet House to 182 reservoir. A new 14-inch flow control valve was installed on the inlet line to the No. 1 process water storage tank in the 190 Process Pump House on November 10, replacing the 30-inch valve which had performed unsatisfactorily. Excessive vibration in the line after the new valve was placed in service resulted in its being taken out of service after a trial period. Relocation of this valve is now planned in an attempt to eliminate the vibration.

200 AREAS

At the 234-5 Building on November 3, the faulty operation of an electrical interlock caused the No. 2 transformer circuit breaker to open and resulted in the loss of two exhaust fans. Service was restored by transferring all the load to the No. 1 transformer. This was a recurrence of a similar failure which occurred on October 30. Only minor disturbances of ventilation control resulted from this trouble.

The detailed balancing of Phase I, Ventilation System in the 234-5 Building was completed on November 24, with the exception of gravity dampers for the Analytical Laboratory. Balancing of these dampers require work stoppage in the laboratory and will be scheduled on days when no work is in progress.

In the West Area, at 11:15 p.m. on November 21, a break occurred in the 6-inch sanitary water main serving the 222 U Building. Temporary water service was provided at 11:30 p.m. until permanent repairs were completed on November 23.

In the East Area, 284 Boiler House, an inspection of the emergency turbo-generator unit was made on November 3 to determine the cause of excessive vibration. The turbine spindle was found to be bent and replacement will be necessary. The unit can be operated on an emergency basis until repairs are made.

The new sewage disposal tile field, serving the "B" plant in the East Area was completed on November 3.

300 AREA

On November 3, steam, compressed air and water connections were completed on the new 3705 Building.

Painting and covering the outer walls of the 3707-B Building with asbestos shingles was completed on November 15. This building will be used as a permanent Power Division office and change house.

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Power Division

101 AREA

On November 3, an electrical interruption occurred at 5:25 p.m. which resulted in a loss of ventilation service to the 101 Shops from 5:25 p.m. to 6:25 p.m.

Controls for manual operation of the No. 7 well pump were completed on November 11 with high and low water tank level indicating lights replacing the automatic control equipment.

WHITE BLUFFS

Three electrical power interruptions occurred at White Bluffs on November 3 from 1:37 p.m. to 1:42 p.m., from 5:25 p.m. to 5:30 p.m. and a momentary outage at 2:54 p.m.

Ice in storage at the end of the month was 865,100 pounds.

POWER ENGINEERING SECTION

Studies were completed on the reduction of process water pumping head at the 183 Pump Room, and the collection of data relative to the feasibility of conversion from coal to oil in the power houses.

The Equipment Location Manual revision was completed and work started on the revision of the Power Division Standard Operating Manual.

Cost and budget work included the completion of a report summarizing savings since September 1946, preparation of a monthly cost forecast and monthly cost review, completion of a revised budget for mid-year budget review, and assistance in the preparation of new project proposals and revision of old proposals.

Water development activities were concerned with stabilizing water treatment in the 100 H Area and investigating water treatment disturbances which occurred.

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POWER DIVISION STATISTICS

From November 1, 1949

Through November 30, 1949

A R E A S

<u>RIVER PUMP HOUSE (Building 181)</u>			100-B	100-D	100-F	100-H
		(max)	387.9	379.7	366.4	371.7
River state	Feet above sea level	(min)	385.1	377.7	364.2	369.5
		(avg)	386.0	378.6	365.0	370.4
River temperature	avg. °F.		50.9	52.8	53.8	53.6
Water to Reservoir	gpm avg. rate		38471	41881	36483	50295
 <u>RESERVOIR (Building 182)</u>						
Water to Filter Plant	gpm avg. rate		32687	36742	32420	45490
Water to Condenser System	gpm avg. rate		4150	3241	3396	4805
Water to Export System	gpm avg. rate		1634	1898	667	0
	gpm nor. rate		4199	4199	4199	0
Chlorine added #1 inlet	pounds		8001	19450	4000	5000
 <u>FILTER PLANT (Building 183)</u>						
Filtered water Power House	gpm avg. rate		236	274	277	222
Filtered water to Process	gpm avg. rate		30679	31831	30878	40105
Filtered water to Const.	gpm avg. rate		-	-	-	-
Filtered water to DR Process	gpm avg. rate		-	-	-	-
Filtered water Fire & San.	gpm avg. rate		105	194	157	130
Chlorine for Water Treatment	pounds		2421	1707	7000	9000
	ppm avg.		.78	1.41	.90	.83
Lime for Water Treatment	pounds		24500	27747	30450	59000
	ppm avg.		2.1	2.1	2.6	3.6
Coagulant Water Treatment	pounds		79423	92134	90360	200000
	ppm avg.		6.7	6.9	7.7	12.2
Raw Water pH	pH avg.		7.94	7.95	8.1	8.0
Finished Water pH	pH Avg.		7.73	7.77	7.70	7.70
Alkalinity, M.O. - Raw	ppm avg.		63	61	58	56
	Finished	ppm avg.	58	57	56	52
Residual Chl. - Settled	ppm avg.		.28	.25	.23	.28
	Finished	ppm avg.	.14	.12	.13	.13
Iron - Raw	ppm avg.		.11	.07	.10	.12
North Clearwell	ppm avg.		.01	.01	.02	.01
South Clearwell	ppm avg.		.01	.01	.02	.01
Hardness - Finished	ppm avg.		73	69	62	64
Turbidity - Raw	ppm avg.		3.9	4.1	5.0	5.0
Filtered	ppm avg.		0	0	0	0

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Power Division

From November 1, 1949

Through November 30, 1949

		100-B	100-D	100-F	100-H
<u>POWER HOUSE (Building 184)</u>					
Maximum steam generated	lbs./hr.	152,000	155000	140000	148800
Steam generated - Total	M pounds	88790	96594	91022	86687
	Avg. rate lbs./hr.	123319	134158	126419	120399
225 psi Steam plant (est.)	M pounds	74490	81109	76383	72706
15 psi Steam plant (est.)	M pounds	804	804	804	804
Coal consumed	Tons	6626	7209	6792	6569
Coal in storage (est.)	Tons	26021	28192	24846	23795

DEAERATOR PLANT (Building 185)
AND 190-E TANK ROOM

Water flow	gpm avg. rate	30429	31581	30628	39855
Chemicals consumed:					
Dichromate	pounds	22400	22400	23600	32000
Sodium Silicate	pounds	0	0	0	0
Chemical Analysis:					
pH	pH avg.	7.64	7.67	7.70	7.62
Dichromate	ppm avg.	1.8	1.9	1.8	2.0
Silica	ppm avg.	-	-	-	-
Dissolved Iron	ppm avg.	.01	.02	.01	-
Free Chlorine	ppm avg.	.09	.14	.14	-

PROCESS PUMP ROOM (Building 190)

Total water pumped	gpm avg. rate	30254	31406	30453	39680
	gpm nor. rate	31944	32743	31650	40600
Water temperature	avg. °F.	54.6	55.3	56.3	55.0

VALVE PIT (Building 105)

Chemicals consumed:							
Solids	pounds	650	0	3250	2250		
Chemical analysis:							
A, B, C, & D Headers							
<u>Standard limits</u>							
pH	7.5 - 7.8	pH	(max)	7.70	7.70	7.70	7.70
			(min)	7.60	7.65	7.65	7.50
			(avg)	7.65	7.66	7.65	7.60
S ₁ O ₂		ppm	(max)	-	-	-	-
			(min)	-	-	-	-
			(avg)	-	-	-	-
Na ₂ Cr ₂ O ₇	1.8 2.2	ppm	(max)	2.0	2.1	1.9	2.1
			(min)	1.8	1.8	1.8	1.8
			(avg)	1.9	2.0	1.8	1.9
Iron		ppm	(max)	.04	.02	.02	.04
			(min)	.01	.01	.01	.01
			(avg)	.02	.01	.01	.01
Chlorides		ppm avg		1.4	1.4	1.2	1.2

Lower Division

From November 1, 1949

Through November 30, 1949

200 AREAS

RESERVOIR (Building 282)

		<u>200-E</u>	<u>200-W</u>
Raw Water Pumped	gpm avg. rate	1806	2393

FILTER PLANT (Building 283)

Filtered Water Pumped	gpm avg. rate	307	777
Chlorine Consumed	lb.	167	243
Alum Consumed	lb.	969	3422
Chlorine Residual - Sanitary Water	ppm	.8	.4

POWER HOUSE (Building 284)

Steam Generated - Maximum	lbs./hr.	30000	78000
Steam Generated - Total	M lb.	16677	41120
Steam Generated - Ave. Rate	lb./hr.	23162	57111
Coal Consumed (Est.)	tons	1516	3240
Coal in Storage (Est.)	tons	9239	11282

300 AREA

POWER HOUSE (Building 384)

Steam Generated - Maximum	lbs./hr.	25,500
Steam Generated - Total	M lb.	14,385
Steam Generated - Avg. Rate	lb./hr.	19,970
Coal Consumed - Total (Est.)	tons	1,364
Coal in Storage (Est.)	tons	2,706

SANITARY AND FIRE SYSTEM

Sanitary Water (From 3000 Area)	gal.	29,473,750
Well Water Pumped - Total	gal.	278,450
Total Water Pumped	gal/day	991,740
Total Water	gpm avg. rate	689
Chlorine Residual	ppm	.55

MISCELLANEOUS AREAS

WHITE BLUFFS

Ice Manufactured	lbs.	0
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LOI SHOPS

Coal Consumed	tons	630
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INSTRUMENT DIVISION
MONTHLY REPORT

November, 1949

November 30, 1949

GENERAL

A training program for Instrument Trainees has been initiated. Classes meet in the White Bluffs Instrument Warehouse under the direction of an Engineer assigned as instructor. This training will be largely theoretical in nature to supplement on-the-job training.

Mr. T. G. Watkins has been promoted to the 200 Areas as Assistant Area Engineer responsible for Buildings 234-5 and 231-W.

100 AREAS (Reference Report: HW-15300)

Special fusing of all C.R. Beckman units was completed in all areas.

100-H Area

The eight thermopiles used to show the neutron flux level of the pile have performed satisfactorily to date even with minor shifts in rod configuration. More operating data must be obtained from the thermopiles before recommendation can be made to replace the ionization chamber in "A" hole with the thermopile octant monitor.

The relay system needed to connect the IBM machine to the Temperature Monitor is being installed. Completion is scheduled for December 15.

Approximately 125 gauges were replaced in Pressure Monitor during the period 11-1 through 11-28 due to leaks (82%) and off calibration (18%), a slight improvement over the average for the latter part of October.

New 14" butterfly valves were received and one installed in No. 1 tank inlet line. Performance was unsatisfactory due to excessive vibration in the 30" line. Relocation of valve to a point further from inlet bend and the installation of straightening vanes on the downstream side is the next corrective measure now being attempted. Republic regulator operates the 14" butterfly satisfactorily with 90 p.s.i. air supply to the piston.

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Shutdown Experience

The only shutdowns occurring in the 100 Areas due to instrument failure were at 100-H Area. They were as follows:

11-6-49 No. 1 Beckman tripped unit at 4:00 P.M.
11-8-49 No. 2 Beckman tripped unit at 10:25 A.M.
11-20-49 No. 2 Beckman tripped unit at 3:44 A.M.
11-23-49 No. 1 Beckman tripped unit at 7:54 P.M.
11-28-49 No. 2 Beckman tripped unit at 10:16 A.M.

It was not possible to take any corrective measures following the first three "scrams" other than a check of critical vacuum tubes in the amplifiers. During Nov. 22 shutdown, however, the leads and chambers to all units were megged and it was assumed that trouble was isolated when No. 1 and No. 2 chambers broke down under test. Spares were put in service but failed to eliminate the cause. Nothing was done following the next scram other than putting unit on by-pass, but there was time available following the 11-28-49 incident to replace Nos. 1 and 2 amplifiers. No. 1 settled down and is apparently performing satisfactorily, but No. 2 continued erratic and was kept on by-pass. Units in trip circuit: Nos. 1, 3 and 4 as of 11-30-49.

Investigations are continuing to determine the trouble with the No. 2 unit.

200 AREAS (Reference report: HW-15301)

Production Instruments

A 100-inch manometer has been installed in parallel with the Ring Balance weight factor recorder on 6-3 tank in Building 221-T, to improve accuracy of readings. A weighed water calibration of the system was made to compare the two instruments. Six persons took and recorded readings to minimize human error. On the basis of weight added, the maximum error indicated on the manometer was 0.029%, while the maximum error indicated on the Ring Balance recorder was 2.35%. This is greater than normal error for the recorder but may be attributed to taking of readings before the instrument had reached equilibrium.

Building 234-5

Production Instruments

Hood 8 - H. F. rotameters for furnaces 5 and 7 have been removed for installation of new monel valves. H.F. gas diffusion back into the purge air system has seriously etched the purge rotameter tubes.

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Hoods 25 and 26 - Considerable attention has been focused on obtaining suitable operating conditions in Hood 25, resulting in considerable overtime work and full time attention of two engineers. Various components were tested individually before installation to assure a leak-free system. As this was nearing completion an unusual occurrence inside the system necessitated dismantling, leak checking and re-assembly of the system. During this work the G.E. Mass Spectrometer leak detector failed and a second unit was brought into service. At the present time Hood 25 is re-assembled and vacuum appears to be satisfactory, and both leak detectors are in service. Several improvements in the system are necessary to achieve dependable continuous operation. These recommendations have been presented to the "S" Division to be acted upon as production requirements will allow.

Ventilation System

The balancing of the ventilation system has been completed. It was found that after final pressures and flows were achieved in various rooms so the doors could be operated normally, the controller sensing tips could be opened further, resulting in generally smoother control.

A test was completed to study pressure fluctuations in the atmospheric reference plenum. No high winds were encountered during the test but conclusions drawn from the test indicated no serious pressure fluctuations. Results have been submitted in a separate report. A new atmospheric reference tip has been fabricated to specifications of the Design Division and has been undergoing shop tests. Wind effects up to 30 miles per hour at various angles of incidence have been recorded and a performance report submitted. This tip will be installed upon receipt of the heating element to prevent freezing during winter weather.

Inability to control the supply plenum pressure during high winds has caused some difficulty in keeping the building ventilation system operating satisfactorily at times. A survey is being made of the plant equipment in order to obtain temporary pressure controls for the supply plenum. Equipment to be supplied by Design will not be available until about February 1 or March 1, 1950.

Moore pilot positioners were obtained from excess material and modified to meet requirements of the zone supply damper controllers. Shop tests have indicated characteristics of the Moore to be similar to that of the Taylor which has been giving satisfactory performance on the zone 2 control. Operational work has not permitted a shut-down of the ventilating system for installation of these positioners.

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300 AREA (Reference report: HW-15302)

MANUFACTURING SECTIONS

C-219 - Additional Health Instruments

All work on this project has been completed and the project closing notice was issued on November 18.

P-11 Project

Instrument fabrication on this project is approximately 90% complete. By December 1, remaining components will be delivered to the Instrument Development Section for testing.

M-715 - I.B.M. Installation, 100 Areas

Fabrication of requested components for one area is approximately 90% complete.

MAINTENANCE SECTION

Eleven Hanford Zeutos were returned from field test for additional changes to correct the variations in meter reading when the instrument was rotated through various positions. Maintenance changes included new aquadaged chambers, MFP-10 insulators and switch, and RMB4 Mallory filament cells. The instrument case was stiffened, a more rigid antenna support made, two additional feet were pressed into the bottom of the case and the tube was installed in a microphonic mounting. A definite improvement has been made, although additional design changes will be necessary to eliminate the undesirable feature.

DEVELOPMENT SECTION

Authorization has been received from the Technical Division to design and fabricate an experimental alpha scintillation counter. Design of a light-tight enclosure for the photomultiplier tube and source holder has been started. Recent laboratory tests indicate that a counting yield greater than 45% may be expected from the proposed equipment.

The Alpha Energy Analyzer exhibits some instability of operation and its ultimate usefulness for the desired application is in question. Recent modifications of a similar analyzer located at Oak Ridge are being studied.

Four (4) five-foot Geiger tubes were filled and tested for use on a doorway monitor station.

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DESIGN SECTION (Reference report: HW-15263)

Property record and cost accumulation for depreciation purposes on 100-H instrumentation is complete.

Eight hundred and sixty-eight (868) pressure gauges from the 105-DR pressure monitor have been returned to the vendor for rebuilding. The vendor expects to ship all gauges he now has by approximately December 14.

234-5 Building

Phase III

We are finding a need for closer contact with Schenectady on this phase of the work. Operation of Phase I has indicated some changes may be required in the instrumentation supplied by them. At present we do not have sufficient drawings available to indicate Schenectady's progress. Correspondence is in progress which will supply their instrument group with some of Operation's experiences with Phase I instrumentation.

Rala

A rough set of radiation calculations using many assumptions as to equipment location, process conditions and absorption coefficients has been completed. A preliminary chamber size will be established from this data. These calculations indicate that some connector development work may be required for ionization chambers located in the TB cell.

Redox

The general instrument specifications covering the design requirements for the Redox 202-S process plant was completed. This specification is issued as HW-4309. The Instrument Application sheets for the 202-S plant are checked and are ready to be issued.

The Project Engineering Division has issued to our group preliminary design layout prints on the Hot Chemical Semi-works for comment and estimating. This is for the preparation of a project proposal.

The plans for the 222-S Laboratory were reviewed and several recommendations for additional facilities to the Instrument Shop and other areas of the building were made.

A Proportioners' chemical feed pump and drive unit were received and set up for study. This unit was purchased as a possible pump to be used on the smallest flow to be encountered in the 222-S plant. Tests completed resulted in a number of recommendations to improve its performance. These recommendations have been taken up with a representative of the manufacturer for their consideration.

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MAINTENANCE DIVISION
MONTHLY REPORT
NOVEMBER 1949

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GENERAL

The Maintenance Division backlog of work at the end of the month was 5838 mandays, representing a decrease of 4% over October. A reduction in personnel was accomplished during the month, removing 15 millwrights, 5 machinists and 3 welders from our rolls for a net reduction of 7.2%.

100 AREA

The underwater manipulator in 105-B storage basin was rebuilt. All of the chain-driven mechanism was replaced with rigid rod controls, which will reduce future maintenance required by approximately 80%. The Whiting crane, in the same location, had excessive wear of the grooves on the load cable driver by the use of a special turning attachment made for previous use on 200 North Area cranes, the grooves were re-machined in place.

In order to minimize the spread of contamination on the roof of 105-F, the downcomer vent line was extended into the surge tank. This permits the surge tank vapor to be carried away to the sewer rather than settling on surrounding roof and ground area.

Cracks in the north wall of the 107-DR retention basin were repaired. Water from the DR high tank will be used to fill and test the basin through a special temporary pipe connection to the inlet sewer.

The governor valves to drive turbines to #1, #2 & #3 driers in 105-H were dismantled and re-machined to correct wearing and sticking due to sand, pipe scale and tank cutting in the steam lines. The lines were re-cleaned before re-assembly.

200 AREA

One section of an 8" underground water main was replaced in the vicinity of U Plant. Failure due to a transverse crack was possibly caused by heavy equipment operating in the vicinity doing backfilling.

Due to the failure of a glass bell jar in Hood #25 in Building 235 process line, it was necessary to dismantle the vacuum system, clean it, and place back in operation.

The vessel 14-1 in the B Canyon developed a rupture in the jacket seam, which was repaired by welding. A 1/8" vent line was installed to cushion vibration and minimize future damage.

The emergency generator turbine for the East Area was dismantled for inspection. The turbine shaft was found to be bowed. Repair parts were ordered and turbines placed in standby condition until they arrive.

The East Area Shop completed fabrication of eight cell pipe assemblies for replacement in the Canyon Buildings.

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300 AREA

The Molt Plant furnaces were dismantled and overhauled. Major items of replacement were brick lining and gaskets.

An 8" trap was installed in the sewer connection to the ash-slucio subway, to prevent explosive fumes from backing up into the manhole.

101 AREA

General

Material audit of graphite stocks received in the 101 Shops has been completed. Audit results have been compared and reconciled with the final Material Status Report received from the National Carbon Co., Morganton, N. C.

Grates in the No. 1 boiler have been replaced and a shield installed in front of the boiler. Also, leaks in flues have been stopped.

The chlorinator on No. 7 well was relocated in order to facilitate operation and eliminate a drainage problem effecting the transformer yard at this well.

The hot well pump and motor located in the Power House have been re-conditioned and replaced. A standby pump for the hot well has been installed.

All underground valves have been checked and leaks repaired and valve pits winterized.

Operation

The graphite testing program in the 300 Area has been completed and all graphite stocks returned to the 101 Shops. Technical has made the final allocation of material and also presented a grouping plan for the permanent storage of graphite stocks in the 101 Building. Graphite material is now being stored on a permanent basis in the raw storage area of the 101 Shops. Upon completion of the permanent storage operation, graphite stocks will be turned over to the Stores Division.

Test work for the Technical Division is still being conducted on the ink facility installed in the former laundry area for the 101 Shops. During the month, additional special graphite cylinders have been machined into crucibles, also several special experimental jobs have been completed which include a gas seal for experimental work, a weasel, installation of a special powerstal test set-up in the former laundry area, and special machining work on graphite test dowels.

The following inspection work has been completed during the month: Special set-up jig for checking graphite details; special spare chain assemblies for Sundstrand mill located in the raw storage area; cross keyway checking machine for graphite details.

Maintenance Division

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) Assistance has been rendered the Technical Division in the development of special measuring devices for "slugs".

Design work on graphite details for exponential piles has been started.

Special machining on graphite details for Design Division sheet rod tests is being worked on.

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ELECTRICAL DIVISION

NOVEMBER, 1949

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GENERAL

The backlog of scheduled work for the Division was 10,036 mandays at month end, an increase of 326 mandays during the month. This results from nominal changes in the backlog of various sections of the Division.

The total divisional personnel at month end was 303, a net decrease of two.

The load chart for the peak day of the month, November 17, is attached, showing a peak of 75,100 KW for the entire system with coincidental demand of 25,100 KW for the combined 66 KV and 115 KV systems. This is a new all time peak demand, slightly below seasonal expectation because of mild weather. The Village of Richland peak of 24,000 KW (November 21) is 20 percent higher than that of November, 1948 as compared to an occupied housing increase of 14 percent.

After studies, in an effort to decrease overall demand, procedures have been developed with the Power Division for maximum off-peak pumping at the 183 (River Pumping Station) Buildings in the 100 Areas, as well as limitation of use of smaller motors during peaking hours. An estimated reduction of power peak by 1800 KW depends upon operating judgment in predicting peak periods, but at the current rate of \$17.50 per KW year based on peak demand could result in a savings of \$31,500 per annum based on the present power contract.

Mr. H. A. Carlberg, Electrical Superintendent, visited the Bonneville Power Administration in Portland with Atomic Energy Commission representatives on November 2 and 3 for the purpose of discussing the power contract. Since his return, a power cost study has been developed for further discussion and for possible modification to the present contract.

AREA ACTIVITIES

Incorrect operation of blackout relays in fence light and 1700 Area circuits of 100-E Area has been corrected and tested.

During heavy winds on November 27 at 1:30 a.m., the oil circuit breaker controlling the non-process power supply to the 105 Building, 100 F Area, blew up while being reclosed by an Electrician. The breaker probably closed against a fault caused by the high wind whipping the lines. The breaker was repaired and returned to service on the following day, and the incident is being studied. Temporary connections through emergency bus were made without interference to production.

Shift coverage has been discontinued in the 200-E and 200-W Areas, and the corresponding personnel transferred to the 100-H Area. Emergencies during swing and night shifts as well as week ends will be covered on call-out basis. Savings are estimated at \$24,500 per year, dating from November 14, 1949. An acceptable blackout procedure without shift coverage has been developed.

Acceptance of oil circuit breakers of the 100 HP starters in Building 234-5 for exhaust air fans has not been made, pending further tests after discussion with Manufacturer's representatives of unsatisfactory operation of overload elements as well as undervoltage releases.

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Studies and recommendations were completed for cathodic protection in encasement for the proposed 241-S Tank Farm waste lines in conjunction with the Hanford Works Standards Committee.

In the 300 Area, Personnel Meters Building 3705, has been inspected electrically and accepted subject to correction of a number of minor items.

TRANSMISSION AND DISTRIBUTION

Sectionalizing switches were installed in the 700 Area in order to limit the buildings left without power during maintenance work, and to facilitate obtaining clearances to do the work.

A project has been requested in the amount of \$125,000 to provide a capital account for additional customer service extensions, transformer changes and wire size increases in Richland Village, the latter expected to result from increasing power consumption per housing unit.

The Taunton 115 KV line river crossing at Hanford has been inspected and repaired on Atomic Energy Commission order.

The line work for Project F-11 has been completed except for street lighting system held up awaiting material.

The distribution system in the new North Commercial Area in Richland has been accepted from Subcontractor and placed in service.

A number of minor power disturbances occurred together with one major disturbance involving loss of production during high winds of November 26 and 27. On November 26 at 11:38 p.m., a pole fire was discovered in Substation C2-S7 at the 190 Building, 100-B Area. Because of the close proximity of the alternate 13.8 KV line to the same substation, it was necessary to establish Critical Power Conditions (Grade 2) to remove both electrical sources to 190-B and 105-B Buildings in order to put out the fire. Extensive replacement of burned poles and cross-arms was necessary. The cause was determined to be a cracked 13.8 KV bus insulator which permitted excessive leakage current to flow to the wood structure during rain. The outage of approximately one hour resulted in loss of production of 18 hours.

Because of high area voltage, transformer taps at 251 Substation, 200-W, and also 200-E were changed to effect a reduction of approximately five percent in voltage.

TELEPHONE SECTION

Installation of customer service and instruments in the Village is now approximately 15 percent completed. In addition, a high rate of removals and relocations has been experienced during the month.

A list of manual switchboard and associated equipment has been prepared for excessing the old Richland exchange replaced by dial equipment.

Installation of all required telephones in 100-H Area has been completed.

Work is progressing on the 200 Area exchange, scheduled for completion by December 15, 1949.

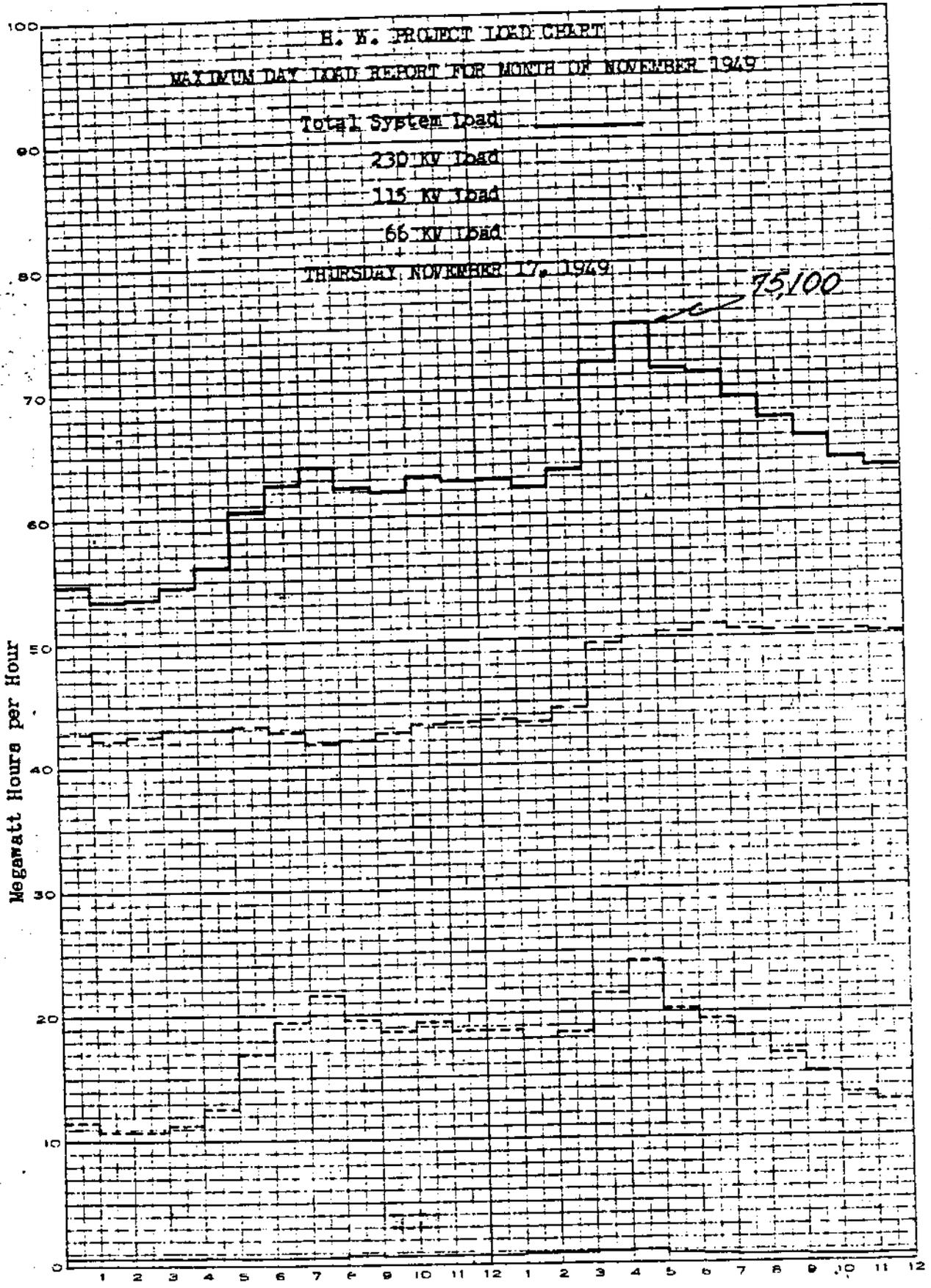
Electrical Division

During high winds of November 27, the 200-W Area cable was cut by contact with a road clearance sign suspended from the messenger. Service was restored to approximately 40 production area telephones after repairs on the following day.

DECLASSIFIED

KIDDERE DIEZEL CO.
MADE IN U.S.A.

ONE DAY BY HOURS



1225250

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Classification Control System
By Authority of
OFFICE OF OPERATIONS
VIEW BOARD
W. J. Newton, Chairman

JE

TRANSPORTATION DIVISION
MONTHLY REPORT
NOVEMBER 1949

Date: 12-18-57

GENERAL

Transportation Division personnel rates were decreased by 1 exempt and 7 non-exempt employees during the month from 621 to 613 by 14 transfers in, 11 transfers out, 9 lack of work and 2 voluntary quit terminations.

RAILROAD ACTIVITIES

Commercial inbound tonnage increased approximately 63% over the past two months as heavy shipments of industrial coal were received to replenish declining inventories. This increase in operations necessitated reactivation of a third 120-ton Diesel electric locomotive. Process service continued at a normal level with all movements being completed as scheduled.

Twenty Milwaukee flat cars were leased by the Design and Construction Divisions to be used for the movement of rail and ties from Hanford to Richland for use in the construction of the Southern Connection.

120-ton Diesel electric locomotive 39-3732 was removed from service for major engine repairs.

Railroad track maintenance continued on a normal basis throughout all five sections with the surfacing, lining, gauging, and dressing of track; replacement of defective switch and cross ties; rehabilitation of the warehouse track at Hanford; repairs to damaged coal track in 100-H Area; shortening of 1125 Warehouse track and installation of tie bumper; and installation of three crossings in 200-East Area.

AUTOMOTIVE ACTIVITIES

Area and Village Bus Systems registered a combined decrease of 1,195 passengers over October. The November total would have been the highest passenger count recorded since March had it not been a 30-day month with a holiday.

The Goethals Area Shuttle and Village bus routes were both revised to conform with the re-routing of Goethals Drive near the new business district.

The Planning and Methods Section with representatives of the Operations Section and the Atomic Energy Commission Transportation Section began preparing a special report on the operation of the Transportation Division Bus System.

The Planning and Methods Section continued its study of sedans assigned to the 700 Area. The purpose of this study is to increase utilization and to reduce the number of vehicles assigned. All sedans, except one, operating out of the 700 Area which are assigned to the General Electric Company have been placed in the 700 Area Motor Pool under trip ticket control.

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Completed rebuilding of Hyster lift truck 63-4564 at a cost of approximately \$1,500. This unit is now almost comparable to a new vehicle which would cost about \$7,000. Hyster 3-4098 was dismantled for a complete overhaul.

CONSTRUCTION AND LABOR ACTIVITIES

Crushed and stockpiled 1,080 cubic yards of 5/8" chips and 536 cubic yards of 1/2" chips. Mixed 583 tons of blacktop material. Expended approximately 900 manhours in maintaining outside area roads and hauled 700 cubic yards of ballast and 300 cubic yards of crushed rock 1" minus.

Expended 2,218 manhours in handling X material in the 101 Area.

Routine Area Maintenance was performed in all operating areas with labor and transportation facilities being furnished for Projects C-101, C-185, C-192, C-214, C-223, C-268, C-271, C-279, C-291, C-330, C-331, C-340, and Well Drilling Operations.

~~Classification Change
By Authority: [Redacted] / [Signature]
OFFICE: NON-TECHNICAL DOCUMENT REVIEW BOARD
Newton, Chairman
Date: 12-29-57~~

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

DECLASSIFIED

PROJECT ENGINEERING DIVISIONS

MONTHLY REPORT

NOVEMBER 1949

DECLASSIFIED

PRESENT STATUS OF WORK

Projects Authorized and Under Construction

100 AREAS

<u>Project Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
C-172	Dismantling of Equipment in Demineralization & Deaerating Plants (Revised project in preparation to cover changes in scope)	16	8-19-47	\$ 486,000
C-184	Experimental Animal Farm - Parts I & II	95	4-28-49	335,900
C-192	Biology Lab. Bldg. 108-F, Parts I & II	35	4-20-49	1,121,000
C-290	Fabricate & Install Spectrometer	65	9-29-48	17,400
C-306	Revised Pile Shielding - Front Face Shield Nozzle Caps	5	11-30-48	88,000
C-323	Vertical Rod Replacement - 105 B, D & F	95	3-10-49	280,600
C-334	P-10 Alloy Facilities	99	1-28-49	242,000
C-340	P-11 Project (Parts I & II)	38	6-28-49	328,000
C-346	P-12 Project (Exponential Experimental Fac.)	0	10-31-49	<u>391,000</u>
<u>TOTAL Estimated Cost Active 100 Area Projects</u>				<u>\$ 3,289,900</u>

200 AREAS

C-271	Additional Waste Storage Facilities 241-BY (G.E. portion only - subcontract not included)	95	9-29-48	\$ 50,000
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Project Engineering Divisions

Projects Authorized & Under Construction (Cont'd)**DECLASSIFIED**200 AREAS (Cont'd)

<u>Project Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
C-268	Sanitary Tile Field Addition 200 EW	90	(Rev. Dir.) 8-17-49	\$ 91,000
C-337	Dissolver Off-Gas Filtration Facilities (Modified Project Proposal being written)	0	6-22-49	337,000
C-349	Hot Semi-Works - Engineering Costs	5	10-31-49	<u>33,250</u>
<u>TOTAL Estimated Cost Active 200 Area Projects</u>				<u>\$ 511,250</u>

300 AREA

C-219	Construction of Additional H. I. Instruments	100	1-27-48	\$ 97,200
C-227	Conversion of Offices to Labs Bldg. 3706 & Construction of 3707-C Change House (Work Stopped)	99	3-15-48	557,000
C-287	Experimental Metallurgy Lab. Bldg. 3730	73	12-2-48	140,000
C-330	Improved Ventilation 313 & 314 Bldg. (Modification to project being prepared to reduce scope of work to \$200,000)	10	9-24-48	540,000
C-331	Rehabilitation of Bldg. 321	99	1-31-49	227,000
C-333	Mine Tube Test Unit - B, D & F Blocks	62	7-13-49	<u>25,400</u>
<u>TOTAL Estimated Cost Active 300 Area Projects</u>				<u>\$ 1,489,400</u>

GENERAL PLANT AREAS

C-138	Richland Telephone Exchange Bldg. 702	94	5-12-47	\$ 470,500
C-144	Additional Tel. Cables - Richland	77	5-12-47	71,000

Project Engineering Divisions

DECLASSIFIED

Projects Authorized & Under Construction (Cont'd)

GENERAL PLANT AREAS (Cont'd)

<u>Project Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
C-177	115 KV Power Transmission Line (Work stopped pending additional authorization from AEC. Total under Part IV will be \$1,500,000)	95	8-14-47 (Rev. Dir.)	\$ 1,364,000
C-276	Plant Telephone Project	87	11-17-49	1,548,600
C-291	Security Fences - All Areas	43	10-18-48	441,800
C-279	Improvement to Area Administration Buildings	99	(Rev. Dir.) 5-18-49	167,800
C-333	H. I. Operational Survey Insts.	20	4-20-49	85,000
C-322	Osmose Treatment of Plant Elec. Poles & Replacements Where Necessary	89	2-1-49	154,000
C-341	Additions to Richland Elect. Distribution System	0	9-2-49	<u>173,600</u>
<u>TOTAL Estimated Cost Active Plant General Projects</u>				<u>\$ 4,476,300</u>

Informal Project Requests Authorized

ALL AREAS

<u>Request Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
M-711	Experimental Algae Filter - 107 Bldg.	98	5-6-49	\$ 13,000
M-713	Flexible Vertical Rod Studies	12	7-19-49	18,500
Med-1	Surgical Wing Air Conditioning - Kadlec Hospital	70	5-5-49	16,100
M-715	IBM Installation for Individual Tube Accounting - 105 B, D, F and H	16	9-15-49	13,400

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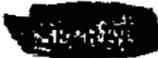
Project Engineering Divisions

Informal Project Requests Authorized (Cont'd)

<u>Request Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
M-716	Preliminary Engineering & Project Preparation - Parallel Operation of 221 T&B Cells	10	6-24-49	\$ 10,000
Serv-9	Badge House Addition 300 Area (Revised Request in Preparation)	0	12-15-48	14,500
M-717	Alterations to Power and Phone Lines Necessitated by Permanent Levees	85	9-16-49	8,600
M-721	Far Side Pile Restraining Clamps	17	10-7-49	15,000
M-723	Leak Repairs to North Retention Basin - 107-B	0	10-25-49	18,100
Med-14	Soft Water Pipe Line 784-A to Kadlec Hospital	0	9-19-49	9,800
M-753	Installation of Fission Counter In Bldg. 222-T	0	10-7-49	<u>14,750</u>
	<u>TOTAL</u>			<u>\$ 151,750</u>
	<u>CURRENT GRAND TOTAL OF AUTHORIZED PROJECT WORK</u>			<u>\$ 9,918,600</u>

Projects Being Routed for Approvals

<u>E. R. No.</u>	<u>Project No.</u>		
2469	C-326	Underground Geological & Hydrological Investigation Program Including Test Wells & Other Fac. (Revised Project to be submitted)	\$ 193,000
2504		Installation of Laboratory Furniture in 271 T&B (Revised Project to be submitted)	24,000
A-3062	C-339	300 Rolling Mill (Revised Project in Preparation)	1,340,000
A-1100		Galvanizing & Replacement of Process Tube Nozzles B,D,F & DR	775,000



Project Engineering Divisions

DECLASSIFIED

Projects Being Routed for Approvals (Cont'd)

<u>E. R. No.</u>	<u>Project No.</u>		
A-1110		Pile Clearance - Inner Rod Rooms - 105 B, D, F	\$ 40,600
A-550	C-354	Addition to Building 3745	20,300
E-413		Telemetering and Supervisory Control of Incoming Power	\$ <u>33,700</u>
<u>TOTAL Estimated Cost of Projects Routed for Approval And Authorization</u>			\$ <u>2,426,600</u>

Project Engineering Divisions Area Reports

Status of Engineering Study & Design Work in Progress During the Month of November.

100 AREAS

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-1001	As-Built Drawings	(Continuous Program)
A-1002	G. E. C. Study	(Continuous Program)
A-1068	Prepare Informal Request for Developing a Flexible Vertical Rod	30
A-1074	Design Moisture Extraction Facilities for Gas System - 105 Building	2
A-1075	Recommend Adequate Warehousing for 100, 200 & 300 Areas	75
A-1076	Replacement of V.S.R. and Guides in 105 B, D, F (Designs for Project C-323)	90
A-1077	P-10 Alloy Facilities (Designs for Project C-334)	96
A-1080	Thermocouple for 105 Process Tube	52
A-1085	Prepare Project for Pile Operation with 100% CO ₂ Atmosphere, 100 F Area	35
A-1086	High Tank Control Valves	70



Project Engineering Divisions

DECLASSIFIED

Project Engineering Divisions Area Reports

Status of Engineering Study & Design Work in Progress During the Month of November.

100 AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-1093	P-11 Project (Parts I & II - Designs for Project C-340)	60
A-1094	Algae Pilot Filter	95
A-1096	Study Lubrication of Process Tubes During Charging	5
A-1097	Hot and Cold Exponential Experiments in 101 Building (Designs for Project C-346)	80
A-1100	Nozzle Galvanizing and Replacement	50
A-1101	IFM Equipment	85
A-1104	Repairs to 107 Basin	98
A-1106	Far Side Bracing	85
A-1110	Pile Clearance - Near Side	85
A-1116	Health Monitoring & Storage Fac. 111-B	30
A-1117	Can Opener Improvements	50
A-1118	Reinforce 105-F Downcomer	10
A-1119	Coal Metering Eqt. 100 - 200 - 300	5
A-1120	300 Area Cost Breakdown Sheet	85
A-1121	CO ₂ Unloading Dock	80
A-1122	Prep. Proj. for Development and Fabrication of Flexible Horizontal Rods	1
A-1123	Tie Line - Effluent Vent to Downcomer	15
A-1124	Hood Flow Measurements 111-B	0

200 AREAS

2266 As-Built Drawings (Continuous Program)

10875

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Project Engineering Divisions

Project Engineering Divisions Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During the Month of November.

200 AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
2279	Prepare Project for Regasketing Facilities 221 T&B	85
2467	Engineering Contact on New Processes	50
2490	Prepare Project for Iodine Removal (New Design in Preparation)	25
2491	Design Evaporation Facilities First Cycle Waste	70
2493	Check Elevation of Inlet Duct Bldg. 291-B	65
2498-P	Design Fission Counter -222-T	10
2501-R	Prepare Project for Complete Parallel Operation Bldgs. 221T-B (Postponed by "S" Division 10-5-49)	10
2502	Recommend Portable Ventilation Equipment for Dry Box Hoods Bldg. 234-5	75
2503	Prepare Project for Duct Level Floor Bldg. 234-5 (Postponed by "S" Div. 10-3-49)	60
2513	Prepare Project for Paneled Hood in Rear of Hoods 4 to 8 - Bldg. 234-5	90
2514	Make Engineering Study of "AA" Fiberglas for Project C-337	100
2515	Prepare Engineering Report on Use of New Type Steam Jet - Bldg. 221 & 224	90

300 AREA

A-3002	As-Built Drawings	(Continuous Program)
A-3061	Increased Ventilation - 313 & 314 Bldgs. (Designs for Project C-330)	72
A-3062	Install Rolling Mill - 300 Area (Designs for Project C-339)	18

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Project Engineering Divisions

Project Engineering Divisions Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During the Month of November.

300 AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-3067	Billet Lifting Tongs (Alternative method being considered)	60
A-3070	Study Ventilation 3706 Requirements to Provide 40% Humidity	20
A-3075	Design for Nine Tube Mock-Up for 105 EDF Type Blocks. (Designs for Project C-338)	92
A-3077	Prepare Project for Three Automatic Screw Machines 313 Building	45
A-3082	Design and Prepare Cost Estimate for Exhaust Systems for Graphite Machining in Room 41-A, 3706 Bldg.	0
A-3083	Prepare Project for C-6 Hydrofluoric Acid Sludge Recovery	53
A-3086	Gas Corrosion Facility	95
A-3085	Study High Water Tank Riverland	30
A-546	Prepare Project for Redox Hot Semi-Works	5

GENERAL PLANT AREAS

828-R	Designs for Telephone Bldg. 702 Alterations - Project C-138	99
A-420	As-Built Drawings of Plant Railroad	99
A-452	Plant Telephone Project (Design work for Project C-276)	95
A-526	Special Field Information for 300 Area As-Builts	90
A-528-R	Prepare Project for New Instrument Shop - 300 Area	10
A-532	Design Work for Project C-192 - Construction of Biology Lab. - Bldg. 108-F, Parts I, II & III	85

Project Engineering Divisions Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During the Month of November.

GENERAL PLANT AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-553	Architectural Standards	4
A-536	Additional Capacity for Sewage Lift Pumps Richland	90
A-537	Survey for Maintenance of R.R. Inside Restricted Areas	70
A-541	Design & Survey for Railroad and Spurs to Redox Plant (Revisions to be made)	100
A-542	Addition to Bldg. 622 - Meteorology Bldg. (Revisions to be made)	10
A-543	Pistol Range Sanitary Facilities, Arsenal, etc.	50
A-546	Design Work - Hot Chemical Works 200 E Area	5
A-548	Prepare Project for Solvent Storage Facilities - 300 Area	50
A-549	Prepare Project for Cylinder Storage Dock - 300 Area	50
A-550	Design for Addition to Bldg. 3745	100
A-552	Soft Water Pipe Line - Hospital	70
A-554	Sketch & Estimate for Moving B-Y Badge House to 222-U	100
A-555	Prepare Project to Cover Engineering Costs for Aquatic Laboratory 100-F Area	10
A-556	Study Application of Asbestos Shakes for Bldgs. 272-E-W	100
A-557	Prepare Project for New Fences - 230 KV and Distribution Substations	0
A-558	Prepare Project for Transformer Oil Storage Facilities	0

Project Engineering Divisions Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During the Month of November.

GENERAL PLANT AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-559	Prepare Project for Service Buildings - 115 KV Substations	0
A-560	Prepare Project for Relocation of Richland Line Crew Headquarters	0
A-962	Designs for 115 KV Power Line Through Richland (Project C-177)	95
A-1034	Prepare Revised Project for Dismantling of Equipment in De-Aeration Plants - 100 EDF	40
E-403	Install Traffic Signals at Richland Railroad Crossings	100
E-405	Electrical As-Built Drawings	(Continuous Program)
E-406	Additions to Village Distribution System (Designs for Project C-341)	25
E-407	Prepare Project - Inst. Htrs. on Evacuation Busses & Service Facilities	65
E-411	Study Design & Est. Cost of Dual Feed of Sewage Lift Station	55
E-413	Study & Project - Telemetering 115 & 230 KV Lines & Remote Control on 115 KV Substation	20
E-422	Misc. Tel. Service Additions - Prep. Proj.	10
E-423	Extend 13.8 Feeder - 100H to W.B. - Prep. Proj.	10
E-424	Centralization of Area Substation Control - Prepare Project	10
E-425	Change Present 440 V. Grounding, All Areas - Prepare Project	10
E-426	Salvage & Recovery of Tel. Cable & Exchange Equipment - Prepare Project	10
E-427	Add'n Electrical Pole Replacements - Fiscal Year 1950 - Prepare Project	10

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Project Engineering Divisions

Project Engineering Divisions Area Reports (Cont'd)

Status of Engineering Study & Design Work in Progress During the Month of November.

GENERAL PLANT AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
E-428	Dismantle Distribution Lines & Telephone Cable - Hanford	10
E-429	Cathodic Protection - Prepare Project	10
E-430	Emergency Generator 300 Area - Prepare Project	10
E-431	Emergency Power Plant - Richland Exchange (Preliminary Engineering)	0

ENGINEERING STUDIES

WORK COMPLETED:

	<u>DATE</u>
E. R. 4336 - Revised Lubricant Coding System	11-4-49
E. R. 4346 - Mechanization of Slug Marking, Cutoff and Inspection Processes - 313 Bldg.	11-10-49
E. R. 4347 - Frost Test and Penetration Test Line Improvements - Building 313	11-10-49
E. R. 4362 - Manufacturing Divisions Personnel Analysis (Cancelled)	10-28-49
E. R. 4365 - Welding and Inspection Line Analysis	11-1-49

WORK ADDED:

	<u>DATE</u>
E. R. 4365 - Chip Briquetting Study	11-15-49
E. R. 4365 - Economic Analysis - Canning Methods	11-15-49
E. R. 4370 - Methods Studies, "P" Division, 100 Area Charge-Discharge Equipment Mechanization - 105 Processes	11-1-49
E. R. 4371 - Projects Manpower Survey	11-15-49

Project Engineering Divisions

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ENGINEERING STUDIES (Cont'd)

<u>WORK SCHEDULED:</u>	<u>% COMPLETE</u>
E. R. 4363 - P.E.D. Personnel Analysis	75
E. R. 4365 - 300 Area Methods Studies	
Rod Machining	99
Bronze Pot Cycle Changes	80
Machining Scrap Reduction	99
Canned Slug Reject Reduction	99
Slug Canning Line Analysis	78
Chip Briquetting Study	0
Canning Methods	10
E. R. 4366 - Welder Classification Tests	90
I. R. M714 - Electrical Power Conservation	65
Routine - Civil & Architectural Standards	-
E. R. 4368 - Lubrication Specifications, Bldg. 3796	65
E. R. 4369 - P.E.D. Safety Manual	98
E. R. 4370 - 100 Area, Methods Studies	
Charge-Discharge Equipment	5
Mechanization - 105 Processes	5
E. R. 4371 - Projects Manpower Survey	5

BACKLOG SUMMARY

	<u>Work on Hand 10-31-49</u>	<u>Work on Hand 11-30-49</u>
	<u>Estimated Man Days</u>	<u>Estimated Man Days</u>
Studies	312	269
Project & Design	<u>8,402</u>	<u>8,660</u>
TOTAL	8,714	8,929

TECHNICAL DIVISIONS

November 1949

DECLASSIFIEDSUMMARY

12/10/49

File Technology Division

The H Pile operated at 275 MW through most of the month. Anticipated loss of reactivity was encountered, caused by the time delay in the build-up of plutonium. Anticipated evidence of graphite expansion was observed, caused by the initially low graphite temperatures.

Increases in carbon dioxide concentration in the atmosphere of the B and D Piles resulted in a month-end status of 100% carbon dioxide at the H Pile, 80% at the B Pile, and 60% at the D and F Piles.

Operation of the critical mass facility is scheduled to start on March 1, 1950.

All four lines of the P-10 extraction facility were in operation by the end of the month.

Separations Technology Division

Improvements in calibration and measurement methods have brought recent Separations Plants material balances to 100.4% and 98.3% for B and T Plants, respectively, but further improvements are still being sought. The B Plant has been converted to semi-parallel operation. A reduction of the Concentration Building metathesis time cycle to ca. 12 hours has thus far been satisfactorily effected in a production test currently in progress. Building 234-5 product salt conversions have averaged 93% and salt-to-metal conversions have averaged 98.3% during the past month. Core Model 090 equipment recently received have been calibrated with lead. Two Model 051 core units have failed the electrolytic test following abrasion operations aimed at correcting dimensional defects.

In Redox development, eleven additional column runs were completed during the month, involving studies of IA, IB, and IC pulse column operation. The effects of pulse frequencies and amplitude on H.E.T.S., R.T.U., plate efficiency, and flooding capacities for these systems have been measured. In addition, five column runs were made to study the operation of the IS Rework Column and the IID and IIE Columns (second uranium cycle). Preliminary column studies of the T.B.P. metal recovery process have also been initiated. Semi-works runs on the di-uranate method of waste metal recovery feed preparation for Redox gave satisfactory phosphate removal but high uranium losses (ca. 20%) and precipitates with poor handling properties. Revision of the 321 Building ventilation system and installation of the Scale-Up inert gas generator have been essentially completed. The G.E. & C.L. Submerged Pump No. 2 was dismantled after nearly five months of continuous test operation in aluminum nitrate solution with no evidences of serious wear. Semi-works studies of the clarification of metal solution by Super Filtrol and the handling properties of this material have been continued.

Technical Divisions

DECLASSIFIED

HW-15267-

In the research laboratory, exploratory studies of the TBP process for metal recovery have been initiated. These have involved measurement of concentration factors obtainable on the first column waste, system density and viscosity measurements, batch equilibrium studies, pulse column battery operation, and decontamination of uranium from plutonium. Continued ruthenium volatilization

As part of the Rala design effort, the Analytical Section completed the preliminary calculations of shielding requirements, and the design of internal fixtures for two junior caves to be used in the Rala laboratory. Equipment and space requirements for the spectrochemical facilities also were established, and plans were made for the formation of a special design group to expedite work on the detailing of new equipment for this laboratory.

As a result of a cooperative study initiated by the Statistics Group, a significant reduction in the width of cut-off tool used in uranium machining was effected by the P Division. The net savings to accrue from this step are estimated at \$75,000 per year at the present production rate.

ABG:dg

ABG

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HW-15267

December 8, 1949

PILE TECHNOLOGY DIVISION

NOVEMBER, 1949

VISITORS AND BUSINESS TRIPS

A. F. Rupp and J. A. Cox, Oak Ridge National Laboratory, were here November 14 and 15, 1949, to discuss Special Requests.

W. E. Parkins, North American Aviation, Inc., was here November 17 and 18, 1949, to discuss radiation damage.

J. S. Lukesh, Knolls Atomic Power Laboratory, was here November 17 and 18, 1949, to discuss graphite work.

P. E. Brown and J. R. Humphreys, Argonne National Laboratory, arrived November 23 for an extended visit in connection with Special Request ANL-141.

R. W. Coyle, Fairchild Airplane and Engine Corp., Oak Ridge, Tenn., was here November 29, 30, and December 1, 1949, to discuss proposed irradiation experiments.

R. E. Githens, Fairchild Engine and Airplane Corp., Oak Ridge, Tenn., was here November 29 through December 9, 1949, to discuss proposed irradiation experiments.

C. E. Stevenson, Argonne National Laboratory, was here November 30 and December 1, 1949, to discuss the P-10 project.

Darol Froman and Maxwell Golblatt, Los Alamos Scientific Laboratory, were here November 30 and December 1, 1949, to discuss the P-10 project.

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

Pile Technology Division

F. E. Kruesi was in Bremerton, Washington October 31 and November 1, 1949, for consultation on P-11 equipment fabrication.

C. M. Hammack visited Brookhaven National Laboratory October 31 through November 3, 1949, to consult with the Instrumentation Group. He attended the conference of the Institute of Radio Engineers while in New York. November 4 through 7 he visited Oak Ridge to discuss instrumentation and was at the Argonne National Laboratory from November 7 through November 11, 1949 to discuss instrumentation and radiation damage.

D. E. Davenport attended conference of the Institute of Radio Engineers in New York October 31 through November 3, 1949.

C. W. Botsford visited Battelle Memorial Institute at Columbus, Ohio, November 7 and 8 for consultation on metallurgical problems.

ORGANIZATION AND PERSONNEL

	<u>October</u>	<u>November</u>
Pile Physics Section	34	34
Pile Engineering	33	33
P-10 Project	7	9
Administrative	3	3
	<u>77</u>	<u>79</u>

One physicist terminated during the month, one physicist was hired, and a physicist was returned to the rolls after a three months leave of absence.

One laboratory assistant transferred to Metallurgy and Control Division and two laboratory assistants transferred into the Division. One technologist and one technical graduate were transferred to monthly payroll as engineers and a technical graduate was transferred to monthly payroll as a physicist.

PHYSICS

H Area Operation

The power level of the H Pile was raised to 275 MW early in the month and maintained there during the month. The original loading of lead-cadmium columns was found to be too strong for equilibrium operation especially in view of the decreasing reactivity of the pile. An adjustment was made at the first of the two shutdowns which occurred during the month.

Pile Technology Division

The loss of reactivity is in agreement with expectations and is due to burnout of U-235 and buildup of fission product samarium in the new metal. These losses will eventually be overcome by buildup of plutonium.

The octant monitoring system which uses neutron thermopiles has been found to be more nearly linear with true power than the ion chamber galvanometer system.

Critical Mass Experiments

A schedule of the remaining construction work has been prepared by the Project Engineering Division which calls for completion of the first test unit by March 1, 1950.

Steel and sheet metal work on the experimental building was completed during the month and interior work was begun including installation of the steel framework for the first test unit. The site water system is practically complete and electrical work is progressing on schedule.

A detailed study of the potential hazards involved in critical mass experiments of the type proposed has been prepared, (Document HW-15279).

It now appears that, following completion of experiments in a cylindrical geometry, the first test unit can be converted for experiments in hemispherical and spherical geometries and that a complete second unit will not be required.

Exponential Experiments

The experimental part of this project is now in the procurement stage.

Earlier plans, calling for construction of an electronics shop, counting room, and office space in 101 Building, have been suspended. Only the minimum necessary construction will be done at the present time in order to get the experimental program underway as quickly as possible.

Theoretical work has been in progress directed toward aiding the interpretation of experimental results. The perturbation of the pile equations by irregularly shaped boundaries has been studied and it has been possible to predict the effects resulting from erecting exponential piles with a graphite base of larger dimensions than the pile proper.

Increased Tritium Production

Consideration is being given to the use of slugs of enriched U-Al alloy to increase the reactivity of a pile for purposes of increasing the production of tritium. This process could of course be carried to the limit of a pile devoted exclusively to tritium production. Initial attention has been focused

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on the reactivity gained from recent exposures of a small number of such slugs in the piles. The disagreement between calculated and observed gains is being critically reviewed.

Special Request Program

There were several non-routine developments in the Special Request program. Planning and mock-up tests were carried out in connection with request ANL-141 which contemplates the exposure of a stainless steel spring under stress in a stainless steel pressure shell containing some water. Since this assembly will not be cooled, steam pressure will be built up in the assembly under test conditions. A stainless steel capillary tube and leads for two thermocouples will be brought out through the pile shield so that measurements can be made during operation.

For request GECL-100, forty special buckets have been fabricated to hold freshly discharged slugs in a circular array on the bottom of the discharge basin. Samples of non-metallic materials will be placed at the center of the circle for exposure to the intense gamma radiation. A special instrument is being developed by the E. I. Physics Group to read the high intensity radiation on the samples.

Two Special Request slugs, discharged from the same tube of a pile, were found to be corroded and apparently leaking. One piece was SR-63 (Al-U²³⁵ alloy) and the other ANL-114 (thorium oxide). No unusual radioactivity was found either in the cooling water from the tube or in the basin near the discharged slugs. Four Special Requests, other than P-10 slugs, were discharged during the month and five were charged. At month end 21 Special Requests were on hand waiting irradiation.

Assistance to Design Division

A calculation was made of the shielding effectiveness of a proposed tapered gun barrel design. Preliminary results indicated that the design appears feasible enough to justify a mockup study. (Document EW-15208).

Critical analysis of the proposed control system for G Pile is in progress.

Shielding

Additional samples of masonite have been exposed in a test hole to determine the magnitude of the deterioration of this material under bombardment. The weight loss of samples increased with increasing exposure but the percentage of hydrogen and carbon in the samples increased. The losses were apparently due almost entirely to oxygen loss. Exposures equivalent to 40-50 years in

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the biological shield produced only 8.5% loss in weight.

Miscellaneous Activities

Testing of graphite production heats was completed during the month, the final lots tested consisting of miscellaneous material used for various non-routine purposes during the past three years. Testing of Li-Al alloy slugs has continued and a new set of standards has been fabricated consisting of lithium carbonate and powdered graphite in aluminum slug cans.

The IBM punched card machines were used to calculate values of xenon poisoning for flattening varying from zero to 850 inhours in steps of 50 inhours and for power levels from 50 MW to 300 MW in 50 MW steps and from 300 MW to 500 MW in 25 MW steps. This is the first extensive integration of xenon poisoning for flattened neutron distribution. The results differ importantly from the approximate formula previously used. Tables of the results have been prepared. Several other numerical tables were prepared for use in exponential experiment work.

The cooling water supply to the B Test Hole of the D Pile failed on November 13. Although water flow was restored in less than 10 minutes, the temperature reached 240° C. and some samples in the hole may have been damaged. A more reliable water supply system is being installed.

Reactivity

The increase in carbon dioxide concentration in the D Pile from 40% to 60% produced a reactivity gain of 28 inhours in agreement with the 28° C. temperature rise in the central graphite. At the B Pile, however, an increase from 60% to 80% carbon dioxide produced a gain of 40 inhours, and a temperature gain of 26° C. This reactivity change is being examined critically to determine whether it is a real departure from previously observed trends of 1 inhour for 1° C. of central graphite temperature.

A statistical analysis is being made of the data from all special tests to determine the constants of the xenon poisoning.

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

	<u>B Pile</u>	<u>D Pile</u>	<u>F Pile</u>	<u>H Pile</u>
In rods	73 ih	110 ih	90 ih	120 ih
In Special Requests	417	387	370	0
In Lead-Cadmium columns	0	0	0	162
In Plant Assistance Irradiations	0	20	0	5
In Dummy Columns	0	6	32	0
In bismuth	117	109	114	0
In xenon	469	499	456	551
In over-all coefficient	<u>- 224</u>	<u>- 228</u>	<u>- 235</u>	<u>- 55</u>
Total cold, clean reactivity	852	903	837	783

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The overall coefficient contribution at the B and D Piles has been adjusted for the increase in carbon dioxide concentration.

The B Pile gained 7 inhours, the D Pile 16 inhours, and the F Pile 2 inhours during the month. The loss at H Pile during the month is estimated at 40 inhours.

ENGINEERING

Graphite Expansion

Carbon dioxide in the B Pile atmosphere was increased from 60 to 80% between November 7 and 16. At the D Pile the carbon dioxide was increased from 40% to 60% between October 31 and November 6. The average central graphite temperature increased to 300° C.

Measurements of the vertical height of the H Pile graphite as determined by rods which penetrate the top shield indicate an expansion of 0.06 to 0.14 inches during the first month of operation. Expansion of this magnitude is to be expected because of expansion of filler blocks at the comparatively low temperatures encountered during initial operation. The central graphite temperature at 275 MW with 100% carbon dioxide is about 160° C.

An optical instrument has been developed for measuring the width of graphite blocks above or below a test hole opening in the piles. Gauges to measure curvature of graphite blocks and diameter of graphite channels were refined and calibrated and now are ready for use. A mercury manometer with an accuracy of ± .01 inches for use in tube bowing measurements is nearly complete. This instrument is to be used for measurements of expansion in the cooler zones of the piles.

Heat Transfer

Equipment is being assembled in the 101 Building to measure the pressure drop of water boiling in a small tube with an inside diameter corresponding to hydraulic diameter of the process tube annulus.

Development of Alternative 3A System

The central graphite temperatures at the D and F Piles are approaching the limit that can be tolerated by the 2S vertical thimbles. Continued decrease of graphite thermal conductivity, higher carbon dioxide concentrations and higher power levels are expected to cause further increases in graphite temperatures in the future.

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HW-15267

File Technology Division

A survey of this problem has indicated that cooling the thimbles in the B, D, and F Piles is impractical and that no metal, with the possible exception of zirconium, has a combination of properties that is satisfactory for thimble construction. Development work has therefore been initiated on an alternative 3X system and gas seals which will permit operation without thimbles. A ball 3X system in which the balls are contained in a hollow vertical rod or in a hopper above the step plug is being evaluated. (Current effort by the Design Division along this line is directed toward the use of a ball 3X system in conjunction with sheet rods.)

Slug Inspection

A tube of Group IV metal, exposed 528 MD/T at the B File, was discharged without difficulty. The maximum warp observed was 30 mils.

In order to permit a better correlation of slug deformation data with exposure level, a "weasel" has been installed at the F File to determine for each slug the approximate position in the tube.

Beta Experiment

Slug E-5 was opened and the fuel element capsule shipped to Schenectady on November 7. Slugs B-9 and B-6 are cooling after discharge. H-2, H-3, and H-4 are being irradiated in Tubes 0865-F, 1077-F, and 1071-F, respectively. Nine slugs containing a total of 18 springs were loaded in the tube behind H-3. The irradiation of the springs is covered by Production Test No. 105-180-P, Supplement G.

P-10 Project

Tritium extraction has proceeded with an operating efficiency of on Line 3 and on Line 4. Lines 2 and 1 were placed in operation on November 11 and November 30, respectively. The purity of the tritium extracted during the month averaged

A break occurred on Line 3 on November 22. No product was lost; however, approximately 213 units were contaminated with air. This product is being stored for reprocessing at a later date.

A second ionization gauge has been installed on Line 1 to monitor the tritium content of the preliminary outgas. Two additional furnaces for outgassing extraction furnace tubes are being installed in the can-opening room.

Temperatures of individual slugs during the extraction cycle are being studied in order to provide uniform heating of 5 slugs. At present only 4 slugs per run are being extracted. One experimental 5 slug run was made without difficulty.

Document HW-15210 describing the P-10 facilities and operation has been issued.

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Pile Technology Division

INVENTIONS

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.

WK Woods:bb

Signed W. K. Woods
W. K. Woods
Division Head



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Richland, Wash.
December 10, 1949

SEPARATIONS TECHNOLOGY DIVISION

NOVEMBER, 1949

VISITORS AND BUSINESS TRIPS

J. B. Work attended a National Air Pollution Symposium at Pasadena, Calif., from November 10 through 11.

W. L. Lyon visited the Los Alamos Scientific Laboratory from November 14 through 18 for 234-5 consultations.

F. J. Leitz, Jr. visited the Argonne National Laboratory for a Waste Disposal Committee Meeting on November 28 and 29.

R. H. Beaton attended a Redox Steering Committee Meeting at the Knolls Atomic Power Laboratory on November 30 and December 1.

ORGANIZATION AND PERSONNEL

Personnel totals in the Separations Technology Division are as follows:

	<u>October</u>	<u>November</u>
Administration	2	2
Special Assignment	3	3
Process Section	25	26
Development Section	95	92
Research Section	33	33
	<u>158</u>	<u>156</u>

Process Section: One Chemical Engineer was added as a new employee.

Development Section: Three Chemical Engineers were terminated, two on a temporary removal from the Hanford Works payroll because of being transferred on loan to the Knolls Atomic Power Laboratory, to assist in the operation of SPRU.

Separations Technology Division

200 AREAS PLANT ASSISTANCE**DECLASSIFIED**Canyon Buildings

The accountability run basis solution tank (6-3) at T Plant was recalibrated November 9, 1949. The calibration slope (pounds per inch) as determined by the recently installed manometer checked a water-filled manometer to 0.51%. The slope determined by the ring balance checked that of the water manometer to 0.02%. The standard deviation of the calibration points in the case of the process manometer was ± 6 pounds, whereas calibration points for the ring balance deviated by ± 56 pounds. The new slope (water manometer standard) was 1.53% lower than that of the original calibration. The new calibration, including the correction of the dip-tube heel for the specific gravity of the 6-3 MR solution, was put into effect and the use of the ring balance was replaced by the manometer starting with Run T-9-11-F-14. Similar changes were made at B Plant starting with Run B-9-11-F-1. Attention has been given to the effect of these calibration changes upon material balance of past and of future runs. The material balance at B Plant for the period including Runs B-9-04-B-5 through B-9-08-AW-1 was 100.4% while the material balance for approximately the same period at T Plant, including Runs T-9-04-F-4 through T-9-07-AW-1, was 98.3%. A material balance difference of 0.8%, which could be accounted for by the calibration differences between B and T, is well below this observed material balance difference of 2.1%. Other factors must be responsible.

The uranium heel was removed from dissolver 4-5L at T Plant in preparation for the test dissolving of short-term "cooled" material. No difficulties were encountered in this operation.

The B Plant Canyon Building has been adapted to "semi-parallel" operation. An Acid Wash Run processed prior to this change accumulated 36% of an average run. A second Acid Wash Run, processed to test the new equipment, accumulated an additional 3% of an average run, although initial indications were that the accumulation was greater.

Concentration Buildings

The first part of Production Test 224-T-13, aimed at shortening the metathesis time cycle, has been completed at T Plant. Ten runs were processed under this part with the metathesis volume reduced to 80% of present standards and with a portion of the metathesis wash waste recycled to the metathesis slurry and a portion to the routine waste rework. Product losses in the waste were not significantly affected. A time cycle of 12.1 hours was realized.

Tests have indicated that the bismuth phosphate by-product loss may be reduced to approximately 0.1% by means of controlled slow addition of the phosphoric acid required for precipitation. Decontamination through the Concentration Building was unaffected during these tests.

Purification and Fabrication Buildings

W. L. Lyon spent the week of November 14-18 at Los Alamos following the operations on the four test pieces forwarded by Hanford. His observations are recorded in a trip report, HW-15262. W. B. Kerr, who has been on loan to the

"S" Division, returned to the Technical Division November 28th and has been assigned to the 234-5 Plant Assistance Group. T. Nelson of the Metallurgical Section was assigned temporarily to 234-5 Plant Assistance, effective 11/25/49.

The 234 section of the run book has been revised to incorporate more efficient operation and control procedures. This was being typed at month's end for use early in December. The 235-A section of the 235 run book has been revised and will also be placed in use during December.

Conversions in Hood 8 have averaged 93% during the past month. Yields from Hood 10 have averaged 98.33% during the past month. The range of yields has been from 97.75% to 98.85%.

The Model 090 skates for future use in Hood 19 have been calibrated with lead as a stand-in material. Seven operations have been performed with lead and the weights of actual material required for their routine use have been established. Calculations have been made to determine the number of cycles required in Hood 26 for the 090 cores. Two Model 051 units which passed the electrolytic test upon removal from Hood 26 failed a later electrolytic test after some abrasion of the units had been performed to correct slight dimensional defects.

REDOX AND WASTE METAL RECOVERY DEVELOPMENT

Solvent Extraction Studies

Sixteen Redox solvent-extraction studies were completed during November, including eleven pulse column runs (IA, IB, and IC) in a 5-in. diameter, 28-tray pulse column. In addition, just following the above report period, the first RA-RC cascade study was carried out in 3-in. and 4-in. diameter columns to test the TBP (tributyl phosphate) waste metal recovery process for underground uranium. New information from these solvent extraction studies is summarized below:

- 1) Using 15.3 ft. of 1/2-in. Raschig rings in the 3-in. diameter RA Column extraction section and 10.6 ft. of the same packing in the 4-in. diameter RC Column, uranium losses were no greater than 1% of the feed U in the waste stream from each column (900 and 700 gal./(hr.)(sq.ft.), respectively, in the RA extraction section and the RC Column).
- 2) Studies reported last month using a 5-in. diameter pulse column operating as a IA simple extraction section have been extended to develop the following new information on flooding capacity and mass transfer at higher pulse frequencies, up to 200 cycles/minute (28 trays spaced 2 inches apart and perforated with 0.04-in. holes, 0.45-in. movement in the column/pulse, HW #1 Redox Flowsheet):
 - a) The previously reported flooding capacity of 1550 gal./(hr.)(sq.ft.), sum of both phases, at 52.5 pulse cycles/min. increased to a maximum of 2600 ± 200 gal./(hr.)(sq.ft.) at 90 cycles/min., and fell off again to 2000 ± 200 gal./(hr.)(sq.ft.) at 200 cycles/minute.

- b) Values of H.E.T.S., H.T.U., overall plate efficiency, and Murphree plate efficiency were not affected significantly by increasing the pulse frequency--all being approximately the same as reported previously for 52.5 cycles/minute.
- 3) Shakedown runs using the above 5-in. pulse column as a IB simple scrub column (EW #1 Redox Flowsheet, pulse amplitude approximately constant at 0.4 to 0.5-in. movement in the column) have demonstrated the following:
- a) The flooding capacity of 1800 ± 200 gal./hr.(sq.ft.), sum of both phases, at 49 pulse cycles/minute increased to a maximum of 3800 ± 200 gal./hr.(sq.ft.) at 122 cycles/min. and dropped off again to 3000 ± 200 gal./hr.(sq.ft.) at 153 cycles/min. The following performance data apply at the optimum throughput pulsing frequency of approximately 125 cycles/minute.
 - b) H.E.T.S. values of 1.5 to 1.7 ft., and H.T.U. ("over-all water-film") values of 0.4 to 0.5 ft. were each approximately 1/3 of the corresponding values for 1/2-in. Raschig rings, and showed practically no significant trend with volume velocity over a range from 400 to 3000 gal./hr.(sq.ft.).
 - c) Over-all plate efficiencies were approximately 10%, corresponding to Murphree plate efficiencies of 28 to 33%.
 - d) IBP uranium losses were 25 to 50 x $10^{-5}\%$ of the uranium in the IAF. To attain the Flowsheet IBP uranium loss ($2.5 \times 10^{-5}\%$), the "packed" height should be increased from 4.7 ft. to approximately 7 ft., providing approximately 4 more transfer units or 1.3 more equivalent stages.
 - e) Equivalent uranium processing rates covered a range from 1.2 to 8 short tons/24 hr.
- 4) Studies reported last month using the above unit as a 5-in. IC pulse column (EW #1 Redox Flowsheet except for no HNO_3 in the ICX) have been extended to study the effects of varying pulse frequency and amplitude, with the following significant results:
- a) At a pulse displacement in the column of 0.12 in. and 50 pulse cycles/min., the flooding capacity was less than 600 gal./hr.(sq.ft.).
 - b) At a pulse displacement in the column of 0.4 to 0.45 in., the flooding capacity increased from the previously reported value of 1400 gal./hr.(sq.ft.) at 50 cycles/min. to a maximum of 2000 gal./hr.(sq.ft.) at both 75 and 100 cycles/min. At 125 cycles/min. the effective capacity of the column was less than 1000 gal./hr.(sq.ft.), because of excessive entrainment of hexone phase with the ICU stream.
 - c) H.T.U. values were not significantly affected by amplitude but increased from approximately 0.7 to 0.9 ft. when the pulse frequency increased from 50 to 125 cycles/minute.

- d) The IC pulse column operated with 0.5% or less U loss over processing rates from 0.5 to 1.2 short tons of uranium metal/24 hr.
- 5) Completion of the 3-in. column IS rework studies (processing simulated aqueous rework from Redox, using 1/2-in. Raschig-ring packing) has indicated best uranium recovery (11% uranium loss; 3.5-ft. H.T.U. in IS extraction) at a volume velocity of 1930 gal./(hr.)(sq.ft.), which is 79% of the flooding capacity for this system.
- 6) Operation of 3-in. and 2-in. diameter glass columns as a IID-IIE cascade confirmed previous IA Column mass-transfer performance. During 72 continuous hours of operation, approximately 1 ft. of "crud" and emulsion built up on the column interface, but none appeared in the IIDU-IIEF pipe-line. Analyses indicated the "crud" consisted of U, 2% Si, and less than 0.1% Fe or Al.

Waste Metal Recovery Studies

Seven semi-works scale studies to prepare a solvent extraction feed (ISF) from simulated underground waste supernate were completed during the month by the sodium uranate process (EW-14879). New information from these studies is summarized below:

- 1) Removal of phosphate from the uranium has been satisfactory in all runs (U/PO₄ mole ratio in the ISF between 140 and 500 for all runs).
- 2) Uranium losses have been high (on the order of 20%), believed due in part to suspended fines lost in centrifugate and washes.
- 3) All runs except MW-6-SN have required at least some manual scraping of the centrifuge cake to effect complete removal. Superior handling properties of the cake formed during Run 6 is believed due to adopting new precipitating conditions (90°C. pptn., optimum excess alkalinity, cooling to 25°C. before centrifugation).
- 4) From the standpoint of best removal of phosphate and lowest uranium loss in cake-wash solutions, approximately 0.2 M NaOH represents the optimum concentration of wash solution.
- 5) Reducing the number of precipitate washes from 4 to 1 and of metathesis cake washes from 4 to 2 would increase the amount of uranium recycle by an estimated 50%.
- 6) Although actually carried out subsequent to the period of this report, one preliminary semi-works study using 0.01 wt. % "Igepon AP Extra" (surface-active agent) added to the digestion batch resulted in a significant improvement in the handling properties of the centrifuge cake.

Construction and Maintenance

The new 321 Building canyon air conditioning and ventilation system was put into operation on 11-18-49. Operation has been satisfactory generally, although some adjustment of air distribution and electrical controls is being completed. Work on the Scale-Up Inert Gas Generator is virtually complete.

Electrical circuits have been tested and are satisfactory. Remaining work consists of installation of a manometer and pressure switch and minor adjustments. A preliminary acceptance inspection of the entire C-331 Project, 321 Building Rehabilitation and Revisions, was made on 11-23-49.

The 300 p.s.i. Worthington Duplex pump for WMR centrifuge pressure sprays was installed and operated. Operation is not yet satisfactory, due to small quantities of solution handled. Revisions to Waste Metal Recovery equipment indicated as desirable or necessary as a result of initial runs either completed or in progress include: 1) decrease in agitation by cutting down on propeller size in B-6, 2) replacement of the centrifuge feed pump with a jet, 3) addition of heating coils to precipitator feed tanks, 4) installation of an additional adjustable pressure spray in the centrifuge, and 5) installation of an "in-line" after-cooler on the discharge side of the centrifuge feed jet. An incubating tank for preparation of sludge and supernate simulating actual waste conditions was also put into service. Six additional "Master" pump drives for Demonstration Unit Fisher pumps were installed, and the spare pumps have been received for installation. Necessary revisions for TBP runs in the Demonstration Unit were completed, including installation of jumpers and increase in flow control equipment capacity.

Winterization of the Scale-Up Tank Farm is nearly complete, with lagging and tracing repair, trench and heat exchanger controller covering, and bleeder-line installations covering the major sources of previous trouble. Several repairs and adjustments were required on the 5-inch column pulsing mechanism, including replacement of several bellows, installation of new springs, larger diameter push pins and longer Oilite push pin bushings. Replacement of a scarred shaft on the Scale-Up ACR pump was necessary, and the agitator shaft on the O-1 tank was replaced because the old shaft was slightly bent. Difficulties with contamination of weight factor and density manometer oil by hexone vapors has necessitated draining these manometers and cleaning and replacement with new oil. This condition has resulted since the installation of the inert gas system on the Scale-Up storage tanks.

Operations

Studies on Waste Metal Recovery by the sodium diuranate precipitation process continued in B-Cell equipment during the month. The studies made were pointed particularly towards improvement in centrifuge cake removal and elimination of uranium losses in centrifuge effluent. Mechanical changes previously mentioned resulted in little or no improvement, although use of the high-pressure spray and jet instead of a pump remain to be evaluated. Although the after-cooler has not been used, a decided improvement in cake removal was noted when the precipitation was carried on at 90°C. and the slurry was cooled to 25-30°C. in B-7 before centrifugation. Metathesis cake removal, when used, has been generally satisfactory, and filtration of the acid digestion liquor has improved considerably with the lowered pH (1.5) and increased digestion time. Equipment performance and control has been satisfactory on all runs made to date, although a few instances of gland seal leakage were noted. Over-all instrument control was satisfactory. However, in several instances it was necessary to operate one of the several controlled streams on manual control because of erratic behavior. In some cases this was due to faulty operation because of failure to keep head tanks full, but a few instances of failure in the recorder-controller reset mechanism were also noted.

Separations Technology Division

A special Dissolver Study being conducted for the Rala Group is currently in progress. The dissolver was charged with 280 pieces (1100 lbs. U) in addition to 317 lb. heel. This is approximately 2.45 times the normal 1/20th-scale dissolver charge. Caustic addition rate was cut from 5 lbs. to 1 lb. per minute during coating removal, but stripping was completed without difficulty. It is anticipated that the added surface during the second cut may result in a fairly "hot" reaction, although no difficulty is anticipated in its control.

Scale-Up studies throughout the month were devoted principally to 5-inch pulse column studies although four 8-inch packed column runs were made. The 8-inch column runs were routine, except for a pump failure due to a seized packing gland during one run.

Pulse column operation continued satisfactorily over a wide range of frequency, amplitude, and flow rate. Automatic flow control at all rates within the range of the equipment was excellent. The range of frequency and amplitude of pulsing during these studies taxed the pulse generating mechanism severely, and several bellows failed and had to be replaced, although only one run was interrupted from this source.

Equipment Development

Submerged Pump No. 2 (G.E. & C.L. turbine pump driven by vertical shaft guided by carbon-filled fluorothene process fluid-lubricated sleeve bearings) was removed from test operation in 2.0 M $\text{Al}(\text{NO}_3)_3$ solution after continuously operating for 4.85 months at 1750 rev./min. The only change in performance was a slight decrease of shut-off head from 18 to 16.7 psig. The sleeve bearings and journals exhibited a few score marks, but there was no significant reduction in journal diameter (.0005") and the bearing decreased in I.D. 0.0011" at the upper position and 0.0002" at the lower position. The impeller incurred a weight loss of 0.05%, a thickness reduction of 0.0005" at blades and 0.0013" at the wearing rings. The sealed ball bearing (thrust) was near failure, which may have been due to penetration of water vapor arising from the tank. It is planned to reassemble this unit and continue the life test at 3600 rev./min.

Submerged Pump No. 3 (Roth #147 turbine pump suspended from 10 ft. vertical torque tube and driven by a 3 H.P. motor through a graphitar bearing) was placed in operation on water to obtain hydraulic performance data. Other than readily corrected minor difficulties, the operation has been satisfactory. Shut-off head of 83 psig. has been realized. Operation at shut-off for three hours increased the system temperature 2°C.

The G.E. & C.L. submerged motor coupled to a turbine pump has operated at 1750 rev./min. for a total of 65 days (55 in 1.3 M $\text{Al}(\text{NO}_3)_3$, 10 in water). Continuous operation in 1.3 M $\text{Al}(\text{NO}_3)_3$ since modification is 36 days with no change in operating characteristics of 10 psig. head and 0.4 gal./min. rate.

The Peerless 4" LA centrifugal transfer pump with boron carbide seals has operated a total of 2.5 months. Total time of operation in 2.0 M $\text{Al}(\text{NO}_3)_3$ with a new seal is one month. The rate of seal fluid (water) leakage into the process stream has averaged 50 ml./day.

Separations Technology Division

Design of a fluid pulse generator (25 cu.in. displacement, 50-100 cycles/min.) from available materials has progressed to the estimate stage.

The hydraulic test stand circulating 2.0 M $\text{Al}(\text{NO}_3)_3$ shows that there is no significant discrepancy between the Fischer & Porter and Schutte & Koerting recording and controlling rotameter systems. The Fischer & Porter system has been in service for 5.5 months and the Schutte & Koerting for 1.4 months. Maximum deviation from control point has been 1% or less.

The Hammel-Dahl motor valve with carbon-filled fluorothene seat and Stellite plug gives no evidence of change in operability over 5.5 month operating period.

Production Plant Instrument Specifications Sheets have been reviewed and comments submitted.

The final lot of Schori flame-sprayed polyethylene-coated concrete blocks was tested for chemical resistance to 60% HNO_3 and 0.5 M HNO_3 in hexone. The coating was inert but pinholes allowed some penetration to concrete. Radiation exposure test of about 4×10^7 mr./hr. for 13 days had no effect. Samples of 1528 E Amercoat were evaluated but are not reported here, since the vendor advises it will not be available due to discontinuance of production of intermediate raw materials.

Super Filtrol, of 100-200 mesh, added in the amount 1.67% to dissolver solution and centrifuged at 2000 x gravity for 20 minutes, resulted in clarity of 87.5%. The clarified solution was heated at 100°C. for 1 hour with the formation of a precipitate determined to be primarily Ti and Si. Repeating the centrifugation operation on this solution resulted in clarity of 91.5%. One lot of 100-200 mesh material was digested with 15% HNO_3 for 1 hour. Employment as a scavenger demonstrated no gain in clarity of effluent stream compared to undigested material. Hydraulic tests of slurries of Super Filtrol in a pipe line viscometer revealed no scale-up factor between 1/2" and 1" IBP Line. The variation in viscosity with flow rate and composition was determined for slurries ranging from 2.0 to 3.2 weight ratio (water/Filtrol).

Erosion characteristics have been studied with a 3.0 GPM stainless steel jet pumping 1.67% slurry. In the accumulated 200 hrs. of operation no change of performance has been noted.

Process Chemistry

Semi-works production of ferrous sulfamate with new equipment employing improved agitation (sweep-type) has been followed and performance examined. Satisfactory operation was attained in two of the three batches prepared (preparation time of 4 and 9 hrs.). One unsatisfactory batch (30 hrs.) is attributed to low reactivity of powder iron (Baker and Adamson) which may have been exposed to air.

The physical properties of the solid phases occurring in the diuranate process have been examined. Photomicrographs of the Soda Salt I and metathesized cake at 500 and 1000 magnifications indicate a particle size of about 0.8 millimicron for the Soda Salt I and twice this for the metathesis cake. The

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apparent density of Soda Salt cake (700 G, 10 min.) was 1.4. Solids content was found to be 33.8 per cent. Two laboratory-scale runs of the diuranate process employing supernate (Section B of EW-14470) were made with good phosphate removal ($U/PO_4(M)$ in ISF 3.4 and 276) and low recycle - 6.0%. Studies on sludge processing were made employing material from the corrosion studies program. The results indicated very low solubilities in both 0.4 M and 0.9 M $NaHCO_3$. Analysis of the sludge revealed that only 20% of the uranium could have been present as the carbonate and phosphate. The remainder is thought to be a uranate. The composition of this latter material is believed to be non-representative, however, insofar as application to processing of underground stored metal waste is concerned.

Examinations of samples of TBP (tributyl phosphate) received in shipment of two 55 gal. drums indicates a good degree of purity.

SEPARATIONS PROCESS RESEARCH

Evaporation of Process Streams in TBP Process for Uranium Recovery

Experimentally, it has been found feasible in the TBP process to concentrate the first column waste to about one-half the volume of the uranium slurry leaving the storage tanks. The recovery of nitric acid during evaporation was found to be high if a high percentage of the waste stream was evaporated. Solids which formed during evaporation did not stick or cake and should be easy to handle in transfer of the residue to final storage. Only negligible decomposition of TBP was observed in the above evaporations, even when a considerable excess (second phase) of TBP - Deo Base was present at the start of the evaporation.

During the concentration of the product stream from the TBP process, the saturation amount of TBP initially present, 0.2 gm./liter, was completely recovered in the distillate with no decomposition and resulting contamination of the uranium.

Density and Viscosity of TBP - Deo Base Solutions

The density and viscosity of TBP - Deo Base solutions containing $UO_2(NO_3)_2$ and HNO_3 have been measured. From the point of view of density and viscosity, it would appear that the solutions encountered in the TBP process neither introduce sufficiently detrimental factors nor possess properties far enough removed from successful operating experience such that they cannot be compensated for in column design.

Batch Equilibrium Studies in the TBP System

A batch counter-current study with seven extraction, three scrub, and five strip stages was made on an acidified synthetic concentrated composite uranium waste solution with 15% TBP - 85% Deo Base as extractant, 5.0 M nitric acid as scrub, and water as strip. Flow ratios of scrub/feed/extractant/strip were 1/2/4/3. The feed composition was 0.376 M UNE, 0.314 M Na_2SO_4 , 0.284 M Na_3PO_4 , 3.19 M $NaNO_3$ and 3.00 M HNO_3 . The end streams at equilibrium showed uranium losses of 0.03% in the extraction column waste and 1.13% in the stripping column waste. The product stream analyzed 135.4 g/l UNE and 14.0 g/l HNO_3 .

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Further equilibrium contactings are being made on normal composite waste with various acid concentrations in both feed and scrub streams.

Pulse Column Studies with TBP.

Two one-inch diameter x 69 inches pulse columns were operated successfully in series on a synthetic normal composite metal waste feed with 15% TBP - 85% Dec Base at 800 gals./sq.ft./hr. total throughput. Uranium losses of 0.3 to 1.5% were noted in the extraction column and of 0.1 to 5% in the strip column.

Effects of Butyl Alcohol and Acid Butyl Phosphates on Extraction

The distribution ratio of Pu(IV) in 5 M HNO₃ is reduced but slightly by the presence of 1% by volume of butyl alcohol in 15% TBP - 85% Dec Base. However, the presence of 1% by volume of an equimolar mixture of mono- and di-butyl acid phosphate increases the distribution ratio of Pu(IV) in 3 M HNO₃ from 4.6 to ca. 250 in the absence of UNH, and from 0.29 to 1.8 in 0.4 M UNH. Such an increase would interfere with the plutonium decontamination desired in metal recovery, but is readily avoidable since (a) Pu(IV) could be reduced or complexed into the aqueous phase, (b) hydrolysis of TBP to butyl acid phosphate would not ordinarily occur, and (c) any butyl acid phosphate which might be present could be removed by an alkaline wash of the solvent.

The distribution ratios of U(VI) from 2.5 M HNO₃ into 15% butyl acid phosphate - 85% CCl₄ are higher than those into 20% TBP - 80% CCl₄ by a factor ranging from 2 to 10 as the UNH concentration decreases from 1 to 0.02 M. This increase in U(VI) and Pu(IV) distribution ratios may prove of importance in a Purex-type process.

Decontamination from Plutonium in the TBP Process

The complexing action of fluosilicate on Pu(IV) may permit plutonium decontamination without resorting to the use of ferrous sulfamate. The presence of 2.5 g/l of ammonium fluosilicate resulted in Pu(IV) distribution ratios from 3 M HNO₃ into 15% TBP - 85% Dec Base ranging from 0.12 in the absence of uranium to 0.0036 when the organic phase was 77% saturated with uranium. These Pu(IV) distribution ratios are 40 to 80-fold less than those obtained in the absence of fluosilicate, other conditions being the same. The dependence of Pu(IV) complexing on fluosilicate concentration is less than first order; there is an inverse first order dependence on nitric acid concentration. A concentration of 1 g/l of sodium fluosilicate has a negligible effect on the distribution ratio of uranium.

Ruthenium Tetroxide Distillation

Continued work with 0.03 M Co(NO₃)₂ catalyst has demonstrated its feasibility when employed with 1.5 wt. % or more of ozone in the gas stream and an ozonization period of six hours. Under these conditions the hexane-soluble "Species A" appears to be completely removed and subsequent extraction and two scrub stages gives an over-all D. F. greater than 10⁵. Control runs in which ozonization was omitted gave 500-800.

In view of the above favorable results, it is recommended that in the Redox Flowsheet 0.03 M AgNO₃ be replaced with 0.03 M Co(NO₃)₂ to avoid chloride precipitation.

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Use of 0.01 M $\text{Co}(\text{NO}_3)_2$ as catalyst has given unsatisfactory results, comparable to those obtained with no catalyst present. Removal of Species A was incomplete even after seven hours ozonization, thus low decontamination was obtained in subsequent solvent extraction.

As the ozone concentration is reduced, the rate of removal of the critical Species A is markedly reduced. For example, with 0.8% ozone in air and 0.03 M $\text{Co}(\text{NO}_3)_2$ catalyst, removal of Species A was incomplete after seven hours and extraction and scrubbing thereafter gave an over-all D. F. of only 5×10^4 . The presently specified Redox ozone concentration, 2% by wt., is likely to prove no more than adequate if a short ozonization period of four hours or less and an over-all first cycle D. F. of 10^5 for ruthenium are assumed as dual objectives.

Variation of the concentration of dichromate in the feed between 0.02 M and 0.1 M did not have any appreciable effect on the extraction-scrub data over a period of five days.

The extraction coefficient remained constant when acid-deficient, ozonized dissolver solution was contacted with hexone from five to sixty minutes.

The aging effect has again been noted with dissolver solutions sampled in stainless steel samplers and then transferred to glass for storage. One sample exhibited a hitherto unobserved behavior in that, after 30-40 days, 6-8% of the ruthenium was converted to a variety of Species B which was essentially non-volatile on extended ozone treatment. This behavior did not constitute a process disadvantage, however, for the non-volatile residue exhibited the lowest distribution ratios yet observed for ruthenium, D. F.'s of $1.7 - 2.7 \times 10^4$ being obtained in one extraction and two scrub steps alone.

Head-end Scavenging

Data available do not show any marked dependence of the amount of zirconium scavenging by Filtrol as a function of the pH of the solution. The data do suggest, however, that Filtrol scavenging may be more efficient if acid deficiency is avoided in the dissolving operations. Adjustment of acidity after dissolution was completed gave less definite trends.

Preparation of Solvent Extraction Feed from Metal Wastes

Photomicrographs of sodium uranate slurries indicate that the increased settling rate of those containing Igepon AP is attributable to agglomeration, not coalescence, of the micro-size particles. The effectiveness of IAP in permitting more rapid centrifugation of sodium uranate was demonstrated with a 5-in. solid bowl centrifuge operating at 300 G's with a 3-minute hold-up time. Sodium uranate obtained in this manner from a simulated composite T supernate was treated by the standard procedure omitting all washes but one, following metathesis. The uranium recycle from phosphate clean-up was only ca. 13%, indicating the feasibility of reducing the number of washing operations and thus substantially lowering the cell requirements for the uranate process.

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The rates of phosphate clean-up from 1 M URE - 1 M NaNO₃ solutions containing 0.1 M Na₃PO₄ and having varying acidities were investigated by heating at 95°C. In general, the phosphate solubility increased with increasing acidity from -0.4 to +0.4 M, with the exception of a superimposed decrease in solubility at zero acidity. After two hours at 95°C., the phosphate concentrations of the 0 and > -0.2 M HNO₃ solutions were tolerable for a -0.3 or +0.3 M HNO₃ ISF. The uranyl phosphate precipitated at zero acidity was coarser and more readily centrifuged than that obtained at > -0.2 M HNO₃, however.

Coupling of Redox with Metal Production

Cerium (IV) phenylarsonate was used as a stand-in to study the thermal decomposition of plutonium (IV) phenylarsonate for conversion to the oxide and separation from arsenic. After drying the cerium (IV) phenylarsonate at 110°C., it was ignited to constant weight in a stream of oxygen at 580° for two hours and 630° for two hours. The ignition residue contained 3.1% arsenic. Upon treating this residue in hydrogen at 600°C. for three hours, a further weight loss was observed. No further loss in weight was observed upon igniting again in oxygen. Spectrochemical analysis of the final product indicated 0.01% to 1% arsenic, with preference toward the higher figure. The weight loss on hydrogenation was greater than could be accounted for by the decrease in arsenic content. Assuming the final product to be essentially CeO₂, the weight loss obtained indicated that the initial precipitate was Ce(C₆H₅AsO₃)₂·2H₂O.

Recovery of Plutonium from Crucible and Slag Wastes

A number of preliminary tests have been made to study the chemical feasibility of a number of treatments of crucible and slag wastes to recover the plutonium which is otherwise lost. Acids slowly dissolve the crucible material. Fusion with KHSO₄ gave a product which was 95% soluble in water and fusion with NaOH yielded a product soluble in nitric acid.

Crucible and slag fragments of a UF₄ reduction were studied briefly. Leaching of the fine material (mainly slag) with 1 - 2 M HNO₃ appeared to result in elution of most of the uranium and dissolution of about one-half the slag. Dissolution in HNO₃-H₃BO₃ mixtures offers some promise. Fusion with a large excess of KOH gives a clear solution at 550°C. and the cooled material is 90% soluble in dilute acid.

Treatment of 200 Area Non-uranium Wastes

Ion-exchange decontamination of the 221 Building cell washings (5-6 waste) is under investigation. Following the passage of 40 resin bed volumes of this waste through a cation-exchanger resin, Dowex-50, its beta content was reduced 8-fold to ca. 20 microcuries/l; and its alpha content, 50-fold to ca. 0.05 micrograms Pu/l. The anion-exchanger resin, Dowex A-2, shows promise of giving an additional ca. 5-fold beta decontamination.

Scavenging 224 Building crib waste with Ca⁺⁺, Cu⁺⁺, and Fe⁺⁺⁺ on the alkaline side produced substantial decontamination. Precise determinations pend development of appropriate counting techniques for this high salt content solution.

Catalytic Decomposition of Hydrogen Peroxide in Peroxide Supernatants

Approximately a 40% reduction in recycle volume of the solution from CT-1 to the 224 Building can be realized if the excess hydrogen peroxide in this solution is destroyed by its self-oxidation and reduction according to the reaction



Conditions have been determined under which this reaction proceeds at a rapid, yet non-hazardous, rate at a platinum black surface. The decomposition of a 2 M hydrogen peroxide solution, 1 M in nitric acid, was carried out in a stainless steel vessel at an initial temperature of 55°C. using 0.077 cm² of platinum gauze catalyst per ml. of solution. Approximately 97% of the hydrogen peroxide was destroyed in 12 minutes. Poisoning by some constituent(s) of stainless steel appears to effect the catalyst activity so that the catalyst may have to be regenerated frequently. Regeneration may be accomplished by alternatively making the catalyst an anode and a cathode in dilute sulfuric acid.

The regeneration procedure described above may prove objectionable for plant operation. In that event, thermal decomposition of peroxide catalyzed by the surface of the stainless steel vessel may prove to be an adequate substitute. A preliminary experiment in a stainless steel vessel at 60° C. gave a half-time for decomposition of ca. 16 minutes, suggesting that complete decomposition might occur in a few hours. No reaction was observed in glass equipment. Considerably more work is necessary before the feasibility of this method can be established.

234-5 PROCESS DEVELOPMENT

Studies of the precipitation of plutonium peroxide from P-1 solutions to obtain optimum conditions of striking the precipitate were continued. Plutonium peroxide was precipitated from a solution whose final acid strength was 3 normal, and at final peroxide concentrations of 12%, 16%, and 20%.

From a comparison of the new data obtained, it appears that higher peroxide concentration must be used when the strike is made at higher acid concentration, if the loss in yield of precipitate is to be minimized.

The solubility of the plutonium peroxide in 1 N nitric acid does not appear to be a function of the acid strength of the solution from which precipitation is made. Data previously reported are supplemented with the results obtained at 3 normal acid concentration in forming this conclusion.

The effect of strike temperature on the yield of plutonium peroxide was studied over the range from 6°C. to 35°C. The runs were made at a final hydrogen peroxide concentration of 16% and acidities of 1.2, 1.8, and 2.4 normal. The following experimental procedure was used:

- a. Adjust initial acidity of the P-1 solution to give desired final acid strength.
- b. Adjust initial volume of solution to give desired final volume after the addition of peroxide.

- c. Heat solution to 55°C. and add 50% hydrogen peroxide to give a 1% hydrogen peroxide solution.
- d. Maintain temperature of 55°C. for twenty-five minutes and then cool to strike temperature.
- e. Add 50% hydrogen peroxide over a twenty-minute period to give a 16% peroxide solution.
- f. Digest the slurry at strike temperature for one hour.
- g. Allow precipitate to settle for ten minutes.
- h. Wash precipitate twice with 25 ml. of 1 N nitric acid. Each wash consists of a two-minute contacting period and a ten-minute settling period.
- i. Transfer precipitate to a 5 ml. graduated cylinder and measure volume of precipitate after standing for one hour.

From an examination of the data obtained, it was apparent that lower yields are obtained when the strike temperature is decreased. Whether the lower yields are a result of slower precipitation or of increase in solubility will be determined.

The apparent bulk density of the plutonium peroxide formed at 3 normal acid and 12% final peroxide concentration was 0.32 gm./ml. At 16% and 20% peroxide the values were 0.37 and 0.15, respectively.

Equipment to carry out the reduction of uranium tetrafluoride on a 500-gram basis, which is required for the evaluation of calcium to be used in the 234-5 Building, is being set up in the 231 Building. It will be necessary to do this work here until space becomes available elsewhere.

STACK GAS DISPOSAL

The routine monitoring measurements obtained at both sand filters revealed the continuance of normal operation. The T and B Plant units have been in operation for 13-1/2 and 13 months, respectively. During this time, there has been no detectable increase in the pressure drop across the sand bed or significant decrease in filtration efficiency or ventilation air flow. Weekly efficiency determinations and periodic surveys of the ventilation air flow will be continued, but future reports will note only significant variations and developments in the performance of the filters.

The study of the filtration efficiency and pressure drop characteristics of the No. 55 and "AA" Fiberglas has been continued. A filter unit, with bed depths of 12 and 24 inches of No. 55 Fiberglas at a density of 3 lbs./cu.ft., was tested over a range of 2 to 100 ft./min. The results are promising and tend to substantiate the prediction that a fiberglas filter can be designed to operate at greatly increased flow rates (50 to 100 ft./min.) with high efficiency and an acceptable pressure drop. No. 55 Fiberglas, at a packing density of 6 lbs./cu.ft., and "AA" Fiber will be similarly tested. Permeability tests were made with these media over a velocity range of 10 to 120 ft./min. The data revealed that laminar flow is present throughout this flow range.

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The presence of ammonium nitrate in a "AA" Fiberglass filter used in recent dissolver off-gas studies has been established. Residual nitric acid was held within the system after metal dissolution and the evolution of ammonia during coating removal resulted in the formation of the salt. This deposition might appreciably shorten the useful life of the projected filter. A study into the chemistry of the coating removal process with the object of eliminating or minimizing the ammonia evolution has been proposed. By-passing the filter during coating removal is another possible method of correcting the situation. Studies will be continued in an attempt to obtain more quantitative information as to the amount of salt formation that could be expected.

Silver Reactor No. 9 was operated during the sixth and seventh metal dissolutions for the unit. The I^{131} removal efficiency of this equipment has remained in excess of 99%. Additional determinations will be made with this apparatus to observe iodine removal efficiency under continued operation.

The series of aspirators suggested by Dr. T. F. Hatch was operated on the ventilation air stream in an attempt to obtain particle size distribution data. As the previous data indicated a large portion of the aerosol to be water soluble, kerosene was employed as the collecting liquid. Slides have been made of the solutions for microscopic examination and radiographs.

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.

<u>Name</u>	<u>Title</u>
R. L. Moore	The Use of Fluosilicate to Improve Plutonium Decontamination in the TBP Process for Metal Recovery.



 R. H. Beaton, Head
 Separations Technology Division

Date: December 1, 1949

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HM-15267

METALLURGY & CONTROL DIVISION

NOVEMBER 1949

VISITORS & BUSINESS TRIPS

12-10-49

The Division had no off-site visitors during November.

Business trips to other locations were as follows:

C. G. Stevenson spent November 1 at Los Alamos Scientific Laboratory attending a meeting of the Technical Information Panel. As noted in the October Report, October 31 was spent in this meeting also.

R. H. Moore spent November 1 discussing gas sampling and analysis procedures with representatives of the Air Reduction Corporation in New York City. He visited Brookhaven National Laboratory on November 2 to discuss instrumental methods of analysis.

A. H. Bushey spent November 7 at the University of California Radiation Laboratory discussing analytical procedures relative to the alpha energy analyzer, mass spectrometer and fission counter. He accompanied Schenectady recruitment personnel on November 8-12 in visits to the California Institute of Technology, the University of Southern California and the University of California at Los Angeles recruiting PhD personnel.

R. Ward visited Battelle Memorial Institute on November 7 to discuss metallurgical development programs. He spent November 8-9 at Knolls Atomic Power Laboratory, November 10 at Oak Ridge National Laboratory, and November 14 at Argonne National Laboratory, inspecting and discussing metallurgical facilities and programs. He also visited Carnegie Institute of Technology on November 11 to recruit metallurgical personnel.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	<u>October 31</u>	<u>November 30</u>
Metallurgy Section	37	38
Analytical Section	331	341
Statistics Group	13	13
Information Group	57	57
Administrative	<u>3</u>	<u>3</u>
Totals	441	452

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The Analytical Section employed four non-exempt chemists, four laboratory assistants and three clerical personnel. One non-exempt chemist was transferred from this Section to the Design Division, and two laboratory assistants were transferred to the Pile Technology Division. Three laboratory assistants and one stenographer transferred into Analytical from Community Division, H.I. Divisions, Pile Technology Division and Services Division, respectively. The Metallurgy Section added one exempt metallurgist by transfer from the Schenectady Works Laboratory. There were two terminations.

METALLURGY

Uranium Billet Casting

Because of more urgent problems, the ferrous molds previously prepared for use in the melt plant have not been tried.

All efforts to effect a marked reduction in casting furnace pressures have been unsuccessful; the minimum furnace pressure obtained in production casting has been 150 microns.

Hanford cast billets show no significant improvement with respect to density. A test is being conducted to determine whether density may be raised by modification of the present melting and pouring techniques. This test provides for checking the density and the carbon content of billets cast after retention of the molten uranium in the crucibles for varying lengths of time prior to pouring.

Test Pile reactivity tests on uranium produced by Mallinckrodt from "old" and from "new" orange salts, and converted into rods in the August-September rolling at Simonds, show no significant difference between the two types of metal. Previous comparisons of similar metal produced at Electromet had shown a reactivity difference of questionable significance in favor of the "new" salt.

With the filter column packed with Fiberglas, the first test run of the crucible burnout station air filter mock-up installation indicated a 78.2% removal of radioactive particles. During the second trial run, a motor burned out on one of the vacuum units before completion of the test. Repairs have not been completed.

Uranium Rolling

Experimental data on the roll pressure required in rolling 1.55 inch diameter cast uranium at 300 and 600° C was obtained from Battelle. The roll separation force at 300° C is from 3 to 5 times that observed at 600° C. From these data, Project Engineering calculated that the average deformation strength in rolling at 300° C varied from 44,000 psi in the first passes to 88,000 psi in the final pass (90% total reduction). The Trinks method of determining contact area was used in these calculations.

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Slug Canning

A comparison of the total tin content of slugs canned in an Al-Si bath of normal tin concentration against those canned in a bath with greater than normal tin content (October 5 production containing 0.65% Sn) indicated an average of about five times as much tin in the latter as in the former (8.23 vs. 41.13 mg/slug). This is thought to support the decision that the approximately 980 slugs canned under these abnormal conditions are not satisfactory for pile charging, and should be recovered.

Equipment for dipping four slugs at a time in the bronze bath was put into use by the P Division on the canning line in Bldg. 313 late in the month. This allows bronze bath immersion time to be increased, thereby obtaining more assurance of complete structural transformation. It also allows overall production rate to be increased, with bath temperature (and maintenance cost) subject to reduction.

Using the agitation conditions imposed by the present four-at-a-time bronze dip procedure, a number of slugs were canned to determine the minimum time in the bronze bath required for complete transformation at a series of temperatures. Metallographic examination indicated that times of were required for bronze bath temperatures of respectively. A sample dipped for showed no noticeable increase in grain size over that of production slugs dipped for , minimum.

A study has been initiated to determine whether a fluoroscopic method could be used to check canned slugs for aluminum-silicon penetration if the density of the Al-Si to x-rays is increased by lead additions. Calculations indicate that the method has possibilities with 1 to 3 percent lead in the Al-Si. Data on the solubility of lead in Al-Si are being obtained.

A test, using a lead heel overlain with a tin-bearing Al-Si layer in a production canning furnace, was run to clarify certain anomalous data obtained in previous experiments dealing with removal of tin from scrap Al-Si. The principal objective is to determine whether the indicated removal of tin from the Al-Si is accomplished through simple partition of the tin between the lead and Al-Si phases, or whether it is accomplished through conversion of the tin into an oxide. Analytical results are pending.

Induction Heating Experiments (P.T. 313-109-II)

The remainder of the canning scrap from the gamma extruded and alpha rolled metal induction heated in rod form for P.T. 313-109-II was sectioned and examined after macro-etching. The grain size of the gamma extruded metal varied from about 0.090 - 0.200 mm. near the surface to about twice this size at the center. There was less variation in the grain size of the alpha rolled metal, the grain size ranging from 0.150 mm near the surface to 0.200 - 0.003 mm at the center. Two alpha rolled slugs cut from the lead ends of the induction heated rods contained a cone of untransformed metal which amounted to approximately 3.5 percent of the total slug volume. A similar untransformed area was found in an alpha rolled slug cut from the butt end of one of these rods.

X-ray data on the same material confirmed the presence of untransformed metal in alpha rolled slugs from the lead ends of the rods; otherwise both the gamma extruded and alpha metal had a random orientation after induction heat treatment, as previously reported. This means that some of the alpha rolled slugs machined from the ends of the rods and canned for pile loading contained untransformed metal.

Uranium Alloys

Battelle continued their preparation of uranium-chromium alloys for Hanford study, but made little progress because of their primary emphasis on low temperature rolling studies.

Dilatometry

Additional tests have been made on the slug dilatometer constructed to ascertain whether expansion could be used to check slugs for completeness of transformation. Tests were run in a 150° C oil bath using both bare and canned slugs. Transformed and untransformed samples were obtained for each; "as machined" and stripped triple-dip slugs for the bare tests, lead dipped and triple-dipped canned slugs for the canned tests. In both instances a difference in the expansion of the untransformed and transformed material was easily discernible, and varied in extent from 3 to 6 thousandths of an inch. This amounted to one quarter of a revolution of the 10 thousandth dial gage used for the tests.

Check dilatometric runs on the duplexed uranium samples (metal gamma extruded, and then alpha rolled various amounts) show clearly that the alpha coefficient of expansion in the rolling direction decreased as the percent reduction in rolling increases. Values varied from $16.0 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$ for a 15 percent reduction to $9.8 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$ for a 30 percent reduction. For comparison, the coefficient of randomly oriented uranium is 16 to 19 $\times 10^{-6} \text{ } ^\circ\text{C}^{-1}$, while that of metal alpha rolled 88 percent is approximately zero.

Radio-Metallurgy

Preliminary plans have been completed for changing the layout of equipment in the 111-B Bldg. These include the design of proper storage facilities for radioactive samples and the installation of a mock-up cell. The storage of samples will be accomplished by modifying the existing water tanks so that enclosed vertical tubes will hold the samples on designated shelves. This system will provide easy access, safe handling, and good accountability.

A rotary fine grinding machine has been used and appears promising for the grinding of samples of aluminum and steel through 4/0 paper. It has also been established that the type of equipment used by the Instrument Division for polishing glass will provide a suitable metallographic polish and is suited to remote manipulation.

The first experimental low-level cell has been constructed, and the installation of proper optical, lighting, and handling devices to operate a hardness tester are progressing.

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Three slugs from tube 2661-F were inspected in the 105-F Bldg. viewing pit. The rupture, previously reported to be present on one slug, was not observed. Since relatively high polonium contamination was present in water samples taken from the 2661-F pigtail, the possibility of bismuth being the source of the contamination is being investigated. There appears to be no definite evidence that a slug rupture has caused the contamination.

Shielding investigations in connection with the KAPL 101 test (Be creep) have indicated that the maximum thickness of shielding required to reduce the radiation from samples of Al, Al-Mg, Pb, and Mg by a factor of ten is as follows:

<u>Shielding Material</u>	<u>Inches of Shielding</u>
Lead	1.75
Steel	2.76
Lead-glass	4.8
Aluminum	7.0
Water	19

Decay studies of these samples are being continued.

A hardness survey on samples from process tube 1884-F was run but the data have not yet been analyzed.

Design considerations for the intermediate level cell have been completed to the point of preparing detail drawings on which preliminary bids may be invited.

P-10 Alloy

Alloy production figures for November may be summarized as follows:

	<u>Number</u>	<u>Approx. wt. (lbs.)</u>
Total billets cast	19	749
Acceptable billets produced	18	722
" " extruded	19	688
Slugs machined	590	298
Slugs canned	554	280

Canned pieces were undergoing inspection at the month end. Plans for another extrusion run at Detroit in December are underway.

Rods from 19 billets of P-10 alloy extruded at Detroit on November 11 were received and are being machined into slugs. Possibly due to a change in the method of analyzing for hydrogen content, this shipment of alloy appears to contain more dissolved hydrogen than normal, despite precautionary procedures. Arrangements are being made to permit closer temperature control of the melt, so that hydrogen content may be decreased through extended retention time

in the crucible without causing undue volatilization and loss of the lithium component.

Redox Corrosion Testing

Most of the work on the corrosion of mild and stainless steels exposed to Redox streams has been completed. Reports, "Corrosion Rates of Mild and Stainless Steel Exposed in Redox Stream IAW (ANL June 1, 1948 Flowsheet)," HW-14923, and "Corrosion Tests of Austenitic Stainless Steels in Redox Streams (ANL June 1, 1948 Flowsheet)," HW-14641, summarize this information. The corrosion investigation of the Redox Pilot Plant Equipment at O.R.N.L. has been reported in HW-14955.

Samples of SAE 1010 mild steel coated with Amercoat, Prufcoat, and Ucilon and exposed at 170° F to neutralized IAW-IDW (pH 10) and to neutralized-concentrated IAW-IDW (pH 11.2), were inspected November 11 after completing a one-month exposure period. There was no apparent change in condition of the samples coated with Amercoat in either case. Samples coated with Prufcoat exhibited softening, as has been previously reported. This is apparently a temperature effect since the coating becomes brittle on cooling to room temperature and tends to shrink. The Prufcoat samples exposed to neutralized IAW-IDW (pH 10) failed; a similar sample exposed to neutralized-concentrated IAW-IDW (pH 11.2), although in poor condition, was returned for a three-month exposure period. Both samples of Ucilon showed marked discoloration but no bare metal has been exposed. These samples also were returned for a three-month exposure period.

Boron carbide materials, as Peerless & GE-CL bearings, were exposed to IAS, IAX (HW-1) and ISF for 6 weeks under static, room temperature conditions without undergoing any significant changes. These tests have been discontinued, and the materials considered acceptable from the corrosion standpoint.

Miscellaneous

The damping factor was measured on "as drawn" and alpha annealed uranium wire between room temperature and 600° C. For drawn wire the factor passes through a maximum at 400° C, while with annealed wire a maximum was obtained at 300° C. At these temperatures the value of the damping factor is about twice that of aluminum.

As of November 20 Minor Construction estimated that Bldg. 3730 was 73 percent complete. Wiring and the installation of equipment and exhaust facilities constitute most of the work still to be done.

All of the tests in which potentials were applied between combinations of 2S aluminum, 72-S clad process tubing and T-347 stainless steel, have been completed. Severe corrosion, which included pitting and the formation of corrosion products, was observed along with appreciable weight changes. In general, the anodizing reduced the total corrosion, but pitting became more pronounced. The surface areas surrounding the pits were unchanged in appearance. It was noted in these tests that there was appreciable attack at the cathodes.

Metallurgy & Control Division

DECLASSIFIEDANALYTICAL CONTROLWork Volume Statistics

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

	<u>October</u>		<u>November</u>	
	<u>Samples</u>	<u>Determinations</u>	<u>Samples</u>	<u>Determinations</u>
Routine Control - 200	3178	7806	3225	8586
Routine Control - 300	674	1403	751	1598
Water Control - 100, 700	916	2567	692	2772
Redox Program Analyses	2707	6140	2786	5810
Process Reagents	1182	2147	1345	1866
Essential Materials	94	459	191	1064
Special Samples	2404	6055	2316	5976
Stack Gas Filters	39	153	43	48
Totals	11194	26730	11349	27720

100 Areas Water Control

Evaluation of the data collected by analysis of the cotton plug filters installed in the Bldg. 190 tank outlets and in the filter effluent lines indicates that the manganese concentration in process water varies directly with changes in activity found at the retention basin. The manganese found on these filters is equivalent to 0.003 to 0.01 parts per billion in the water. While these values are of little value as a measure of total manganese concentration, they do permit changes in manganese content to be detected readily.

200 Areas Control

The precision of the analytical results of the canyon starting solution (6-3-MR), the Isolation Bldg. starting solution (P-1), and the final product solution (AT) may be summarized as follows:

Sample	Precision - %		
	<u>Expected</u>	<u>October Average</u>	<u>November Average</u>
6-3-MR	1.58	1.51	2.15
P-1	2.39	2.37	2.16
AT	1.98	1.70	1.79

Routine quantitative assay of the Concentration Bldg. (224) process reagent samples was discontinued in both plants on November 5, at the request of the S Division. Samples of such materials will be taken as usual, but no quantitative analyses will be made unless difficulties develop through subsequent processing of the runs using these reagents.

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Reporting of spectrographic analyses on button and cast metal samples obtained by using both the Carrier Concentration and the Cupferron Copper Spark methods was started at Bldg. 234-5 during the month. Previously results were reported using only the Cupferron method, which failed to detect some constituents with maximum accuracy. Analytical reports now are based on the most accurate determination from both methods.

300 Area and Essential Material Control

Sampling methods used for essential materials in the 100-H Area were reviewed during the month. A recommendation was made to correct the sampling of coal being received in that area.

A significant increase in the number of analytical samples received from the 300 Area canning operation has been noted since the P Division's change to more frequent analysis of the aluminum-silicon baths. Metallurgy Section studies of methods for the recovery of aluminum-silicon scrap have also been responsible for increased analytical load in the spectrographic laboratory.

The investigation of methods used for the sampling of 300 Area process wastes has been completed, and reports on proposed revisions of current methods are in process.

Methods Adaptation

Two members of the Methods Adaptation group were assigned to the 234-5 analytical program to review procedures and equipment used and make recommendations for improvement. Several modifications were made in the cupferron copper-spark spectrographic method to reduce contamination and improve the removal of plutonium prior to the spectrographic analysis. A magnetic stirrer which permits stoppering of the flask during the stirring operations was substituted for the motor driven platinum stirring rod. The hydroxylamine and quartz distilled water were combined before addition to eliminate one step in the method. Other changes in reagents preparation and equipment are being made.

In conjunction with the Analytical Research Group, a detailed listing of the activity (in mrep/hr) of all required Rala samples was submitted to the Experimental Shops as a basis for the design of the Rala laboratory and associated analytical equipment. A description of the proposed methods and the equipment required was included.

A study of the precision and accuracy of the determinations of UH by calculation from the specific gravity obtained by the falling drop technique was made. Two standard samples were used and precisions (99% confidence level) of ± 0.0008 and ± 0.0003 for an individual observation were obtained. The concentration of UH calculated from the specific gravity had a precision of $\pm 0.22\%$ and $\pm 0.18\%$. The accuracy of the method observed in this test was biased due to evaporation of the solution during the experiment, but in normal operation an accuracy of ± 4 g/L is expected.

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Laboratory Equipment Design

Three work requests were received and one was completed by the design group. A review of the backlog of previous requests was made, and seven were returned to the groups concerned for reconsideration. The present backlog of incomplete requests is eleven, and represents an estimated 1600 man hours.

The development of the gloved box for use in the "cupferron" extraction procedure is complete and this unit is presently ready for fabrication. Several modifications of equipment have been made, and a twenty-seven place magnetic stirrer will be incorporated in a special sample positioner. The completed gloved box unit will simplify the analysis and increase the volume of work that can be completed.

During the month, design of the internal fixtures for two junior caves has been completed and initial work on two others was started. This work has been done in cooperation with the Chemical Research Section by two engineers who have been assigned to their problems. Effective December 1 these men will be reassigned to the Rala design program.

The design group has accumulated all information available concerning sample sizes, shielding requirements, proposed analytical methods, correlated designs of caves or cubicles, etc., that are pertinent to the Rala problem. A tentative layout of major laboratory equipment has been made for use in drafting the specifications for the Rala laboratory. Additional personnel are being assigned to this problem for making detail designs of equipment so that test units can be built and assembled.

Machine Shop

The shop group received 59 work requests for fabrication of experimental units; 54 requests have been completed from these and requests received during October. It is estimated that incomplete requests represent 500 man hours.

Units of special interest completed during the month include a scale model junior cave, remote control stirrer, micro-buret stirrer, and a multiple-place magnetic stirrer.

Glass Shop

A total of 113 work requests were completed by the glass shop. Incompleted requests represent approximately 150 man hours. Several special equipment pieces involving work on large and heavy pieces of glassware were fabricated at the request of the S Division and 200 Area Plant Assistance Groups; these parts were required for immediate replacement, due to breakage, and the time required for new units to be received from outside vendors was not satisfactory.

Oxygen and hydrogen manifolds were installed to furnish a more satisfactory gas supply for present needs. Work is in progress on the proposed gas mixing system which will incorporate the hydrogen manifold.

Metallurgy & Control Division

DECLASSIFIEDSpecial Hazards Control

As recommended in Special Hazards Investigation #125, a truck was assigned to the Analytical Section (on November 30) for use in the transfer of radioactive liquid wastes from the 300 Area to the 200 Area. Transfer boxes and trays designed for mounting on this truck are scheduled for installation early in December. Specially designed waste containers to be used in this waste transfer are nearing completion, and will be distributed to the laboratories involved as soon as received.

A "stopper remover" for the 1 ml. volumetric flasks used in the 234-5 laboratory was developed, and a model fabricated in the Experimental Shop. Additional units will be fabricated for use in other laboratories where similar hazards are encountered. This is in accord with the recommendations of the committee investigating the injury in which an employee received a small cut while attempting to remove a frozen stopper of this type with tongs.

ANALYTICAL RESEARCHRala

The equipment and space requirements for the Rala spectrochemical facilities have been established and described in document HW-15079. In order to aid in the design of shielded and remote control facilities, preliminary calculations of shielding requirements have been made. Further development of analytical procedures has shown that the concentration of lead expected in the Metathesis Cake Solution is not sufficient to interfere with the T. T. A. procedure for determination of plutonium.

Redox and Metal Recovery

The observation that cerium accompanies ruthenium in the direct reduction method for determination of the latter has initiated further experiments; these have shown that the interference may be eliminated by the use of a cerium (IV) hold-back carrier.

The silica contents of two current metal waste solutions have been determined by a procedure that involves a prior separation of silica as silicon tetrafluoride. Photometric analysis of the distillate yielded results of 60 and 66 p.p.m. silica on the first solution, and 214 and 223 p.p.m. silica on the second.

231 and 234-5 Combination Process

Standard solutions of Pu (III) and Pu (IV) have been prepared and were employed in testing the spectrophotometric procedure for the determination of these ions; promising results were obtained.

Miscellaneous

A document titled "A Continuously Recorded Determination of Boron," HW-15052, was issued to report the indirect spectrophotometric method devised to monitor

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Metallurgy & Control Division

the boron concentration of the solution to be used in the auxiliary pile control experiment.

STATISTICAL STUDIES

100 Area Operations

A study of the within-lot variance of Test Pile results on slugs from P-10 lots was made for the Pile Physics Section in order to determine the number of slugs to be sampled to provide adequate evaluation of each lot. Because of unexplained differences in within-lot variation from day to day, further data are to be obtained on lots produced by improved procedures before a decision is reached.

General equations for the transmission, reflection, and absorption of light to be expected in a series of lead glass panes, given the absorption through one pane and the reflection at each face, were computed for the Instrument Division. From these general equations, calculations were completed for various specific values of the reflection at each face and a given absorption, and charts prepared for routine use.

Calculation of equations relating the change in pile power level with time for various reactivity increments has been completed. These equations will be evaluated for applicable time intervals by I.E.M. methods.

Work on evaluation of the coefficients of the xenon equation has been continued with the return of the necessary I.B.M. computations. Some inconsistencies have been found when only a portion of the reactivity curve following shutdown is used. It is believed that these difficulties arise from the presence of a decay of longer half-life than any assumed in the equation used. Further I.B.M. work to compensate for this decay may be necessary.

A statistical evaluation of the dimensional changes in Group V canned slugs is being made. It is expected that the inspection and statistical evaluation of all metal discharged can be continued routinely.

200 Area Operations

A review of the past year's performance of the 200 Area B Plant sand filter indicated a significant decrease in calculated filter efficiency during the first four months of operation, but no statistically significant decrease since that time.

At the request of the Health Instrument Divisions, a statistical survey of the air sampling program in the 200 Area was initiated.

A control chart based upon the relationship between chemical assay and specific gravity of the initial 234 Bldg. sample (P-4) was supplied to the 234 Bldg. control laboratory for use in checking accuracy of the P-4 assay. Summaries of accuracy and precision of the P-4 assay, and precision of P-4 specific gravity determination, will be reported routinely in the weekly 200 Area Statistical Quality Report of Analytical Precision and the monthly Statistical

Report on Analytical Accuracy and Precision.

Several experiments for testing new analytical methods were designed for the Analytical Section.

A study of total counts reported in the 17-4 and C-4 tanks in the 200 Area B and T Plants for the period July through September 1949 indicated that 17-4 results averaged about 1% higher than corresponding C-4 results.

Estimates of CTRL and E4RC analytical precisions were obtained in connection with the program for improvement of E-4 tank inventory.

300 Area Operations

Statistical analysis of pre-irradiation data submitted by the 300 Area Plant Assistance Group on PT 313-109-M and PT 313-110-M has been completed.

The number of uranium slug canning bath samples for tin analysis which will result in a minimum combined cost of chemical analysis and production rejects was determined for the P Division (document HW-15212).

As a result of the cut-off tool tip width test, the P Division is replacing 5/16-inch tool tips with 3/16-inch tool tips as recommended by the Statistics Group. The net savings that will accrue from this replacement has been estimated by Project Engineering to total \$75,000 per year at the present production rate (document HW-15144).

Analysis of a second weighing test conducted after adjustment of Toledo scale number 723530 for the 300 Area P Division showed that the scale was accurate to 1/4 of one percent as compared to one percent on the previous weighing test. As a result of these tests, a routine accuracy control procedure has been recommended to the P Division to determine when production scales need to be re-adjusted by the Instrument Division.

A "t" test run between the average reactivity of Mallinckrodt virgin uranium produced from "old" orange salt (-0.185 dih), and "new" orange salt (-0.196 dih), showed no significant difference.

LIBRARY AND FILES

Plant Library

Work in the Plant Library proceeded on a routine basis. The volume of technical reference services, both in the open and classified literature, shows steady progress. In the classified literature, two extensive literature searches, one on receptacle slugs and another on powder metallurgy, were completed. In addition, work was continued throughout the month on a definitive bibliography of the literature on slug blistering.

A number of translations from the German were made by the technical abstracting staff. Plans are under review to expand this service.

Metallurgy & Control Division

The periodical collection of the Library was augmented by the addition of a fine run of the famous French journal "Journal de Physique et le Radium," a run of the "Archives of Biochemistry" from Volume 2 (1943) to date, the "Journal of the Franklin Institute" from 1930 to date, and a somewhat longer run of the "Bulletin De La Societe Chimique De France."

Library statistics were as follows:

	<u>October</u>	<u>November</u>
Number of books on order received	165	106
Number of books fully cataloged	223	137
Number of bound periodicals processed but not fully cataloged	33	222
Pamphlets added to pamphlet file	15	11
Miscellaneous material received, processed, and routed (Included maps, photostats, patents, etc.)	15	12
Books and periodicals circulated	1507	1520
Unclassified reports processed	202	120
Unclassified reports circulated	116	185
Reference services rendered	796	873

	<u>Main Library</u>	<u>W-10 Branch</u>	<u>Total</u>
Number of books	5149	2015	7164
Number of bound periodicals	3711	100	3811

Classified Files

In cooperation with the Project Engineering File, a procedure was developed for the expedited handling of Project Engineering Job Instructions, Engineers Request Reports, Engineering Memorandum Letters, Engineering Recommendation Reports, and Engineering Informal Requests. This procedure is similar to that worked out some months ago for special handling of Operations' Project Proposals.

An authority file of standard addresses for use in preparing receipts for offsite transmittal was completed. Use of this file will standardize the form of all offsite addresses used in the Classified Files, and simplify greatly problems of filing and handling receipts.

The lower floor of the north-side vault of Bldg. 703 was made available for Classified Files use, and its occupancy is in progress. Use of this vault will release combination lock file cabinets for use elsewhere.

A survey, covering a six-month period, of the classified correspondence between the Atomic Energy Commission and General Electric Company, Hanford, was completed.

The first draft of a proposed set of Subject Headings for Abstracting and Indexing Metallurgical Literature was received for extensive site review.

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These headings are the outcome of meetings held with members of the Metallurgy Section by Dr. I. A. Warheit and A. G. Greene of the Technical Information Branch, Oak Ridge, during their visit here last August.

Work statistics for the Classified Files were as follows:

	<u>October</u>	<u>November</u>
Documents routed	12,117	13,605
Documents issued	5,212	5,442
Reference services rendered	3,204	3,360
Reports abstracted	755	419
Registered packages prepared for offsite	314	246
Inter-area mail sent via transmittal	13,010	18,821

Files Assistance Unit statistics were as follows:

Ditto masters run	711	802
Mimeograph stencils run	1,248	1,420
Ditto master copies prepared	26,939	27,336
Mimeograph copies prepared	42,858	46,430
Volume of mail handled	19,303	19,197

INVENTIONS

All Metallurgy & Control 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 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.

<u>Inventor(s)</u>	<u>Item</u>
R. D. McGreal	Quad-dip Mechanism (A Device for Simultaneously Bronze Dipping Four Slugs)
D. C. Kaulitz	Stopper Remover for Volumetric Tubes
E. H. Kinderman	The electrolytic oxidation and distillation of ruthenium
G. B. Barton W. N. Carson, Jr.	A quantitative sampler for radioactive solutions

Signed

T. W. Hauff
T. W. Hauff
Division Head

TWH:mcs

MEDICAL DIVISIONS

NOVEMBER 1949

Summary

The Medical Divisions' roll continued to decrease with a drop of 11 from 382 to 371.

Visitors included the following:

Dr. Herman Smith - consultant in hospital construction and administration, Chicago, Illinois.

Dr. Robert A. Moore, Dean of Washington University Medical School, St. Louis, Missouri.

Mr. William S. McNary, Director of Michigan Hospital Service, Detroit, Michigan.

Dr. Simeon T. Cantril, Director of Tumor Institute and consultant in Industrial Medicine, Seattle, Washington.

This group met with the Medical Divisions here on November 11 and 12 to assist in long range medical planning for the project.

Dr. J. H. Sterner, Assoc. Medical Director of the Eastman Kodak Company and Atomic Energy Commission consultant on Industrial Health and Dr. G. A. Hardie, physician, Medical Branch, Atomic Energy Commission, Division of Biology and Medicine, spent four days inspecting plant installation from an industrial hygiene standpoint and studying the operations of the Industrial Medical Division.

The following meetings were attended:

Course in blood diseases - by two industrial physicians.

The new employee Health Insurance plan was subscribed to by 93.5% of General Electric employees.

Industrial

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

Active treatment was started on one employee who has deposited in his body more than the permissible amount of plutonium. The deposition occurred at another project. Treatment is an effort to increase the normal excretion rate.

Employee physical examinations dropped by 47% to 1653 due to a decrease in subcontractor examinations. Dispensary treatments declined by 15% to 5300. No major and only four sub-major injuries were treated.

Sickness absenteeism declined from 1.54% to 1.39% while total absenteeism declined from 2.41% to 2.07%.

The health topic covers the proper care of feet.

MEDICAL DIVISIONS

NOVEMBER 1949

Summary (continued)

Communities - Hospital and Clinics

The consultant group made the following recommendations:

1. That the professional practice of medicine and dentistry in the community be placed on a private basis and that this private practice include, but not necessarily be limited to, a group clinic in medicine and a group clinic in dentistry.
2. That the present clinic building be approximately doubled in size.
3. That much smaller additions than those previously recommended for Kadlec Hospital be made. That all additions to Clinic and Hospital be kept within present appropriations for this purpose.
4. That reductions in Kadlec Hospital staff personnel, particularly nurses, be made in the immediate future.

The Medical Divisions administrative staff is in agreement with these recommendations and visualizes great benefits accruing from the combined recommendations of its consultant group.

A second meeting of the consultant group, to be held in Chicago December 22, will consider other problems.

The average daily hospital census decreased from 59.5 to 54.2. This is 77% less than for November, 1948.

Clinic visits decreased by 5% to 5901, 33% below the November, 1948 figure.

Dental visits increased by 12% to 2355.

Public Health

The incidence of communicable disease increased by 30% due largely to chickenpox. The Benton County Food Ordinance was officially adopted, effective January 1, 1950.

Costs (October)

The net cost of operating the Medical Divisions (before assessments of workman's compensations costs to other divisions) was \$102,058.00, a decrease of \$5,119.00 and \$11,588.00 under the budget estimate. The improvement resulted from reduced direct expenses which more than offset an increase in transferred charges and a decrease in revenue.

The net cost of the Richland community medical program was \$20,930.00, an increase of \$1,274.00 and \$10,043.00 above the budget figure. Reduction in total expense was insufficient to offset reduction in revenue which was far short of the budget figure.

Kadlec Hospital cost was \$7,509.00, a decrease of \$6,396.00 and \$4,676.00 below the budget figure. Clinic cost was \$13,421.00, an increase of \$7,670.00 and \$14,718.00 above the budget figure due to decreased revenue.

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MEDICAL DIVISIONS

NOVEMBER 1949

Plant Medical Division

General

The total number of examinations continued to decrease from 2,424 in October to 1,653, due chiefly to a decrease of sub-contractor examinations. First aid treatments also dropped from 6,108 in October to 5,300 in November. There were 4 sub-major injuries treated during the month but no major injuries.

The subject of the Industrial Physicians Scientific Meeting dealt with the clinical toxicity of uranium.

Two industrial physicians spent two days at the University of Oregon Medical School studying blood diseases. It is planned that they will report to the entire group at the December meeting a summary of this study.

The Health Activities Committee met on November 17. The subject for the December health topic was presented regarding "Foot Health and Shoes". Material on this subject will be distributed throughout the plant for discussion. A new chairman has been selected and problems of distribution were discussed, as well as methods to be used to spread information regarding other activities of the committee concerning absenteeism.

Active treatment was started on one employee who has deposited in his body, more than the maximum permissible amount of plutonium. The deposition occurred at another A. E. C. installation. The treatment is an effort to mobilize the deposited plutonium.

Dr. James H. Sterner, Assoc. Medical Director of the Eastman Kodak Co. and Atomic Energy Commission consultant on Industrial Health, along with Dr. George A. Hardie, physician, medical branch, Atomic Energy Commission, Division of Biology and Medicine, spent four days during the month going through the plant and studying the functions of the Industrial Medical Division.

No evidence was found of radiation or chemical injury to any employee during the month.

MEDICAL DIVISIONS

NOVEMBER 1949

<u>Physical Examinations</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Pre-employment (G.E.).....	93	84	1420
Annual.....	492	553	5225
Food Handlers.....	58	33	629
Sub-contractors.....	910	181	18382
Rechecks.....	147	110	2391
Interval Rechecks (Area).....	567	505	5978
Terminations & Transfers (G.E.).....	93	141	2236
Government.....	64	46	191
Total.....	<u>2424</u>	<u>1653</u>	<u>36452</u>

Clinical Laboratory Examinations

Government.....	548	139	1267
Pre-employment, terminations, transfers..	1429	1641	39618
Annual.....	2851	3327	31546
Rechecks (Area).....	2925	2521	30473
First Aid.....	10	17	457
Plant Visitors.....	0	0	4
Clinic.....	2807	2859	37910
Hospital.....	1897	1787	30716
Public Health (Inc. food handlers).....	1002	86	3833
Total.....	<u>13469</u>	<u>12377</u>	<u>175824</u>

X-ray Examinations

Government.....	64	14	136
Pre-employment, terminations, transfers..	188	180	5315
Annual.....	482	564	5373
First Aid.....	93	61	2209
Clinic.....	251	191	3483
Hospital.....	107	83	2080
Public Health (Inc. food handlers).....	52	4	681
Total.....	<u>1237</u>	<u>1097</u>	<u>19277</u>

Electrocardiographs

Industrial.....	63	54	1394
Clinic.....	7	3	129
Hospital.....	13	12	259
Total.....	<u>83</u>	<u>69</u>	<u>1782</u>

Allergy

Skin Tests.....	6	11	426
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MEDICAL DIVISIONS

NOVEMBER 1949

<u>First Aid Treatments</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Occupational Treatments.....	506	372	12932
Occupational Retreatments.....	1792	1274	48426
Non-occupational Treatments.....	3810	3654	49473
Total.....	<u>6108</u>	<u>5300</u>	<u>110631</u>

Major Injuries

General Electric.....	1	0	9
Sub-contractors.....	<u>1</u>	<u>0</u>	<u>86</u>
Total.....	<u>2</u>	<u>0</u>	<u>95</u>

Sub-major Injuries

General Electric.....	4	3	43
Sub-contractors.....	<u>8</u>	<u>1</u>	<u>233</u>
Total.....	<u>12</u>	<u>4</u>	<u>276</u>

Absenteeism

Weekly employees, all causes.....	2.08%	2.07%	2.25%
Weekly employees, sickness only.....	1.26%	1.39%	1.51%
Total days lost by males due to sickness.	1157	1038	14953
Total days lost by females due to sickness	699	580	9951
Total days lost due to sickness.....	1856	1618	24904
Investigation:			
Total calls requested.....	15	17	205
Total calls made.....	15	17	205
No. absent due to illness in family...	0	0	2
No. not at home when call was made....	3	0	22

Village Medical Division

General

Medical Divisions' roll decreased from 382 to 371. The average daily hospital census dropped from 59.5 to 54.2 as compared to 96 a year ago.

Clinic visits decreased from 6222 to 5901 which is a 5% decrease as compared to the previous month, and 33% below a year ago. North Richland Medical Center accounted for 3% of the total.

The net expense of the Richland community medical program for October was \$20,930.00 as compared to \$19,556 for September. Breakdown is as follows:

Kadlec Hospital Expenses \$7,509.00

This is a decrease of \$6,396. over September. Approximately \$2,000. is due to reduction in salaries; the rest in supplies and other.

Clinic Expenses 13,421.00

This is an increase of \$7,670. over September which is due to decreased revenue.

MEDICAL DIVISIONS

NOVEMBER 1949

<u>Clinic Visits</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Medical.....	1072	1069	15549
Pediatrics.....	650	627	8147
Well Babies.....	90	125	1808
Surgical.....	518	547	8315
Gynecological.....	519	519	6308
Obstetrical (New).....	67	65	954
Obstetrical (Recheck).....	759	834	9432
Venereal Disease.....	16	24	1454
Ear, Nose & Throat.....	414	318	4924
Eye.....	102	274	2854
Visits handled by nurses.....	1333	939	16275
Night clinic visits.....	682	560	8808
Total.....	<u>6222</u>	<u>5901</u>	<u>84828</u>
Average clinic visits per day.....	240	227	297

Source of Richland Clinic Visits

Richland.....	91.0%	92.4%
North Richland.....	3.5%	2.8%
Other.....	5.5%	4.8%

Home Visits (Pay Cases)

Doctors.....	226	216	2539
Nurses.....	130	150	3302
Total.....	<u>356</u>	<u>366</u>	<u>5841</u>

Kadlec Hospital

Census

Admissions.....	343	308	5182
Discharges:			
Surgical.....	70	52	1059
Medical.....	63	60	952
Obstetric & Gynecologic.....	106	90	1324
Eye, Ear, Nose, Throat.....	22	25	611
Pediatrics: Children.....	26	15	422
Newborn.....	75	64	853
Total Discharges.....	364	296	5221
Patient Days.....	1847	1626	26770
Average Stay.....	5.3	5.2	5.1
Average Daily Census: Adults.....	45.3	43.1	
Infants.....	14.2	11.1	
Total Average Daily Census.....	59.5	54.2	80.1
Discharged against advice.....	0	0	20
One-day cases.....	37	34	874
Occupancy Percentage: Adults.....	45.3	48.4	75.0
Infants.....	177.0	138.8	166.2
Admission Source: Richland.....	78.4	81.4	74.7
North Richland.....	7.8	8.7	9.5
Other.....	13.8	9.9	15.8

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MEDICAL DIVISIONS

NOVEMBER 1949

<u>Operations</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Transfusions.....	39	47	533
Eye, Ear, Nose, Throat.....	16	22	513
Dental.....	2	2	17
Casts.....	15	12	220
Minors.....	40	45	686
Majors.....	21	34	562
<u>Pathological Slides</u>			
Hospital.....	0	0	747
<u>Vital Statistics</u>			
Deaths.....	5	1	58
Deliveries.....	73	66	845
Stillborn.....	1	0	8
<u>Physiotherapy Treatments</u>			
Clinic.....	121	119	1207
Hospital.....	152	126	748
Industrial: Plant.....	197	116	2403
Personal.....	20	18	555
Total.....	<u>490</u>	<u>379</u>	<u>4913</u>
<u>Pharmacy</u>			
No. of proscriptions filled.....	2419	2615	34198
<u>Patient Meals</u>			
Regulars.....	2487	1946	35684
Lights.....	30	55	1281
Softs.....	707	756	12336
Surgical Liquids.....	73	54	969
Tonsils & Adenoids.....	0	38	1167
Specials.....	625	764	10835
Liquids.....	94	128	2088
	<u>4016</u>	<u>3741</u>	<u>64360</u>
<u>Cafeteria Meals</u>			
Noon.....	2005	2041	25462
Night.....	253	248	3252
Total.....	<u>2264</u>	<u>2289</u>	<u>28714</u>

MEDICAL DIVISIONS

NOVEMBER 1949

<u>Nursing Personnel</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>
First Aid Nurses.....	33	32
Clinic Nurses.....	14	14
Public Health Nurses.....	11	11
Hospital General Nurses.....	63	59
Aides and Orderlies.....	36	34
Total.....	<u>157</u>	<u>150</u>

Public Health Division

General

The incidence of communicable disease increased about 30%. Chickenpox remains the outstanding infectious disease reported. One mild case of poliomyelitis was experienced. This patient is on the road to recovery and it is believed there will be no permanent paralysis. This is the only case of poliomyelitis which remains in the hospital.

Home nursing visits increased by approximately 12% due chiefly to the increase of communicable diseases. Other nursing services which showed an increase were tuberculosis, maternal and infant visits. Morbidity home visits were down about 12%. This reflects the status in the community at the present time; an increase in communicable disease and a decrease in other morbidity.

Miss Hazel Furman, consulting general duty nurse from the State Health Department, visited the area. She met with the nurses and commended the progress made in our local program.

A successful panel discussion on "Compulsory Health Insurance - Yes or No", sponsored by the Richland Health Council, was held with 350 in attendance.

Mothers' Classes were again started with 41 enrolled for a six weeks lecture course.

The division assisted the local chapter of the American Red Cross in its yearly campaign in solicitation of blood donors through the distribution of health education material.

The social service counselors did considerable work in the area of family life education; also in interpretation to the community of available social service resources. A class in understanding the small child was organized for mothers with children in the pre-school cooperative nursery.

The Benton County Restaurant Ordinance has been officially adopted and the individual establishments have been informed of the various grade requirements and the changes necessary to conform with said requirements. It is planned that grading will take effect on January 1, 1950. After this date, all food-handling establishments must meet and maintain requirements for either grade A or grade B as defined in the ordinance.

MEDICAL DIVISIONS

NOVEMBER 1949

General (continued)

A food-handler's training program has been effected and it is expected that by the first of the year all people associated with this industry will have had four hours of instruction in sanitary methods of preparing and serving food. To date, six sessions have been held, attended by approximately fifty individuals at each meeting.

Considerable time has been spent working with the individual room instructors in the various schools relative to proper usage of artificial lights and adjustment of window blinds in order that the greatest efficiency possible is developed with the facilities available.

Laboratory results of tests made on milk and milk products were satisfactory. Two producer farms were eliminated for failure to meet the above standards.

Effective December 9, milk producer farms and milk processing plants will be governed under the Washington State Uniform Fluid Milk Act. The effect of this act will be towards improvement over present state and county regulations. Milk plants have made or are in the process of making the needed improvements.

The regulations controlling garbage and waste disposal has been prepared and is up for consideration by the Community Council. The regulation is all inclusive and very similar to that of garbage ordinances in other communities.

<u>Administration</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Newspaper Articles.....	20	15	193
Committee Meetings.....	2	5	73
Attendance.....	15	55	805
Staff Meetings.....	4	3	28
Lectures and Talks.....	2	0	43
Attendance.....	100	0	3171
Conferences.....	25	22	309
Attendance.....	100	100	1395
Radio Broadcasts.....	0	0	3

MEDICAL DIVISIONS

NOVEMBER 1949

<u>Immunizations</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Cholera.....	0	0	3
Diphtheria.....	277	4	2357
Influenza.....	136	66	228
Rocky Mt. Spotted Fever.....	0	0	86
Smallpox.....	72	1	932
Tetanus.....	64	0	189
Typhoid.....	2	2	37
Whooping Cough.....	0	0	4
Vellmer Patch Test.....	0	4	18
Total.....	<u>551</u>	<u>77</u>	<u>3854</u>
 <u>Social Service</u>			
Cases carried over.....	80	83	940
Cases admitted.....	10	19	221
Total.....	<u>90</u>	<u>102</u>	<u>1161</u>
Cases closed.....	7	21	219
Remaining case load.....	<u>83</u>	<u>81</u>	<u>942</u>
Sources of referral:			
Public Health.....	4	1	38
Doctors.....	4	7	94
Hospital.....	2	0	4
Interested Person.....	0	3	20
School.....	0	0	5
Personnel Office.....	0	1	2
Personal Application.....	0	3	21
Housing.....	0	0	2
Other Agency.....	0	3	21
Miscellaneous.....	0	1	15
Total.....	<u>10</u>	<u>19</u>	<u>222</u>
 <u>Sanitation</u>			
Inspections made.....	199	117	2777
 <u>Bacteriological Laboratory</u>			
Treated Water Samples.....	158	167	2087
Milk Samples (Inc. cream and ice cream).....	113	114	1333
Other bacteriological tests.....	160	157	2638
Total.....	<u>431</u>	<u>438</u>	<u>6058</u>

MEDICAL DIVISIONS

NOVEMBER 1949

<u>Communicable Diseases</u>	<u>Oct. 1949</u>	<u>Nov. 1949</u>	<u>Year to date</u>
Amoebic Dysentery.....	0	0	3
Chickenpox.....	65	73	718
Erysipelas.....	0	1	1
German Measles.....	2	9	200
Gonorrhoea.....	0	1	31
Impetigo.....	1	1	9
Influenza.....	0	0	9
Measles.....	1	0	375
Meningococcic Meningitis.....	0	0	3
Mumps.....	0	2	30
Pediculosis.....	0	0	12
Pinkeye.....	0	3	36
Poliomyelitis.....	1	1	12
Ringworm.....	7	6	31
Scabies.....	1	6	15
Scarlet Fever.....	1	4	17
Syphilis.....	0	0	81
Tuberculosis.....	1	0	9
Vincent's Infection.....	0	0	3
Whooping Cough.....	1	0	6
Total.....	<u>81</u>	<u>107</u>	<u>1601</u>
Total No. Nursing Field Visits.....	761	865	12522

Dental Division

Dental visits increased 12% over the previous month. There was a decrease of approximately 35% over a year ago.

Patients treated.....	2088	2355	30266
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MEDICAL DIVISIONS

PERSONNEL SUMMARY

November 30, 1949

	TOTAL	1100 Area				3000 Area		Outlying Areas							
		Administration	Industrial	Clinic	Hospital	Public Health	Clinic	Public Health	100-H	100-B	100-D	100-F	200-E	200-W	300
Physicians	30	2	5.8	17.6		1	1.4		.3	.3	.3	.2	.2	.5	.4
Dentists	10			9			1								
Nurses	116	2	11	13	57	10	1	1	1	1	4	4	4	5	2
Anesthetists	3				3										
Nurse Aides	28		1	2	24	1									
Ord. & Amb. Drs.	6				6										
Tech.-Dent. Hyg.	1			1											
Tech.-Clin. Lab.	16				13.2						.4	.4	.4	.8	.8
Tech.-X-ray Lab.	4				4										
Tech.-Bact. Lab.	1				1										
Tech.-Phy. Ther.	2*				2										
Secretary	2	2													
Cler. Wk. Leader	2	1			1										
Steno.-Typist	9	3	2		2	2									
Off. Mch. Oper.	3	2	1												
Telephone Oper.	4	4													
General Clerk	60	20	17	9	6	1		1	.5	.5	1	.5	.5	1	
Pharmacist	4				4										
Dietitian	2				2										
Cook	5				5										
Kitchen Worker	10				10										
Soc. Serv. Coun.	3					3									
Sanitarian	3					3									
Health Educator	1					1									
Dental Asst.	9			8			1								
Janitor	17	1	5.3	3	7	.7									
Bacteriologist	2				2										
Records, Supv.	2	2													
Acctg. Supv.	3	3													
Admin. & Assts.	3	3													
Others	10	1		3	6										
Total	371	46	43.1	65.6	157.2	22.7	4.4	1	2.3	1.8	5.2	5.6	5.1	6.8	4.2

* 1-Physiotherapist
Working half-days only.

Number of employees on payroll:
Beginning of month 382
End of month 371
Net decrease 11

DECLASSIFIEDHEALTH INSTRUMENT DIVISIONSNOVEMBER, 1949Summary

Net changes in the force resulted in a total increase of seventeen people. There were five Special Hazards Incidents reported; none involved significant exposure.

The Operational Division report indicates the radiation problems in the field to be essentially the same as reported last month.

Atmospheric monitoring and land and vegetation contamination surveys followed the normal pattern. Considerable effort was expended in preparation for the "green run" scheduled for the end of this period. Due to inclement weather the test was postponed until atmospheric conditions would permit adequate dilution of the activity.

Biological monitoring continued with no unusual accumulation of activity noted. The sheep to be used in the I¹³¹ toxicology study were received during the month. Experimental feeding is planned to start in early January.

Health Instrument Divisions

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HEALTH INSTRUMENT DIVISIONS

NOVEMBER 1949

Organization

The composition and distribution of the force as of 11/30/49 was as follows:

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>200-W</u>	<u>200-E</u>	<u>300</u>	<u>700</u>	<u>P.G.</u>	<u>Total</u>
Supervisors	1	1	2	2	8	3	14	8	0	39
Engineers	4	3	11	3	21	10	10	4	0	66
Clerical	0	0	1	1	1	2	3	3	0	11
Others	9	13	28	12	69	33	49	11	8	232
Total	14	17	42	18	99	48	76	26	8	348

<u>Number of Employees on Payroll</u>	<u>November 1949</u>
Beginning of month	331
End of month	<u>348</u>
Net change	plus 17

Added to the roll were three technical graduates, two inspectors, one field clerk, and a steno-typist for the Survey section, and five general clerks for added work in the Personnel Meters Record Building. One steno-typist was added to the General division to assist in the divisions records and cost control group. The Biology and Development divisions added an engineer, seven laboratory assistants, a machine operator, and a technical graduate. Deleted from the roll were three technical graduates, a laboratory assistant, a steno-typist, and a badge worker.

General

A meeting, sponsored by the Atomic Energy Commission and the General Electric Company, was held with the Columbia River Advisory Group. The advisory group is comprised of E.F. Eliridge, Director, State of Washington Pollution Control Commission; E.C. Jensen, Chief, Director Public Health Engineering, State of Washington Department of Health; C.M. Everts, Jr., Director, Division of Environmental Sanitation, Oregon State Board of Health; and R.R. Harris, Senior Sanitary Engineer, Division Water Pollution Control, U.S.P.H.S. Members of the Health Instrument Divisions participated in discussions, and a tour of typical areas to demonstrate waste disposal methods and control measures exercised to preclude hazardous contamination of the Columbia River

Health Instrument Divisions

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Five Class I Special Hazards Incidents were investigated. One involved insufficient protective clothing, and four insufficient personnel survey.

The following trip was reported:

F.P. Seymour - Portland, Oregon, November 4 and 5, 1949
Contacted Leuphold & Stevens Co.; and A.M. Piper, of
the U.S. Geological Survey.

Visitors included Dr.P.E. Church, Health Instrument Divisions consultant;
Dr. George Hardie, and Dr. James Sterner.

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.

<u>Inventor</u>	<u>Title</u>
R.C. Thorburn	An analytical method for Zirconium

Health Instrument Divisions

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OPERATIONAL DIVISION

100 Areas

General Statistics

	<u>October</u>					<u>November</u>					<u>1949 to Date</u>
	<u>B</u>	<u>D</u>	<u>F</u>	<u>H</u>	<u>Total</u>	<u>B</u>	<u>D</u>	<u>F</u>	<u>H</u>	<u>Total</u>	
Special Work Permits	563	690	469	705	2427	714	610	797	589	2710	22,977
Routine & Special Surveys	432	392	469	225	1518	456	393	442	411	1702	17,762
107 Effluent Surveys	91	93	45	35	264	92	90	89	142	413	3,221
Air Monitoring Samples	92	96	106	25	319	84	106	101	70	361	3,527

Retention Basin Effluent

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

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>
Power level (MW)	275	305	275	275
Average beta dosage-rate (mrep/hr)	1.0	0.8	1.0	0.9
Average gamma dosage-rate (mr/hr)	2.1	2.6	2.6	1.5
Average total dosage-rate (mrep/hr)	3.1	3.4	3.6	2.4
Average integrated dose in 24 hrs. (mrep)	74	82	85	58
Maximum integrated dose in 24 hrs. (mrep)	89	108	101	77
Maximum integrated dose in 24 hrs. (mrep) 1949	108	132	106	77

100-B Area

File and Associated Buildings

Wide spread personnel contamination and high airborne contamination again resulted from failure to replace the #4 storage area drain plug after the shut-down on November 1, 1949.

Two apparently ruptured special request pieces were discovered by underwater telescopic examination in the storage area basin. A water sample taken directly beside one of the pieces twenty-four hours after discharge showed no unusual activity. Samples of the effluent water from the retention basin were also normal for the period the pieces were in the storage basin.

A small contaminated tank was moved from 100-F to 100-B under conditions of Special Hazard Bulletin #5, but was unloaded outside of a danger zone and low level contamination was spread to the ground.

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Discharge area contamination of tip-offs was excessive with dosage-rates as high as 13 rep/hr encountered. Due to the high contamination levels the tip-offs were decontaminated in the discharge area by dipping into a bucket of solvent; however, this practice should be considered temporary as it can easily lead to personnel contamination. Previous experience in this area indicates that a purge of the pile prior to discharge operations is effective in reducing tip-off contamination.

The radiation beam at the top, far edge of the pile showed no appreciable increase in intensity. The gamma dosage-rate is about 10 mr/hr.

P-10 Operations - 108 Building

Four minor injuries occurred in danger zones during the month and two were treated as being potentially contaminated. One occurred while assembling glassware in process hood #1 and urine samples taken immediately after the injury and on the following day showed no contamination present. The other injury occurred at the edge of the door to process hood #4 (an active hood) and urine samples taken showed positive results. However, the routine sample taken prior to the injury, but on the same day as the injury, also showed an equally high reading. For this reason it was concluded that the injury did not contribute to the urine sample results. A positive urine sample was also obtained from another operating employee and the maximum for either employee was 1.8 μ c tritium oxide/liter.

Calcium chloride samples placed in the operating gallery, hood room, can-opening room, the air intake duct, and at 150 feet northeast and southeast of the building, all showed positive indication of tritium oxide.

100-B Area

Several cases of hand and face contamination were encountered during vertical safety rod and guide replacement and also on personnel working in the rear face during discharge operation. Adjusting of respirators and poor glove manipulation was probably the main cause of this contamination. All were successfully decontaminated by washing.

Two returned special request express cars containing empty saks and boxes were found contaminated. In one instance, it was necessary to remove all three layers of flooring over an area of about five square feet in order to decontaminate the car.

High gas activity in the transfer and storage areas was detected by the EM chamber in the transfer area and was alleviated by increasing the water flow

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through the #3 storage area drain.

The radiation beam at the top, far edge of the pile showed an increase in gamma dose-rate from about 2 roentgens per hour to about 2.4 roentgens per hour. The beam was evident for the first time near the front of the pile at the front "C" clamp and the dosage-rate at this point was 33 mr/hr. The radiation level on the 50 foot far side roof was 75 mr/hr.

100-H Area

Immediately after a start-up of the pile early in the month, the HM chambers in the vicinity of the pile showed variations in activity which occurred at approximately a two hour cycle. Three-fold increases in activity corresponded with concurrent decreases in the building exhaust air. The activity was shown to be due to radio-argon which was emitted from filters on the vertical safety rod thimbles. Other locations throughout the building all showed slight increases in activity. Adjustments in the ventilation system and filling the water seals on the third safety drip line to the sewer decreased the activity and the variations in readings due to gas.

The vertical safety rods became radioactive due to frequent scrams early in the month and a dosage-rate of 350 mr/hr was observed at the wall below the window to the balcony at the top of the pile. The work area HM chamber also detected this activity. Decay studies made via recorder charts showed Mn⁵⁶ as the isotope causing the activity.

The vacuum and pressure release system on the near downcomer intermittently spewed out clouds of vapor with dosage-rates as high as 250 mrep/hr reported. Air samples taken inside and around the building in the vicinity of this cloud indicated adequate dispersion of the activity in the air. Since the effluent system is essentially closed, most of the pressure was released at the retention basin inlet and air samples collected inside the maintenance shop near the basin indicated presence of slight amounts of airborne contamination.

Investigation of high dosage-rates on the #1 experimental level showed that one of the shield plugs was left out of both the "B" and "D" holes. Auxiliary shielding was added in front of the holes and reduced the dosage-rate from the direct beam to less than 3 mrem/hr. However, a maximum of 34 mrem/hr was observed due to scatter from the sides of the "C" hole. Failure to replace the external shielding at the #2 instrument cubicle after work on a PC tube resulted in a gamma flux of 80 mr/hr and a slow neutron flux of 105 mrem/hr found at that location. The shielding was replaced at the earliest opportunity. Appreciable fast and intermediate neutrons were also detected at each of the T seams on the far side of the pile.

100-F Area

During preparation for the replacement of four vertical safety rods, the four

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rods scrambled while the H.I. representative was determining exposure levels. All personnel on top of the pile left the vicinity immediately and although high levels of gas activity were observed no personnel contamination was found. The cause was attributed to failure to by-pass the low pressure water trip. As personnel completed dismantling the old rods and left the job site, seven instances of skin contamination were found. Some of the skin contamination and three instances of shoe contamination were attributed to careless handling of protective clothing at the change station. All cases of personnel contamination were successfully reduced.

The radiation beam at the top, far edge of the pile showed little change in intensity. The gamma dosage-rate is 3 to 3.5 roentgens per hour.

200 Areas, T and B Plants

General Statistics

	<u>October</u>			<u>November</u>			1949 <u>To Date</u>
	<u>T</u>	<u>B</u>	<u>Total</u>	<u>T</u>	<u>B</u>	<u>Total</u>	
Special Work Permits	290	354	644	273	356	629	8,060
Routine & Special Surveys	451	498	949	440	521	961	11,280
Air Monitoring Samples	489	836	1325	555	874	1429	13,390
Thyroid Checks	171	99	270	167	94	261	2,400

Canyon Buildings

In the T Plant, gross product contamination of about 4.6 µg was reported on the canyon deck at Sections 16, 17 and 18, and high level fission product contamination was reported at Sections 1, 2, and 6 through 13. Monitoring assistance was required while taking 13 samples.

Fifty-three of 201 spot and continuous air samples taken were above 10^{-6} µc/liter. Sixteen of these jammed the counters and the maximum surface dosage-rate obtained on an air sample filter was about 700 mrep/hr, which indicated fission product concentrations of about 10^{-4} µc/liter. Thirty-one of the canyon air samples showed product concentrations above 10^{-11} µg Pu/cc with the maximum of 7.5×10^{-9} µg Pu/cc obtained at Section 12 after impacting at Section 19. Four positive fission product and 12 positive product air samples were obtained out of 34 taken in the R-13 change house. Maxima obtained were

8.

Health Instrument Divisions

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2.2×10^{-7} $\mu\text{c/liter}$ for f.p. and 9×10^{-12} $\mu\text{g Pu/cc}$. Ninety-nine air samples were taken in the 221-T Pipe and Operating Galleries and eleven showed positive fission product results and four showed positive product results. Maxima were 5×10^{-7} $\mu\text{c/liter}$ for f.p. and 4×10^{-11} $\mu\text{g Pu/cc}$.

In the B Plant, considerable maintenance work was done in preparation for semi-parallel operation. General deck contamination was reported throughout this work in spite of continued decontamination efforts. Sixty-four significant air sample results were obtained in the canyon with a maximum concentration of 2.6×10^{-5} $\mu\text{c f.p./liter}$ reported, and this occurred after jetting at 15-R with the blocks removed.

Control Laboratories

In the T Plant, a total of 219 items, not regulated with respect to handling, was found contaminated on surveys by H.I. and Technical personnel. Three incidents of product skin contamination were reported and one case of fission product contamination. All were successfully removed. One instance of floor contamination occurred in room 7 when a 19-4 P sample was spilled due to faulty equipment. An estimated 1.2 mg of Pu was involved. No skin contamination occurred, but it was necessary to dispose of one shoe. Decontamination of the floor was relatively easy. In addition, sixty other contaminated floor locations were reported. A total of 90 air samples was taken in room 7 and 39 showed positive results for fission products and 8 for product. The maxima were 4.4×10^{-7} $\mu\text{c f.p./liter}$ and 2.5×10^{-11} $\mu\text{g Pu/cc}$.

In the B Plant, 212 items, not regulated with respect to handling, were found contaminated by Technical and H.I. personnel. Three cases of fission product and one case of product hand contamination were reported and successfully reduced. Fifty-three contaminated floor locations were reported and cleaned.

Concentration Buildings

In the T Plant, one instance of skin contamination occurred during inspection of the E-2 to B-4 dip tube. No other skin contamination occurred during other maintenance work which included welding the A-1 tank, unplugging the F-1 to F-2 jet, removing the F-10 recycle jet, and repairing the A-1 to A-2 jet. Shoe contamination apparently resulted from a contaminated floor location outside the chained area in the F-10 room. Of the 85 air samples taken in the F-10 room, six showed product concentrations above 10^{-11} $\mu\text{g Pu/cc}$ with a maximum of 2.5×10^{-11} $\mu\text{g Pu/cc}$ reported. Twenty-nine air samples were taken in the pipe gallery and three showed positive results above 10^{-12} $\mu\text{g Pu/cc}$ with a maximum of 3.5×10^{-12} $\mu\text{g Pu/cc}$. Thirty-five of 116 air samples taken in the General Building showed fission product concentrations above 10^{-7} $\mu\text{c/liter}$ with a maximum of 4.3×10^{-7} $\mu\text{c/liter}$ reported.

In the B Plant, with GE Cocoon placed on the tanks equipped with a shaft, the following table shows the estimated plutonium discharge from roof vents per twenty-four hours:

Health Instrument Divisions

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10-1-49 to 10-10-49 10-10-49 to 10-25-49 10-25-49 to 11-25-49

	(Before Cocooning) <u>µg Pu/24 hrs.</u>	(After Cocooning) <u>µg Pu/24 hrs.</u>	<u>µg Pu/24 hrs.</u>
A-cell vent	19	7	2.6
B-cell vent	52	7.5	3.8
D-cell vent	28	8	10.5

Maintenance work included the removal, cleaning and replacement of the F-10 sampler, replacement of the F-1 shaft and paddles, and replacement of the F-1 sampler dip tube. Although gross product contamination was present, the work was accomplished with very good control and no contamination spread.

Stack Area

In the B Plant, the dosage-rate on the elbow of the inlet duct to the sand filter remained at 1100 mr/hr at 2 inches and has apparently leveled off.

Waste Disposal Areas

In the T Plant, adequate protective clothing consisting of an air-tight rubber suit and a fresh air helmet was made available and sandblasting of well car casks was resumed. No subsequent skin contamination was found. Jetting of second cycle waste from the 112-T tank to the 241-T crib was started on November 18, 1949.

In the B Plant, personnel contamination occurred when electrode readings were taken on the 204-C tank. The cause was attributed to failure to follow instructions.

Plant Laundry

A total of 101 spot and continuous air samples was taken with a maximum of 1.3×10^{-5} µg U/cc obtained during the washing of 300 Area clothes and a maximum of 3.3×10^{-11} µg Pu/cc obtained during the washing of 100-200 Area clothes.

General

All thyroid checks were below the warning level.

The Isolation Building

<u>General Statistics</u>	<u>October</u>	<u>November</u>	<u>1949 To Date</u>
Special Work Permits	12	20	324
Routine & Special Surveys	320	321	3303
Air Monitoring Samples	424	486	5196

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Health Instrument Divisions

DECLASSIFIEDOperating Cells

Eleven items, not regulated with respect to handling, were found contaminated by H.I. personnel. All were below 20,000 d/m. There were two cases of hand contamination; both successfully cleaned. One floor spot was reported in cell 4. Eight of the 298 spot and continuous air samples taken showed results above 10^{-11} $\mu\text{g Pu/cc}$, with a maximum of 1×10^{-10} $\mu\text{g Pu/cc}$ reported. Investigation showed the result due to a very small particle on the filter. Its origin was not determined. The maximum levels of gamma radiation encountered were 23 mr/hr on PR containers, 2 mr/hr at the process hoods, and 6 mr/hr on SC.

Control Laboratories

A total of 165 items, not regulated with respect to handling, was found contaminated on surveys by H.I. and Technical personnel. Seven of these items were above 20,000 d/m and three above 80,000 d/m. One instance of skin contamination occurred to an H.I. laboratory assistant while changing an air sample in the laboratory. It was caused by touching an item which was later found contaminated. Decontamination was successful. A spill of an AT solution occurred when the stirrer was inadvertently connected with the 110 volt circuit instead of the variac control circuit. Contamination of the hood, protective clothing, and the floor resulted, but no skin contamination was found. Steps were taken to prevent recurrence of this incident by modification of electrical plugs.

234-5 Building

<u>General Statistics</u>	<u>October</u>	<u>November</u>	<u>1949 To Date</u>
Special Work Permits	161	165	936
Routine & Special Surveys	3397	349	1755
Air Monitoring Samples	1386	1086	7760

234 Building - Operating Section

A total of 241 air samples was taken of which 87 were above 10^{-12} $\mu\text{g Pu/cc}$ and 41 above 10^{-11} $\mu\text{g Pu/cc}$, with a maximum of 8.9×10^{-9} $\mu\text{g Pu/cc}$ obtained in room 228 during the unplugging of a vacuum line. Five instances of skin contamination occurred and were successfully cleaned. Six incidents of contamination spread occurred within process rooms with an associated 14 floor spots found in adjacent corridors and rooms. All resulted from necessary maintenance work to unplug vacuum lines, leaks caused by failure of gaskets and the failure of improvised equipment. Traps in the hoods of room 228 to prevent product solution being sucked into the vacuum lines were installed and tied into a tank in hood #1. About 36 hours after the addition of scrubber solution to the tank, flanges leaked and approximately 14 liters of solution containing 1 to 10 grams of plutonium ran out on the floor.

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Higher than normal air sample results were obtained when excessive pressure differentials resulted in air turbulence at the hoods in rooms 166, 227, and 228. The cause was partially attributed to the slipping of a damper. Plutonium contamination spread occurred in room 228 during the unplugging of the TF vacuum line on hood 5. Grams of material were collected in a plastic bag, wrapped around an open flange by rodding and hammering the line. Air contamination of 8.9×10^{-9} $\mu\text{g Pu/cc}$ resulted as well as approximately 8 $\mu\text{g Pu}$ contamination on the floor. The degree of air contamination was further evident as shown by contamination as high as 40,000 d/m found on the grill work over the room exhaust ports. Two cases of low level skin contamination occurred, and were subsequently cleaned.

235 Building - Operating Section

A total of 189 air samples was taken, of which 22 were above 10^{-12} $\mu\text{g Pu/cc}$, with a maximum of 6.4×10^{-9} $\mu\text{g Pu/cc}$ obtained in room 230 during the removal of special pieces for transfer. No contamination spread occurred within the process rooms, and only one instance of skin contamination was reported and successfully decontaminated. A hazardous incident occurred when the bell jar in hood 25 exploded, resulting in a minor injury to an operator in the multiple piercing of rubber hood gloves by glass fragments. The cause was attributed to an explosive mixture occurring when air was introduced into the

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which showed a concentration of 9.5×10^{-14} $\mu\text{g Pu/cc}$. The fourteen samples of the 10 inch vacuum line were all below 10^{-12} $\mu\text{g Pu/cc}$. Twenty samples of the 26 inch vacuum line were taken; five were obtained prior to the switching of secondary filters, and showed an average concentration of 1.4×10^{-11} $\mu\text{g Pu/cc}$. The fifteen samples taken subsequent to switching of secondary filters showed an average of 1.2×10^{-12} $\mu\text{g Pu/cc}$, with a maximum of 1.2×10^{-11} $\mu\text{g Pu/cc}$. Seven instances of low level skin contamination were reported, and all were successfully cleaned. Maintenance work in the sump tank area included the replacement of a bent agitator shaft in sump tank D-5, and the removal of a jet assembly from the D-6 tank and replacement in the D-7 tank. This re-arrangement will permit jetting from D-7 to the settling tank, and make it possible to hold solutions until an analysis has been made. No contamination spread occurred.

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The 300 Area

General Statistics

	<u>October</u>	<u>November</u>	<u>1949 To Date</u>
Special Work Permits	158	146	2,178
Routine & Special Surveys	179	154	1,910
Air Monitoring Samples	153	177	1,596

Metal Fabrication Plant

Thirty-eight of 60 air samples taken were above 5×10^{-5} $\mu\text{g U/cc}$ as follows:

<u>Location</u>	<u>Number Taken</u>	<u>Number above 5×10^{-5} $\mu\text{g U/cc}$</u>	<u>Maximum Conc. $\mu\text{g U/cc}$</u>	<u>Conditions</u>
Chip Recovery	23	20	9.8×10^{-4}	West of press
Machining	22	10	1.1×10^{-4}	Normal operation
315 Bldg. (Main)	11	8	2.5×10^{-4}	Normal operation

The addition of a disposable plywood cover over the regular flooring in freight cars used for shipping uranium rods has greatly reduced the time required for decontamination of the cars prior to release. No mechanical means of remotely dumping trays of oxide from the converted outgassing furnace has been found, and the high air contamination, previously reported during this operation, continued. Air sample results taken before, during, and after straightening of rods which were coated with a coolant oil, showed a marked reduction from levels usually encountered.

Burial Ground

A spontaneous fire occurred in the burial pit on the morning of November 10, 1949. Full protective clothing including Chemox masks was worn by fire fighters. Subsequent surveys showed no detectable ground contamination. Procedures were altered to minimize the possibility of another fire in this location.

Technical Building

An instance of shoe contamination led to the finding of floor contamination in room 98 near the southwest hood. Decontamination was unsuccessful, and the location was covered awaiting tile replacement. In room 57, continuous monitoring was provided for an inventory of plutonium solutions. All work was performed within the laboratory hoods. No skin contamination was found, but it was found necessary to change gloves frequently in order to prevent the possibility of contamination spread. Readings as high as 20,000 d/m on sample bottles was reported. Contamination of the counting equipment in room 1 was attributed to the rupture of the collodion film covering a plutonium sample. There were 16

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high alpha counts and 14 high beta counts recorded; and all were successfully reduced.

Gold Semi-Works Building

A total of 59 air samples was taken in the building, and all were below 5×10^{-5} $\mu\text{g U/cc}$. A total of about 1,380 pounds of uranium has been discharged to the waste ponds. The total uranium in the 300 N. Crib was increased from about 63 to 96 pounds during the month.

A total of 22 high hand scores was reported; and all were successfully reduced.

Hand Score Summary

A total of 38,169 alpha and 38,111 beta hand scores was reported. About 0.14% of the alpha and about 0.08% of the beta scores were high. No attempted reduction was indicated for 2 high beta scores.

PERSONNEL METERSPencils

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>E&N 200</u>	<u>200-W</u>	<u>300</u>	<u>Total</u>	<u>1949 To Date</u>
Pencils read:	9,664	8,905	14,813	11,210	17,859	27,043	36,076	125,570	1,584,522
Single readings (100 to 280 mr)	13	14	11	15	12	61	44	170	2,532
Paired readings (100 to 280 mr)	1	0	0	0	1	0	0	2	20
Single readings (Over 280 mr)	29	40	19	28	21	64	69	270	3,183
Paired readings (Over 280 mr)	1	0	0	0	0	0	0	1	33
Paired readings Lost	1	1	0	0	0	4	0	6	59

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

Badge Resume, Construction Areas

	<u>105-DR</u>	<u>Total</u>	<u>1949 to Date</u>
Badges Processed	0	0	63,186
No. of readings: (100 to 500 mrep)	0	0	209
No. of readings: (Over 500 mrep)	0	0	19
Lost readings:	0	0	56

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Badges

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>200-E</u>	<u>R.R.T.</u>			<u>1949</u>	
						<u>200-N</u>	<u>200-W</u>	<u>300</u>	<u>Total</u>	<u>To date</u>
Badges Processed:	1,679	2,615	2,366	1,987	2,217	291	3,416	5,706	20,277	219,379
Number readings (100 to 500 mrep)	0	5	10	14	16	2	29	171	247	2,603
Number readings (Over 500 mrep)	0	0	0	0	0	0	0	0	0	27
Lost readings:	0	1	0	0	0	0	2	2	5	161

Lost readings were accounted for as follows:

Stuck film	2
Badge lost in area	1
Contaminated badge	1
Damaged film	1

Investigation of lost readings showed no possibility of an overexposure.

Badges processed, 1949	Operations	219,379
	Construction	<u>63,186</u>
	Total	282,565

In addition, 2395 items of nonroutine nature were processed. The 1949 total to date is 25,696.

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CONTROL AND DEVELOPMENT DIVISION

Site Survey

Water samples were taken from all scheduled locations. Slight beta activities of 110 to 180 $\mu\text{mc/liter}$ now appear at Pasco and Kennewick due to low river flows. Most of this activity appears to be due to Na^{24} .

Iodine activity in vegetation remains fairly constant at low levels with possibly some shift in distribution. Several off-area surveys were made with no significant activity detected.

A considerable amount of time has been spent in preparing equipment and in training manpower for the so-called "green run" which was scheduled for the end of the month. Theoretical calculations of the activity expected in this run and calibrations of instruments needed were carried out.

Geology

Water samples from wells 361-B-1 and 361-B-9 continue to show activity at about the same level as for the last few months rather than the decrease which would be expected on the basis of the results for the past two years. A decay curve on a recent water sample from 361-B-1 has shown no significant decrease in activity which indicates that no shorter-lived materials have entered the water table.

Water samples from the 241-T-361 reverse well indicate that the beta activity level has been stabilized at about 4,000 $\mu\text{mc/liter}$. The alpha activity at this location is about 100 dis/min/liter, and has been shown to be all due to uranium by laboratory tests.

Six 30-foot test holes were drilled in the 100-D Area for seepage tests. Samples for reference were obtained at 5-foot intervals for all test holes.

Meteorology

<u>Forecasts</u>	<u>Number</u>	<u>Percent Reliability</u>
8-hr. Production	90	79.6
24-hr. General	60	80.3
Special	6	83.3

Temperatures during the month of November averaged 45.3^oF, as compared to a normal of 40.0 F. The temperature dropped as low as 32^oF on only four occasions, while in October there were ten such days.

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Precipitation during the month totaled 1.47 inches which is by far the greatest monthly total observed for the year, and which follows a period of seven consecutive months in which the precipitation has been below normal.

The windstorm of the 26th and 27th set a new high of 85 mph for one gust at the 400-foot level. There were sustained speeds of 72 mph, an average for one hour of 62 mph, and an average for seven hours of 56.4 mph.

Fog was present on all except one day of the period from November 14 through November 25. The fog was present for an average of 9.8 hours on these days. These conditions were also unsuitable for normal dissolving operations. Aircraft conditions prevailed only 28% of the time, and dilution factors were above 500 for 58% of the time. Normally the figures average about 44% and 86% respectively.

Bioassay

Results from two hundred and seventy-seven urine samples analyzed for plutonium were obtained this month. The blank samples and samples averaged 0.02 and 0.03 d/m with a 91% yield on the spiked samples. One group of six samples was resampled due to low yields on the spike. One resample from previous high values gave less than 0.33 d/m.

One hundred and forty-eight urine samples were analyzed for uranium on the fluorophotometer. The maximum individual result was 45 $\mu\text{g/liter}$.

Thirty-three urine samples were analyzed for tritium oxide. Two men have shown results only slightly above the detection level of 1.2 $\mu\text{c/liter}$. Resamples in the following week indicated that these values had dropped below the detection level.

Methods Development

A series of 12 urine samples spiked with about 3 dis/min of plutonium was analyzed in the Bioassay Laboratory and electroplated by the best technique now known. Yields ranged from 70% to 100% as measured on the counters. An investigation into the effect of iron on the plating indicated that the solution could contain up to 0.5 milligrams. Weighing of the black material formed on the plate indicated that less than 0.1 milligram was deposited.

Examination of NTA film exposed to sources ranging from 5 d/m to 0.01 d/m for periods of one to four weeks indicates non-reproducible results. A considerable study of the proper exposure conditions will be needed before this technique may be considered as quantitative.

Several tests were made of the effect of treating filters with sodium bisulfite, sodium thiosulfate, and silver nitrate, for improved retention of active

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materials in the 200 Area stack gases. An increase in the percentage of activity retained by the treated filter to a maximum of 75% was noted on four of the five samples run. Untreated filter paper retained 5 - 20% of the activity. Considerable difficulty was encountered with moisture condensing on the filters.

A method was developed for analyzing urine for macro quantities of zirconium salts so that the excretion rate could be followed.

The comparison of water and magnesium-calcium carbonate solutions as washing agents for removing plutonium from the soil was terminated this month due to plugging of the columns. Little difference has been noted in the rates of elution. The elutriate from the water column was passed through a second soil column to determine the amount absorbed. The amount absorbed was dependent upon the time of contact with about 90% absorbed in one hour. These conclusions were substantiated by independent experiments wherein a plutonium spike was shaken with soil and the solution analyzed at various time intervals. Two attempts at absorption of the elutriate at pH 3.8 indicated slightly greater absorption, while one sample at pH 10 indicated very poor absorption.

A study of a mica-window GM tube operated in the proportional region (135 volts below normal operating voltage) on a Nuclear Instrument and Chemical Corp. scaler model 162, indicated about the same reproducibility as in the Geiger region. Longer tests at different gain settings are indicated before definite conclusions may be reached.

A helium-octane GM tube obtained from Nuclear Instruments and Chemical Corp. has given an increasing sensitivity with time after running a voltage plateau. The initial control data gave a counting rate of 825 c/m, which has increased over a period of 25 days to approximately 1100 c/m which was the value obtained on this source when the plateau was measured.

Absorption curves on S^{35} and C^{14} using mica and aluminum indicate no difference between these absorbers within the accuracy of the measurement. Backscatter factors for S^{35} and C^{14} mounted on six materials have been obtained.

Methods Control

A close check of the calibration of the low background alpha counters is being made since it was noted that some sets appear to be counting consistently low on samples, although the control points are good. A study of the amount of fatigue from high counting sources on the beta counters has been initiated.

Studies of ether-extraction methods for Pu-U determinations have continued with investigation of several changes in salting agents. The most promising study is with a small stirrer-centrifugal pump obtained from the Technical Divisions. This unit gives excellent mixing between the two phases in the extraction.

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The number of analyses performed this month was:

<u>Laboratory</u>	<u>Number</u>
Vegetation	730
Water	978
Solids	251
Fluorophotometer	615
Miscellaneous	66
Total	2640

<u>Counting Room</u>	
Beta measurements	4761
Alpha measurements	3631
Control points	2422
Decay curve points	760
Absorption curves	11
Total	11,585

Physics

Extrapolation chamber data for the alpha and beta dose-rates from uranium and thorium metals are nearly complete. Calculations and the preparation of a final report are now in progress.

Progress toward a prototype for limited production of a neutron sensitive recoil proton counter was made. The prototype used an aluminum cathode, 1 mil wire anode, glyptal-sealed and shielded kovar insulators, filled with methane at atmospheric pressure.

The relative sensitivities of argon and methane-filled ionization chambers to the gamma radiation from radium and Co^{60} have been investigated. Argon at all pressures investigated gives a current about 8% greater in a radium gamma field than it does in a Co^{60} gamma field of the same number of mr per hour. Methane at pressures greater than 200 psi gauge gives a current about 5% greater in a Co^{60} gamma field than it does in a radium gamma field of the same number of mr per hour, while below 200 psi the two currents approach the same value.

The situation for methane described above is in part probably a result of saturation difficulties. Although very high voltages have been used with methane at the higher pressures, it has not been possible to demonstrate beyond question that saturation has been achieved. This has led to an attempt, as yet unsuccessful, to apply the Jaffe-Zanstra theory of columnar ionization to the data and to obtain thereby a theoretical saturation current.

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Experimental data on the behavior of a boron-trifluoride counter moderated by successively thicker shells of lucite, with and without inter-leaved cadmium is essentially complete for the available laboratory sources. This work will next be done using the neutron sources within various thicknesses of moderator to obtain spectra with neutrons of all energies less than the characteristic maximum.

Preparations were completed for the initiation of a routine personnel monitor program for fast neutrons by nuclear track emulsion films. About 250 badges will be involved, not including calibration, blank, and other test films. The badges will be serviced at two-week intervals. Exposure of a badge to a tolerance flux of fast neutrons for two work weeks, 40 n/sec/cm^2 for 80 hours, will produce as few as 3 tracks per 40 microscope fields in 5 cases out of 100. This confidence level is considered satisfactory as a starting point. It is estimated that two operators taking turns on each of the six available microscopes, twelve operators in all, can read the required number of films. The necessary testing and training for this program are underway.

Industrial Hygiene

During the past month, considerable emphasis was placed on completing the study of health hazards associated with the activities in the Bioassay operations at the 706 Building. A preliminary survey of the materials and techniques employed indicated several potentially hazardous conditions which were studied in greater detail. This study included evaluation of workers' exposures to oxides of nitrogen, benzene, and toluene. Where necessary, tests were also made of ventilation and air movements within the building. A report of this investigation is being prepared, and should be submitted shortly.

A follow-up study of oxides of nitrogen was made at the slug pickling operation in the 313 Building, where previous tests had indicated excessive exposures. The initial study showed that atmospheric concentrations frequently exceeded the MAC of 25 ppm, and in one instance attained a peak concentration of 600 ppm. Ventilation changes were recommended which were subsequently complied with. The results of those corrections were substantiated by the results of the current study which indicated that the exposures have been minimized. The maximum concentration found was approximately 18 ppm. A report will be prepared shortly on this investigation.

The study of natural atmospheric contamination is continuing with the regular samples of airborne dust, wind velocity and soil moisture contents being observed. This investigation will continue through January 1950, at which time a report of findings will be prepared covering a period of one year.

Instrument Development

An alpha scintillation probe for survey work was built and partially tested. Driving a Higinbotham scaler directly, this detector gave about 10% geometry

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and a background of 1 c/m. The same detector can be substituted for a poppy probe and used with a HW poppy by changing two poppy resistors. Further tests of sensitivity and stability will be run before placing the unit in field service.

A "balloon ascension" telemeter was designed, built, and tested for use in the "hot run". The airborne unit consists of a thin-wall glass Geiger counter and Atomic Blinker multivibrator which keys a cut-off ultrasonic oscillator operating at about 20 megacycles. Total weight of the assembly is less than 3 pounds. The ground unit consists of a Hammarlund communications receiver driving a single shot multivibrator which operates a Higinbotham scaler. All preliminary tests have been satisfactory. This group is indebted to Instrument Division Development group for their cooperation in lending the receiver for this work.

One sheep thyroid monitor using Amperex copper cathode counters was completed and delivered to Biology Division. Screen wall, bismuth coated counters have been ordered, but have not yet arrived.

Successful pulse analyzer runs have been made for determining plutonium energy distribution. The electronic equipment is being brought to a satisfactory physical state while alpha sources of various energies are being prepared by the Methods group. Little can be predicted about the instrument, but the plutonium curves obtained thus far give an optimistic outlook.

Calibrations

The routine calibrations were:

<u>RADIUM CALIBRATIONS</u>	<u>Number of Calibrations</u>	
	<u>October</u>	<u>November</u>
Fixed Instruments		
Gamma	355	340
Portable Instruments		
Alpha	261	251
Beta	578	484
Gamma (radium)	1,020	896
X-ray scanning	30	10
Neutron	54	7
Total	<u>1,953</u>	<u>1,648</u>
Personnel Meters		
Beta	112	315
Gamma (radium)	7,617	8,122
X-ray	8,447	6,251
Neutron	--	--
Total	<u>16,176</u>	<u>14,688</u>
GRAND TOTAL	<u>18,484</u>	<u>16,676</u>

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DECLASSIFIEDBIOLOGY DIVISIONAnalyses Group1. General

The Analyses Group was organized during the last month and consists of one technologist and two engineers, one of them (acting group head) on part time loan from the H.I. Development Division. Its function, until the biology laboratory becomes available, is that of providing limited service to other groups within the Biology Division as listed below.

2. Analysis of Active Particles

Radiochemical and spectrographic analyses (the latter by the Technical Divisions) have been performed on active particles collected by electrostatic precipitation. A summary report is being prepared and results will be abstracted next month.

3. Analysis for plutonium in animal tissue

In support of the determination of ingested plutonium absorption, three methods for extracting plutonium from ashed rat carcasses have been tested. Lanthanum fluoride coprecipitation followed by TTA extraction appears the most promising.

4. Plutonium absorption on materials

Since plutonium solutions will be stored in glass containers and subsequently fed to rats with rubber catheters, the amounts of plutonium that will absorb onto glass and rubber surfaces have been found to be negligible under the conditions which will be used.

Other services included the routine preparations and standardizations of radioactive stock solutions and the radiochemical analyses of biological monitoring samples for other groups.

Aquatic Biology Group1. Effect of Pile Effluent on Aquatic Life

24 The chinook salmon eggs obtained last month have generally been developing in a satisfactory manner, although mortalities increased. This increased mortality is due partly to an inherent weakness in some eggs and partly to continued warm water during October and early November. Mortalities significantly above those of the controls have occurred in 5 per cent (uncooled) and 10 per cent concentrations of the effluent and can largely be accounted for by the temperature increments involved. Activity absorbed by the egg shells is roughly proportional to and 50 to 100 times greater than the activity of the surrounding water. The activity of the embryos within the eggs is lower than that of the shells by a factor of about 10.

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DECLASSIFIED2. Biological Chains

Trout being held in a 5 per cent concentration of area effluent water and given food containing 10 per cent algae from the 107 Retention Basin have accumulated about three times as much activity as fish under similar conditions but not given contaminated food. The half-life of the activity picked up from the algae is virtually all 14 days or longer. Yearling trout on a diet containing 10 per cent 107 Basin algae are rapidly approaching sexual maturity but thus far have not shown an increased accumulation of radioisotopes in the gonads.

A new test on isotopic dilution was started on November 9, in which small carp are being held in pile effluent water with and without the addition of 15 p.p.m. of disodium phosphate. The addition of this amount of the disodium phosphate appears to reduce the amount of short-lived (Na ^{24}) activity accumulated by the fish by about 50 per cent. Decay studies are in progress to determine the P^{32} component.

A second new test was started on November 28, in which the carp from the above test are being fed to trout held in river water with and without the addition of 15 ppm disodium phosphate.

3. Radiobiological Survey

With the onset of colder weather, sampling conditions have been less favorable than during September and October. Sampling of bottom dwelling forms was temporarily suspended on November 28, due to an abnormal rise in water level caused by heavy rainfall in the headwaters of the Columbia River.

With the exception of the plankton, most of the aquatic organisms including the fish showed a slight decrease in activity during the month. This decrease is probably due to a slower metabolic rate resulting from the colder water temperatures. Carcasses of chinook salmon which had just died after completing spawning in the vicinity of the 100-H Area showed only background activity. No increase in the radioactivity of the organisms living in the river just below 100-H has been noted since the startup of this new Area. The activity of the water drawn from the river at the 100-F Area has increased from about 0.5×10^{-3} to 1.0×10^{-3} $\mu\text{c/L}$, however.

4. Miscellaneous

On November 1, aerial photographs were taken of the principal salmon spawning area in the Columbia River within the EW Reservation, and on November 16, a fourth and final census was made of this spawning. Approximately 300 nests were observed this year which is a marked reduction from the 700 observed in 1948.

Biochemistry Group1. General

25 Much of the activity of this group is presently being directed toward setting

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up blood chemistry procedures in the clinical laboratory for the Animal Farm.

2. Deposition in lungs of active particles

Investigation of methods for determination of specific activity and loci of deposition of active particles in rabbits exposed to stack gases again is in progress.

3. Gastro-intestinal absorption of plutonium

Two experimental groups, consisting of 5 males and 5 females, respectively, and one control group of four animals, are to be used to investigate the influence of sex on the fraction of ingested plutonium deposited. The feeding will start in December at a rate of approximately 10,000 Pu 239 $\mu\text{m}/\text{day}$.

Botany Group

1. Separations area control

Radiochemical analyses of soil samples four feet deep taken from the 200 East R-3 Danger Zone at the sites of Russian Thistle being studied by this group have shown about equal contributions to total beta activity by Sr, Y, Ce, and Cs with a small amount of Ru. At $3\frac{1}{2}$ feet deep, where the total activity is about 0.002 of the former, Sr and Y contribute the same fraction, but the amount of Ce and Cs have decreased, while Ru now contributes most to total radioactivity.

2. Agricultural Field Station

Beta activity in vegetation grown at the Station was no higher than control samples. Late potatoes contained 0.002 $\mu\text{c}/\text{kg}$ and alfalfa about five times that quantity.

The peach orchard has 159 trees infected with Virus X. Ninety-nine of the infected trees have been removed. They will be replaced with young trees in the spring.

3. Decontamination of pile effluent by algae

A new type of column has been developed which increases the volume of algae by 150 per cent.

4. Translocation of radioactive materials in plants

Stems of bean plants grown in nutrient solution prepared from effluent pile water contained twice the beta activity present in control plants.

Health Instrument Divisions

DECLASSIFIEDPhysiology Group1. General

This is the first report of the newly formed Physiology Group. Until the biology laboratory is ready for occupancy, its function is mostly that of service to other groups. It is assisting the Animal Farm by setting up hematological procedures. The Medical Division has kindly given two weeks training in hematological procedures to two personnel for that purpose.

2. Tissue Preparation and Radioautography

Photomicrographs for the Botany Group and radioautographs for the Biochemistry Group and special procedures for gross radioautography of fish for the Aquatic Biology Group are being developed.

Zoology Group1. Toxicology of I-131

One hundred and four yearling ewes and four three-to-five-year-old rams were received at 100-F and 20 ewes and one ram were received at the State Irrigational Experimental Station at Prosser on November 29, 1949. All animals are purebred Suffolk eligible to register. Ewes are to be conditioned and bred before experimental feeding is started. Buildings will be ready for full usage about December 15.

2. Biological Monitoring

Sampling of birds and mammals has continued with no special event. Plans are being made for a rather broad collection program in December to afford comparison with levels of radioactivity observed in specimens taken in October.

GENERAL ACCOUNTING DIVISION

NOVEMBER 1949

GENERAL

Calculation of salary adjustments retroactive to April 11, 1949, resulting from the Union Agreement was completed and checks covering the adjustment were distributed to employees on November 18, 1949, approximately six weeks in advance of the original estimated delivery date. Payments were made to 4,578 active employees and 381 employees who have been removed from the payroll. The gross amount of the payment was \$227,638.22.

Permission to defer one week of their 1949 vacations until 1950 was granted by Division Managers during November to 21 weekly paid employees and 22 monthly employees. To date permission to defer one week of vacations has been granted to 51 weekly paid employees and 45 monthly employees.

In connection with mid-year reviews of budgets, reports covering budget estimates for General Division and Medical Division were distributed on November 25.

Credit policies and collection procedures in effect at Kadlec Hospital were reviewed and as a result some changes in procedures to insure more effective collections are to be made. Contacts were made with several collection agencies with respect to their assisting in collecting delinquent accounts.

Since the issuance of the June 30 Plant Accounting Statements in September, work has continued on these records and it is intended that another statement will be issued as of December 31 before the end of January.

Hanford Works and Nucleonics Department Financial Statements for the month of October were completed and distributed on November 21, and November 22, 1949 respectively. General Divisions Operating Reports covering October operating costs were completed on November 15, 1949.

Advances from AEC were reduced from \$3,500,000 at the beginning of the month to \$3,000,000 at the month end. Items comprising the balance in the advance account as of November 30 compared with those of October 31 are detailed below:

	<u>October 31</u>	<u>November 30</u>
Cash in Bank - Contract Accounts	\$ 2,667,073	\$ 2,416,198
Salary Accounts	55,000	55,000
Travel Advance Funds	50,000	50,000
Unliquidated portion of Advances prior to June 1, 1949	13,307	2,117
Advances to Subcontractors	300,180	300,000
Accounts Receivable - AEC	11,930	-0-
Cash in Transit	<u>402,510</u>	<u>176,685</u>
Total	<u>\$ 3,500,000</u>	<u>\$ 3,000,000</u>

General Accounting Division

STATISTICS

<u>Employees and Payroll</u>	<u>Total</u>	<u>Monthly Payroll</u>	<u>Weekly Payroll</u>
Employees on Payroll at beginning of month	7 502	1 600	5 902
Additions and transfers in	81	7	74
Removals and transfers out	(149)	(13)	(136)
Transfers from Weekly to Monthly Payroll	--	16	(16)
Transfers from Monthly to Weekly Payroll	--	(4)	4
Employees on Payroll at end of month	<u>7 434</u>	<u>1 606</u>	<u>5 828</u>

<u>Employees on Payroll at end of month</u>	<u>October</u>	<u>November</u>
Manufacturing	3 256	3 213
Design and Construction	530	520
Community	748	735
Other	2 968	2 966
Total	<u>7 502</u>	<u>7 434</u>

<u>Overtime Payments</u>		
Weekly Paid Employees	\$34 659	\$25 456
Monthly Paid Employees (1)	4 551 (2)	3 541 (3)
Total	<u>\$39 210</u>	<u>\$28 997</u>

<u>Number of changes in Salary Rates and Job Classifications</u>		
	1 053	647

<u>Gross Amount of Payroll</u>		
Manufacturing	\$1 112 973	\$1 241 688
Design and Construction	199 185	189 221
Community	224 215	242 960
Other	915 814	1 003 732
Total	<u>\$2 452 187 (4)</u>	<u>\$2 677 601 (4)</u>

<u>Annual Going Rate of Payroll</u>		
Manufacturing	\$14 503 087	\$14 223 230
Design and Construction	2 290 466	2 222 245
Community	2 896 103	2 876 202
Other	11 725 292	11 692 271
Total	<u>\$31 414 948</u>	<u>\$31 013 948</u>

<u>Average Salary Rate Per Hour (5)</u>	<u>October</u>			<u>November</u>		
	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>
Manufacturing	\$2.015	\$2.618	\$2.114	\$2.000	\$2.635	\$2.107
Design and Construction	1.587	2.632	2.022	1.569	2.657	2.030
Community	1.739	2.299	1.849	1.755	2.311	1.866
Other	1.630	2.513	1.832	1.634	2.509	1.835
Total	<u>\$1.815</u>	<u>\$2.545</u>	<u>\$1.969</u>	<u>\$1.810</u>	<u>\$2.554</u>	<u>\$1.968</u>

- (1) Payments cover period from 16th of previous month to 15th of current month
- (2) Includes 5 Saturdays and \$293.00 applicable to month of September.
- (3) Includes 4 Saturdays and \$995.00 applicable to month of October.
- (4) Includes 4 weeks in case of weekly paid employees. November gross payroll also includes \$227,638.00 adjustment retroactive to April 11, 1949, resulting from Agreement between H.A.M.T.C. and General Electric Company.
- (5) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, Suggestion Awards, etc.

General Accounting Division

Employee Plans

Pension Plan

	<u>October</u>	<u>November</u>
Number participating at beginning of month	6 516	6 569
New participants and transfers in	93	55
Removals and transfers out	(40)	(57)
Number participating at end of month	<u>6 569</u>	<u>6 567</u>
% of eligible employees participating	91.8%	91.9%

	<u>November</u>	<u>Total to Date</u>
Employees Retired	2	104
Number		
Aggregate Annual Pensions Including Supplemental Payments	\$506	\$24 815*
Amounts contributed by employees retired	\$366	\$ 9 300
*Amount before commutation of pensions in those cases of employees who received lump sum settlement		

Group Life Insurance

	<u>October</u>	<u>November</u>
Number participating at beginning of month	5 843	5 789
New participants and transfers in	28	102
Cancellations	(9)	(9)
Removals and transfers out	(73)	(61)
Number participating at end of month	<u>5 789</u>	<u>5 821</u>
% of eligible employees participating	80.4%	79.9%

Insurance Claims

	<u>November</u>	<u>Total to Date</u>
Number of deaths	1	33
Amount of insurance	\$5 150	\$165 962
Premiums paid by employees who died	42	\$ 2 288

Group Disability Insurance - Personal

	<u>October</u>	<u>November</u>
Number participating at beginning of month	6 467	6 465
New participants and transfers in	95	87
Cancellations	(9)	(0)
Removals and transfers out	(88)	(106)
Number participating at end of month	<u>6 465</u>	<u>6 446</u>
% of eligible employees participating	89.3%	88.4%

Group Disability Insurance - Dependent

	<u>October</u>	<u>November</u>
Number participating at beginning of month	4 067	4 089
Additions and transfers in	56	42
Cancellations	(10)	(0)
Removals and transfers out	(24)	(47)
Number participating at end of month	<u>4 089</u>	<u>4 084</u>

General Accounting Division

Employee Plans (continued)

<u>Group Disability Claims</u>	<u>October</u>	<u>November</u>
Number of claims paid by insurance company:		
Employee Benefits	65	72
Daily Hospital Expense Benefits	66	79
Special Hospital Services	66	81
Surgical Operations Benefits	54	68
Dependent Benefits Paid		
Daily Hospital Expense Benefits	86	84
Special Hospital Services	91	91
Amount of claims paid by insurance company:		
Employee Benefits	\$ 9 083	\$10 489
Dependent Benefits	3 046	2 915
Total	<u>\$12 129</u>	<u>\$13 404</u>

Group Disability Insurance - Premiums

Personal - Employee Portion	\$11 434	\$11 297
- Company Portion	6 404	6 563
- Total	<u>\$17 838</u>	<u>\$17 860</u>
Dependent- Employee Portion	\$ 3 854	\$ 3 789
- Company Portion	231	322
- Total	<u>\$ 4 085</u>	<u>\$ 4 111</u>
Grand Total	<u>\$21 923</u>	<u>\$21 971</u>

Vacation Plan

Number of employees granted permission to defer one week of their 1949 vacation to 1950.

	<u>November</u>			<u>Total to Date</u>		
	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>
Manufacturing	6	5	11	19	17	36
Design and Construction	3	5	8	5	6	11
Community	2	3	5	3	3	6
Technical	3	2	5	10	9	19
Health Instrument	0	1	1	0	1	1
Employee & Community Relations	2	1	3	2	3	5
Plant Security and Services	2	4	6	7	5	12
Purchasing and Stores	1	0	1	1	0	1
General Accounting	2	1	3	4	1	5
Total	<u>21</u>	<u>22</u>	<u>43</u>	<u>51</u>	<u>45</u>	<u>96</u>

Annuity Certificates (For du Pont Service)

<u>Number issued</u>	<u>November</u>				<u>Total to Date</u>
	1				66
<u>U. S. Savings Bonds</u>	<u>Mfg.</u>	<u>D&C</u>	<u>Comm'y</u>	<u>Other</u>	<u>Total</u>
Number participating at beginning of month	1 769	278	350	1 470	3 867
New Authorizations	16	7	5	24	52
Voluntary Cancellations	(30)	(10)	(9)	(45)	(94)
Removals and Transfers out	(10)	(1)	(12)	(3)	(26)
Transfers in	10	2	11	9	32
Number participating at month end	1 755	276	345	1 455	3 831
% participating	54.6%	53.1%	46.9%	49.1%	51.5%
Bonds issued					
Maturity Value	\$128 650	\$16 275	\$21 900	\$90 275	\$257 100
Number	2 162	267	372	1 545	4 346
Refunds issued	37	8	8	56	109
Revisions in authorizations	50	4	9	67	130
Annual going rate of deductions					
G. E. Employees Savings and Stock Bonus Plan	\$769 173	\$102 656	\$132 179	\$590 396	\$1 594 404
General Electric Savings Plan	226 596	34 279	36 870	148 643	446 388
Total	<u>\$995 769</u>	<u>\$136 935</u>	<u>\$169 049</u>	<u>\$739 039</u>	<u>\$2 040 792</u>

General Accounting Division

Employee Plans (continued)

<u>Suggestion Awards</u>	<u>November</u>	<u>Total to Date</u>
Number of Awards	17	435
Total Amount of Awards	\$640	\$6 150

Employee Sales Plan

	<u>November</u>		
	<u>Total</u>	<u>Major Appliances</u>	<u>Traffic Appliances</u>
Certificates Issued	425	49	376
Certificates Voided	15	2	13

Salary Checks Deposited

	<u>October</u>		<u>November</u>	
	<u>Weekly</u>	<u>Monthly</u>	<u>Weekly</u>	<u>Monthly</u>
Richland Branch-Seattle First National Bank	779	832	796	829
North Richland Area Office - Seattle First National Bank	14	7	12	7
Richland Branch-National Bank of Commerce	47	27	57	36
Out of state banks (Schenectady staff)		3		3
Total	<u>840*</u>	<u>869</u>	<u>865**</u>	<u>875</u>

Special Absence Allowance Requests
Number submitted to Pension Board

<u>October</u>	<u>November</u>
11	9

Absenteeism (Weekly Paid Employees)
January 1 to November 20

<u>October</u>	<u>November</u>
1948	1949
2.19%	2.32%

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING

	<u>October</u>	<u>November</u>
<u>Number of Employees</u>		
On Payroll at beginning of month	179	183
Removals and transfers out	(9)	(8)
Additions and transfers in	13	4
Number at end of month	<u>183</u>	<u>179</u>
(Increase in personnel during October due principally to calculation of adjustment retroactive to April 11, 1949, under the Union Agreement)		
Net increase (or decrease) during month	4	(4)
% of terminations and transfers out	5.0%	4.4%
% of absenteeism	2.23%	3.19%

Changes by division in number of Accounting Division employees during November were as follows:

General Accounting - General: No Change

Accounts Payable: Increase of one employee

One return from leave of absence

Cost: Decrease of one employee

One termination

General Accounts: No Change

Plant Accounting: Decrease of one employee

One transfer to Design and Construction Division

* Week ended 10-23-49

**Week ended 11-27-49

5.

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Weekly Payroll: Decrease of three employees

- One new hire
- One transfer from Construction Accounting
- One transfer to Construction Accounting
- One transfer to Health Instrument Division
- Three terminations

Monthly Payroll: No Change

- One transfer from Employee and Community Relations Division
- One removal due to illness

Special Assignments: No Change

<u>Injuries</u>	<u>October</u>	<u>November</u>
Major	0	0
Sub-major	0	0
Minor	0	0

Number of Accounting Division employees as of November 30, 1949 were as follows:

	<u>Number of Employees</u>		
	<u>Non-Exempt</u>	<u>Exempt</u>	<u>Total</u>
General Accounting - General	3	3	6
Accounts Payable	15	1	16
Cost	8	1	9
General Accounts	15	1	16
Plant Accounting	24	3	27
Weekly Payroll	78	5	83
Monthly Payroll	14	1	15
Special Assignments	2	5	7
Total	<u>159</u>	<u>20</u>	<u>179</u>

Non-Exempt employees may be summarized as follows:

<u>Classification</u>	<u>Number as of</u>	
	<u>10-31-49</u>	<u>11-30-49</u>
Accounting A	1	1
Accounting B	2	2
Accounting D	5	6
Business Graduate	4	4
Clerical Working Leader	7	6
Cost Clerk A	1	1
Cost Clerk B	1	1
Cost Clerk D	2	2
Field Clerk C	3	3
General Clerk A	26	26
General Clerk B	49	47
General Clerk C	17	18
General Clerk D	13	12
General Clerk E	1	1
Office Machine Operator B	16	15
Secretary B	1	1
Steno-Typist A	2	2
Steno-Typist B	4	4
Steno-Typist C	4	3
Steno-Typist D	4	4
Total	<u>163</u>	<u>159</u>

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Open employment requests as of November 30, 1949, were as follows:

Business Graduate	9
General Clerk C	<u>1</u>
	<u>10</u>

General Accounting Divisions

	<u>October</u>	<u>November</u>
<u>Accounts Payable *</u>		
Balance at Beginning of Month	\$ 70 973	\$ 63 731
Vouchers Entered	1 003 245	751 717
Cash Disbursements	1 011 857 Dr.	760 756 Dr.
Cash Receipts	837	235
Miscellaneous Credits	<u>533</u>	<u>152</u>
Balance at end of month	<u>\$ 63 731</u>	<u>\$ 55 079</u>
Number of Vouchers Entered	1 529	1 768
Number of Checks Issued	1 087	1 175
Number of Freight Bills Paid	205	257
Amount of Freight Bills Paid	\$ 3 870	\$ 4 743
Number of Purchase Orders Received	1 000	1 066
Value of Purchase Orders Received	\$ 182 802	\$ 166 333

* General Divisions Only.

General Accounting Divisions

	<u>October</u>	<u>November</u>
<u>Cash Disbursements</u>		
Community	\$ 34 371	\$ 51 171
Design & Construction	1 661 946	1 438 527
General	2 986 553	2 830 349
Manufacturing	<u>338 502</u>	<u>708 275</u>
Total	<u>\$5 021 372</u>	<u>\$5 028 322</u>
Material and Freight	\$ 695 865	\$1 060 730
Lump Sum and Unit Price Subcontracts	395 590	535 949
CPFF Subcontracts		
Labor	684 486	489 081
Others	343 581	245 762
Payrolls (net)	1 736 064	1 910 604
Payroll Taxes	483 905	240 480
U. S. Savings Bonds	238 638	158 990
General & Administrative Expenses	200 000	200 000
Miscellaneous	<u>243 243</u>	<u>186 726</u>
Total	<u>\$5 021 372</u>	<u>\$5 028 322</u>
<u>Cash Receipts</u>		
Community	\$ 99 277	\$ 86 745
Design & Construction	33 786	214 590
General	3 663 031	4 462 864
Manufacturing	<u>22 222</u>	<u>13 248</u>
Total	<u>\$3 818 316</u>	<u>\$4 777 447</u>
<u>Detail of Cash Receipts</u>		
Hospital	\$ 46 957	\$ 45 649
Scrap Sales	13 504	9 400
Miscellaneous Accounts Receivable	8 207	4 290
Educational Program	2 263	635
Employee Sales	732	836
Refunds from Vendors	13 234	3 482
Rents	94 014	89 091
Telephone	7 279	8 154
Income From Special Funds	-0-	-0-
Bus Fares	10 624	10 593
Sales of Plant & Equipment	12 822	-0-
Refund of Advances by Subcontractors	13	180
Equipment Rental	-0-	-0-
Advances From A.E.C.	3 597 183	4 402 510
Accounts Receivable A.E.C.	-0-	-0-
Equipment Sales to Great Lakes Carbon Co.	-0-	200 000
All Other	<u>11 484</u>	<u>2 627</u>
Total	<u>\$3 818 316</u>	<u>\$4 777 447</u>

General Accounting Divisions

	<u>October</u>	<u>November</u>
<u>Number of Checks Written</u>		
Community	245	236
Design & Construction	260	243
General	1 087	1 175
Manufacturing	<u>428</u>	<u>517</u>
Total	<u><u>2 020</u></u>	<u><u>2 171</u></u>
<u>Bank Balances at End of Month</u>		
Chemical Bank & Trust Company - New York		
Contract Account	\$ 678 877	\$ 766 234
Seattle First National Bank - Richland		
Contract Account	1 561 068	1 409 410
U. S. Savings Bond Account	232 644	64 425
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	24 057	24 629
Seattle First National Bank - Seattle		
Escrow Account	59 806	59 806
Salary Account No. 3	5 000	5 000
National Bank of Commerce - Richland		
Contract Account - Manufacturing	361 498	191 725
Contract Account - Community	<u>65 629</u>	<u>48 829</u>
	<u><u>\$3 038 579</u></u>	<u><u>\$2 620 058</u></u>
<u>Travel Advances and Expense Accounts</u>		
Cash Advance balance at end of month*	\$ 11 165	\$ 13 151
Cash Advance balance outstanding over one month*	1 700	405
Traveling and Living Expenses:		
Paid Employees	14 577	15 293
Billed to Government	14 343	14 734
Balance in Variation Account at end of Month	1 313 Dr.	1 872 Dr.
<u>Hospital Accounting</u>		
Accounts Receivable		
Balance at Beginning of Month	\$ 133 948	\$ 129 823
Invoices Issued	72 984	75 134
Refunds	1 492	623
Cash Receipts	(46 953)	(46 085)
Payroll Deductions	(31 648)	(25 876)
Bad Debts Written Off	<u>-0-</u>	<u>(1 156)</u>
Balance at End of Month	<u><u>\$ 129 823</u></u>	<u><u>\$ 132 463</u></u>

* General Divisions Only.

General Accounting Divisions

ACCOUNTS PAYABLE

Accounts payable vouchers and freight bills increased in volume over the month of October. This increase is expected to continue as there has been a continuing increase in the number of purchase orders issued. Bills are being paid when due and necessary supporting data is being promptly assembled. At the month end there were 1,030 vouchers on hand in the office which required additional work to complete, 113 paid and 917 unpaid. Vouchers on hand not yet completed over 60 days old numbered 18.

Freight bills, which increased 25% during the month, are being promptly checked and journalizations to ledger accounts are current. The undistributed balance in the account on November 30 was \$341.

Audit of completed purchase orders is continuing. Approximately 4,000 orders were completed during the month leaving 6,500 yet to be audited dated prior to March 1, 1949.

COST

General Divisions' Operating Reports were issued on November 15, 1949.

Standard liquidation rates were again reviewed and some revisions were made due to the wide variance in applied-labor costs of certain divisions.

Report of Construction Work in Progress was issued on November 16, Research and Development on November 18, and Summary of Costs on December 1, 1949. The delay in the Summary of Cost report was partially due to the fact that required information from other divisions was not complete until November 24.

Assessment studies were reviewed and adjustments were made when it was felt necessary. All assessments, based in whole or part on number of personnel, are revised each month according to monthly changes in personnel.

Budget estimates of within-division costs as revised in the mid-year review were compared with previous budget estimates and it was decided to use the revised estimates for the November Operating Reports.

BUDGETARY CONTROL

Working papers, relative to the mid-year budget review, which had been prepared by other divisions covering within-division costs were received. These were reviewed as to information presented and summarized. Revised budget estimates were issued in final report form on November 25. The report included details together with consolidation for all General Divisions, the Medical Division, Research and Development, P-10 Project and 700 Area General.

Similar work was completed in connection with the Construction Budgets for General Divisions and a completed report was issued on November 23.

During the latter part of the month, work was begun on the Balance Sheet Budget and this is expected to be completed by December 9, 1949.

General Accounting Divisions

GENERAL ACCOUNTS

General Ledger Trial Balances were received from all Accounting Divisions on November 18. Hanford Works Financial Statements were completed on November 21 and Consolidated Financial Statements on November 22, 1949.

Advances from A.E.C. were reduced from \$3,500,000 at the beginning of the month to \$3,000,000 at the month end. Advances prior to June 1, 1949 were reduced by \$11,190 during November leaving an unbilled balance of \$2,117. As of November 30 this entire amount had been submitted to A.E.C. for approval on Pre-Audit vouchers and as of this date has been approved by the Atomic Energy Commission with the exception of one Du Pont travel expense voucher in the amount of \$330.50.

Inventory Reports were reviewed and revised. The revised report segregates Current Inventories and Inventories Held For Possible Future Use. A study of inventory usage was made and six month's usage was considered as Current Inventories and the balance was designated as Inventories Held For Possible Future Use. Due to the above changes and the fact that the Design and Construction Divisions furnished their inventory Report to the General Divisions late in the month, the completed statement was not released until November 30.

Considerable time was devoted to the preparation of Construction Work in Progress Report. This report for October was completed late in the month of November.

To date, the original copies of June and July accounts payable vouchers have been transferred to the Atomic Energy Commission and receipts have been obtained. Preparation is being made to transfer August APV's the first week in December. The total number of vouchers which are not wholly complete as to supporting details for June, July, and August is twelve. Of this total General Divisions has four, Design and Construction Divisions two, Manufacturing Divisions six, and Community Division none.

MEDICAL ACCOUNTING

The increase in the accounts receivable balance from \$129,823 to \$132,463 results from a marked decrease in payroll deductions (from \$31,648 in October to \$25,876 in November). Number of invoices issued and cash receipts were approximately the same as the previous month.

Out-patient invoices numbered 9,403 and amounted to \$41,310; cash invoices numbered 5,880 and amounted to \$20,633, and charge invoices numbered 3,523 and amounted to \$20,677. In-patient invoices total \$33,824.

During the month reviews of the credit policies and collection procedures of both the hospital and clinic were made and a detailed write-up of these procedures was prepared for the Division Accountant. Changes in collection procedures will be made due to these reviews. Contacts with several collection agencies were made with respect to uncollected accounts receivable and during the coming months it is expected that a number of old uncollected accounts will be forwarded to an agency for collection.

General Accounting Divisions

PLANT ACCOUNTING

Final volumes covering the June 30 plant appraisal were received from the Atomic Energy Commission this month. Information contained in the volumes is in process of being transcribed to the continuing Property Record, but progress is slow due to the limited number of men having necessary experience to interpret the detail in the volumes in terms of Property Record Units and Accounts. All entries for the first quarter of the fiscal year have been entered in the books and a memorandum Plant statement drawn from the figures. Entries covering October transactions are now in the process of being posted.

The Design Division and the Project Engineering Division are nearing completion of their job of unitizing projects included in the account 20.6 - Unclassified Property. The distribution of overheads and distributives to the Plant Accounts affected by each project is being handled by the Accounting Division of the Design and Construction Division and by Manufacturing Accounting for Project Engineering. To date, no projects completed since June 30 have been completely unitized and forwarded to this section.

As of September 30 the balance in account 20.6 - Unclassified Property was \$60,785,203.69.

Considerable time was spent in working on the form which will be used for the Plant Accounting statements covering the period June 30, 1949 to December 31, 1949.

SPECIAL ASSIGNMENTS

A number of special assignments were handled during the month and included the following:

- (1- Assistance to the D&C Accounting Division in connection with control of and excessing of major equipment. Also some additional work was done in connection with the National Carbon contract and graphite costs.
- (2- An audit and review of procedures and records of the Surplus, Salvage, and Scrap Section.
- (3- Revisions to the proposed accounts payable voucher system were made and revised drafts were forwarded to interested individuals for further comment.
- (4- Preparation of revised account classifications for recording Design and Construction costs.

General Accounting Divisions

PAYROLLS

During the month of November there were 149 removals from payroll of which 74 were removals due to lack of work and there were 81 additions to the payroll, including transfers from other units of the Company, resulting in a net decrease of 68 employees on the payroll.

* * * * *

Employee's Withholding Exemption Certificates (U. S. Treasury Department Form W-4) were addressographed for weekly and monthly paid employees and distributed to the divisions on November 25, 1949. The divisions were requested to arrange for employees to complete the forms and return them to Payroll on or before December 16, 1949, in order that Payroll may have current information as to employees' claims for withholding exemptions.

* * * * *

Armistice Day, Friday, November 11, 1949, was observed as a national banking holiday and, as a convenience to General Electric employees, weekly salary checks for the week ended November 6, 1949, were distributed to employees on Thursday, November 10, 1949, instead of on Friday, November 11, 1949. Arrangements were made with the banks in Richland to re-open on Thursday, November 10, 1949, between 5 P.M. and 7 P.M.

Thanksgiving Day, November 24, 1949, was an observed holiday at Hanford Works and weekly salary checks for employees of the outer areas for week ended November 20, 1949, were delivered to the areas on Wednesday, November 23, 1949, between the hours of 8 P.M. and 11 P.M. instead of on Thursday, November 24. Salary checks for employees in Richland, North Richland, and Pasco were delivered to the division representatives in the usual manner on Friday, November 25, 1949.

In order to complete preparation of the weekly payroll on each of the above weeks approximately one day earlier than normally, overtime was scheduled and the normal work schedules of payroll employees were changed to advance the cycle of payroll preparation by approximately eight hours.

Classification changes received late in Payroll from Labor Relations and Wage Rate Division, for employees who were down-graded, resulted in overpayments of \$8.00 during the month. Repayment of this amount was made by payroll deductions in November. The unpaid balance of overpayments made in October amounting to \$9.42 resulting from the same cause was also collected by payroll deduction in November.

* * * * *

Under the General Electric Employee Savings and Stock Bonus Plan, 152 participating employees withdrew from the Plan 700 U. S. Savings Bonds having a maturity value of \$37,375.00. U. S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in October were delivered to employees on November 25, 1949. There were 728 U. S. Savings Bonds and 3,618 Custody Receipts distributed to employees.

* * * * *

General Accounting Divisions

PAYROLLS (Cont.)

Payroll deductions for Community Chest subscriptions were made during October and November as follows:

	<u>Number of Employees</u>	<u>Amount</u>
Payroll for week ended 10-23-49	928	\$2,522.15
Payroll for week ended 11-13-49	116	329.75
Monthly Payroll - October	319	1,624.55
Total	<u>1,363</u>	<u>\$4,476.45</u>

* * * * *

Permission to defer one week of their 1949 vacations until 1950 was granted by Division Managers during November to 21 weekly paid employees and 22 monthly employees. To date permission to defer one week of vacations has been granted to 51 weekly paid employees and 45 monthly employees.

* * * * *

In connection with the annual re-canvass in December of employees not participating in the Pension Plan, divisions have been furnished lists of employees segregated as follows:

1. Employees who have previously signed Waiver of Participation forms.
2. Employees who are participants but who have discontinued contributions.

In addition to the above, divisions were furnished Application Register Cards, Waiver of Participation cards and Pension Plan Booklets for those employees who had previously signed Waiver of Participation. For those employees who had discontinued contributions, divisions were furnished with statements to be signed by employees who may wish to resume contributions.

* * * * *

The Addressograph Section of Weekly Payroll addressographed approximately 59,550 items for other divisions during the month of November in addition to regular routine addressograph work.

* * * * *

There were 59 time cards received late in Weekly Payroll during the month of November as follows:

<u>Week Ended</u>	<u>Number of Time Cards Received Late</u>
11-6-49	9
11-13-49	47
11-20-49	3
11-27-49	0
Total	<u>59</u>

General Accounting Divisions

PAYROLLS (Cont.)

Divisions involved were notified of the receipt of these late time cards and were again reminded of the resulting additional work in Weekly Payroll due to the special handling which must be given to late time cards each week.

* * * * *

The new Group Health Insurance Plan was accepted by more than 75% of eligible Hanford Works employees and will be placed into effect December 1, 1949. At the end of November applications had been received in Payroll from 6,951 employees (93.8% participation). The initial deduction of employee contributions amounting to \$27,203.55 covering the month of December, was made from salary checks of weekly paid employees for the week ended November 27, 1949 and from salary checks of monthly paid employees for the month of November 1949.

* * * * *

Hanford Atomic Metal Trades Council requested deduction of union dues to begin as soon as possible. In order to have a practical plan for administration of the check-off to present to H.A.M.T.C. for their consideration, representatives of Weekly Payroll Division met with representatives of Labor Relations and Wage Rate Division on November 9, 1949 to discuss a procedure for check-off of union dues. The proposed procedure was to be presented to H.A.M.T.C. on November 10, 1949.

Mr. Foster, President of H.A.M.T.C., advised Labor Relations and Wage Rate Division and Weekly Payroll Division on November 10, 1949, that the Council had a meeting on November 9, and had been unable to reach a decision relative to which groups within the Council wanted the check-off and to whom checks were to be made payable, etc. He indicated that the matter would be discussed at a future meeting of the Council and the Company would be notified of decisions reached.

At the end of November no further information had been received from the Council with respect to the check-off of union dues.

* * * * *

Calculation of salary adjustments retroactive to April 11, 1949, resulting from the Union Agreement was completed and checks covering the adjustment were distributed to employees on November 18, 1949, approximately six weeks in advance of the original estimated delivery date. Payments were made to 4,578 active employees and 381 employees who have been removed from the payroll. The gross amount of the payment was \$227,638.22.

* * * * *

To promote good employee relations every effort is being made by Payroll Division to expedite all claims submitted by employees under the Insurance Plans offered by the Company. In several cases employees' claims have been delayed before reaching Payroll and interested divisions have been requested to render assistance in preventing a recurrence in the future.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - NOVEMBER 1949

SUMMARY

There were no lost time injuries during the month. The injury frequency rate for the year to date has been reduced to 0.71.

Eight minor fires in the industrial areas resulted in a loss of \$150.00.

Volume remained the same in the process laundry. A decrease in the 700 Area Laundry volume resulted in lay-off of several employees. It is expected, however, that volume in both laundries will increase within a short time due to the anticipated construction program.

The amount of mail handled increased further in November. The number of pieces handled, 403,223, represents approximately 100% increase since June.

Arrangements have been made for the Office Equipment Section to handle all office equipment requirements for the Construction Program.

The records inventory program is continuing at a satisfactory rate. Records inventory of the Manufacturing Divisions was completed during the month.

Patrol and Security personnel was allowed to decrease further during the month, however, it is anticipated that the Construction Program will necessitate resumption of hiring in January or February.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - NOVEMBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	<u>Beginning of Month</u>	<u>End of Month</u>	<u>Increase</u>	<u>Decrease</u>
Staff	3	3		
Patrol and Security	582	579		3 (a)
Safety and Fire Protection	151	149		2 (b)
Office Services (General Services, Clerical Services, and Records Control)	209	208		1 (c)
	—	—	—	—
TOTALS	945	939		6

NET DECREASE: 6

(a) - Patrol and Security

- 2 - Returned from Leave of Absence (Patrol)
- 3 - Removed from Roll due to Leave of Absence (Patrol)
- 1 - Termination (Patrol)
- 1 - Discharged (Patrol)

(b) - Safety and Fire Protection

- 2 - Terminations (Fire Protection)

(c) - General Services

- 2 - Rehired
- 1 - Returned from Leave of Absence
- 4 - Removed from roll due to Reduction of Force.

Clerical Services

- 6 - New Hires
- 1 - Transferred from Purchasing and Stores Division.
- 1 - Termination
- 5 - Transferred to other Divisions
- 1 - Discharged

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury 32
Accumulated Exposure Hours since last Major Injury 1,301,677
Major Injury Frequency Rate (start-up to date) 0.85

	<u>October</u>	<u>November</u>	<u>Year to Date</u>
Major Injuries	1	0	10
Sub-Major Injuries	4	3	37
Minor Injuries	310	279	3801
Exposure Hours	1,263,155	1,220,183	14,118,562
Major Injury Frequency Rate	0.79	0.0	0.71
Major Injury Severity Rate	0.002	0.0	0.029
Minor Injury Frequency Rate	2.45	2.29	2.69

Sub-Major Injury No. 161

On November 2, 1949, an employee of the 100-F area Maintenance Division received a transverse fracture of the distal phalanx of the left thumb when his thumb was caught between two cables. The catching of his thumb between two cables was brought about when he took hold of the cables in order to guide them correctly. The cables were pulled taut by the impact of a rod which slipped into the unit causing one of the cables to snap catching his left thumb.

Sub-Major Injury No. 162

On November 25, 1949, an employee of the Transportation Division working at the L.D.S. Church incurred a fracture of the right wrist when he attempted to grasp a truss that was being swung into position on the walls. The employee was reaching for the truss but it struck his hand unexpectedly because of a gust of wind.

Sub-Major Injury No. 163

On November 30, 1949, at approximately 1:30 P.M., an employee of the Minor Construction group of the Project Engineering Division fell while attempting to push a welding machine which was stuck in heavy sand. The pickup truck which was being used to pull the welding equipment surged forward at the time of his falling and pulled the left rear wheel of the welding machine over both of the injured's legs just below the knee causing multiple contusions and abrasions which because of the extensive medical treatment necessary necessitated that the injured be placed on a guided work basis.

100 Areas Activities

A survey of lighting conditions throughout the 105-B Building was made relative to a suggestion regarding eye-strain in some locations. Proper corrective action is being taken.

A list of dangerous chemicals used in the 100-B and 100-D Areas, as requested by the Medical Division, has been compiled and forwarded to Dr. B. C. Scudder.

Plant Security and Services Divisions

A survey of lighting conditions throughout the 105-D Building was made relative to a suggestion regarding eye-strain in some locations. Proper corrective action is being taken.

An unsafe condition of a low hanging telephone cable over the R. R. track at 105-DR has been eliminated by removal of dead cable.

An unsafe practice of dropping cars at a switch near 183-B Building has been eliminated. Practice had been followed due to a removal of a section of R. R. track which created a dead end and the lack of a convenient passing track by which engine could get around to other end of car being delivered to the 183-B Building. Instructions have been issued to train crews to use either the 105 passing track or the Audrey Wye outside the Area.

Work has been started on the addition to the round house.

Disorderly arrangement of compressed gas cylinders was a recurrent condition at the 108-F Building. Definite responsibility was determined and the condition eliminated.

The Power Division obtained a vacuum cleaner to clean up dry chemical spillage in 183 and 189 Buildings, 100-F Area. This will reduce dust hazard exposure.

A permanent guard for the feed mill at the feed barns has been ordered. However the mill has not been in operation.

The Power Division obtained vacuum cleaners to clean up any spillage of dry chemicals at the bag elevators in 182 and 190 Buildings, 100-H Area. These cleaners will reduce the dust hazard exposure.

The advisability of providing a metal oil storage cabinet in fan cell #6, 115 Building, 100-H Area, was considered and agreed upon.

200 Areas Activities

A publicity campaign is under way in the 200-East Area in an attempt to reach December 28 without lost time to complete the fourth year for this area.

Supervisor's Safety Training Meetings are being held in the 200 Areas for all divisions. So far, the classes have met with favorable comment.

300 Area Activities

It was found that service groups (Maintenance, etc.) were using the emergency escape hatches from the 3706 attic for purpose of regular entrance and exit. This matter was brought to the attention of the proper supervision.

Storage buildings were inspected by the Area Inspection Committee. The overall condition was found to be good. The 303 Storage Area was reported to be in excellent condition:

The new H. I. Building will be accepted into the area in the near future. At that time a few minor items will be changed so that the building meets the area standards.

Plant Security and Services Divisions

700 - 1100 Areas Activities

The west gate of the 700 Area was opened to vehicular traffic.

A sidewalk and parking lot were built across the street from the 770 Building on Knight Street.

The report on the sub-standard condition of basement stairs in the A and B type houses in Division 1 was discussed and turned over to the Manager of the Community Divisions for further action.

The No-Accident Award Plan was discussed. This plan has been approved by the A.E.C.: Appropriate posters are being prepared. Revised Instructions Letter No. 29, Safety Bulletin No. A-2 and a publication in the Works News have been prepared for distribution.

An inspection of a power paper cutting machine in the Printing Section was made and recommendations submitted to improve the safety of the operation.

FIRE PROTECTION

Hose boxes were filled and placed in service at the P-11 Project.

The oil burner installation at the Minor Construction Office at Hanford was inspected and found satisfactory. Additional extinguishers were installed.

Dirt has been graded up over underground water lines and around hydrants at White Bluffs in an attempt to prevent freezing.

Eight chemox masks belonging to the "S" Division were rebuilt.

A preliminary inspection at completion of the Animal Farm Project was made. Only a few minor hazards were found.

The 100-H Area fire alarm system was tested and placed in service. Several parts of the system are not up to standard. This has been brought to the attention of the Electrical Division.

The speed with which firemen could put the chemox mask in service while wearing bunker coats was demonstrated. The timing was very satisfactory.

A special committee inspected the 3706 Building and found housekeeping to be very good with the exception of two lab rooms.

A preliminary inspection for completion of the reconditioning project of the 321 Building was made. Only a few minor conditions remain to be cleared up.

Control switches to improve the safety of the furnace operation at Pasco were installed in accordance with our recommendation.

Additional plans which included the fire detector system were approved for the 108-F Building.

Plans have been completed to discontinue inspection service on the 4-12 and 12-8 shifts in 100-B, 100-D, 100-F, and 200-E Areas. This will go into effect 12-5-49.

Plant Security and Services Divisions

Industrial Fires

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Transportation	Pasco	1	Wind blew burning paper	None
"PP" Division	300	1	Spontaneous Ignition	None
Electrical	100-B	1	Electric	\$150.00
Electrical	100-F	1	Electric	None
TOTAL		4	TOTAL	\$150.00

Industrial Investigations

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Minor Construction	100-D	2	Welding	None
Health Instrument	200-W	1	Heating Unit (Hot Plate)	None
Technical	200-W	1	Spontaneous Ignition	None
TOTAL		4	TOTAL	None
<u>TOTAL NUMBER OF FIRES</u>		<u>8</u>	<u>TOTAL LOSS</u>	<u>\$150.00</u>

OFFICE SERVICES DIVISION

General Services

Laundering volumes were as follows:

Plant Laundry (Building 2723)

	<u>October</u>	<u>November</u>
Coveralls - Pieces	23,510	28,870
Towels - Pieces	8,854	7,824
Miscellaneous - Pieces	61,317	61,196
Total Pieces	98,681	97,890
Total Dry Weight - Lbs.	141,058	141,206

Richland Laundry (Building 723)

	<u>October</u>	<u>November</u>
Flatwork - Pieces	55,047	52,599
Rough Dry - Pieces	30,092	21,289
Finished - Pieces	3,017	3,075
Total Pieces	88,156	76,963
Total Dry Weight - Lbs.	57,301	50,026

Plant Security and Services Divisions

Monitoring Section (Building 2723-U)

	<u>October</u>	<u>November</u>
Poppy Check - Pieces	72,861	75,463
Scaler Check - Pieces	92,132	93,116
Total Pieces -	164,993	168,579

Clerical Services

Mail Room

The volume continues to increase in this section. Mail volume has almost doubled since June.

	<u>October</u>	<u>November</u>
Pieces of Internal Mail Handled	339,876	340,167
Pieces of Postal Mail Handled	58,792	61,428
Pieces of Registered Mail Handled	896	1,064
Pieces of Insured Mail Handled	235	361
Pieces of Special Delivery Mail Handled	140	203
Total Mail Handled	399,939	403,223
Total Amount Postage	\$1,375.53	\$1,467.20
Teletypes Sent Out	530	712
Teletypes Received	651	735
Total Teletypes Handled	1,181	1,447
Total Number of Store Orders Filled	1,268	1,364

Office Equipment

A meeting was held with representatives of Construction and Atkinson & Jones regarding office equipment requirements and the handling of office machine repairs.

Construction will furnish us with an inventory of all material on hand and a statement of their requirements for the construction program. This inventory and the requirement list will include both D & C and C.P.F.F. Contractors.

A meeting was held on a cooperative program of getting records into storage, and of our securing the file cabinets. A satisfactory procedure was worked out and is now being followed. Permission was secured from the Atomic Energy Commission to separate the excess office equipment into the three following categories: (1) Scrap, (2) Salvage which is non-useable but from which parts may be secured for repair of other furniture, and (3) Useable or repairable furniture.

Definite procedures were established with the General Accounting Section in regard to the property and cost records to be handled by Office Equipment.

Plant Security and Services Divisions

	<u>October</u>	<u>November</u>
Office Machines repaired in Shop	126	134
Office Machines service calls	<u>256</u>	<u>323</u>
Total Machines Serviced	282	366

Printing

Work continues to be heavy and it will be necessary for us to secure additional help to handle any increased volume.

	<u>October</u>	<u>November</u>
Multilith Orders Received	227	265
Multilith Orders Completed	215	255
Multilith Orders on hand at month end	66	76
Mimeograph Orders Received	2078	2048
Mimeograph Orders Completed	2078	2048
Mimeograph Orders on hand at month end	0	0
Ditto Orders Received	1012	1294
Ditto Orders Completed	1012	1294
Ditto Orders on hand at month end	0	0

Stenographic Services

The turn-over in this Section continues to be very high due to many transfers from here to permanent assignments.

	<u>October</u>		<u>November</u>	
	<u>Hours</u>	<u>Quantity</u>	<u>Hours</u>	<u>Quantity</u>
Dictation and Transcription	0	0	0	0
Machine Transcription	1:30	2	6:8	10
Letters	43:15	121	76:5	120
Manual and Procedures	16:00	30	4:5	25
Duplicating - Stencils, Ditto	117:15	269	282:6	458
Special	406:00	478	741:9	1,513
Training	61:15	---	105:50	6
Unassigned time during month	12:00	---	79:00	8
Termination	---	---	4:00	1
Safety & Security Meetings	---	---	7:30	---
Accident & Health Ins. Meeting	---	---	4:00	---
Illness	---	---	68:50	---
Assembling	---	---	29:20	---
Total Hours	657:15		1,409:80	
Employees loaned to other Divisions	900:00		1,161:20	
Total Hours Available	1,565:15		2,571:00	

Plant Security and Services Divisions

) Records Control Division

	<u>October</u>	<u>November</u>
Records received and processed:	177	180

Summary of Records received and processed in November:

Accounting Division	14	#5 Oxford Files		
Construction Division	21	Standard Records	Cartons	
Stores Division	6	"	"	"
Technical Division	26	"	"	"

Sub-Contractors:

Morrison-Knudsen - G-1012	9	#1 Oxford Files		
	4	#5	"	"
Morrison-Knudsen - G-160 & G-222	98	#1	"	"
	2	#2	"	"

TOTAL	180
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Records re-boxed and re-processed into new system:

Manufacturing Accounting	58	Standard Type Boxes		
Maintenance Division	32	"	"	"
Purchasing and Stores Division	193	"	"	"
Construction Division	36	"	"	"
Design Division	5	"	"	"

TOTAL	324
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Standard Records Cartons issued:

Loaned to Atkinson & Jones	200
General Electric Issue	347
Re-boxing purposes	324

TOTAL	871
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Records inventory of Manufacturing Divisions has been completed.

Records inventory of the Reactor Division, Separations Division, and Power and Mechanical Divisions of the Design and Construction Divisions, have been completed. Only the administrative and staff sections of the Design and Construction Divisions remain to be inventoried.

Inventory of Medical Divisions records was begun on November 28, 1949.

Plant Security and Services Divisions

Following is a tentative list of places where boxes have been furnish to be used in moving records to Records Center, thereby releasing the approximate number of cabinets listed:

Construction Division; Cost Engineering	25 Files
Construction Division; Accounting	40 Files
Construction Division, Sub-Contractor Payrolls	10 Files
Operating Purchasing Division	12 Files
Personnel Files	30 Files
Security Patrol Divisions	6 Files

Contacts have been made with Giffels & Vallet, Inc., at their request relative to turning over their records on Contract G-151 to the General Electric Company.

Agreement was reached with Atkinson & Jones by which Atkinson & Jones records will be reviewed and all inactive records stored in Atkinson & Jones Records Building. The procedure used by General Electric Records Control Division will be used by Atkinson & Jones in storing their records.

Preliminary retention periods have been established by Plant Security and Services Divisions for their records.

Metal shelving for Records Center has been received and thirty-two sections erected.

Records are being received and processed in accordance with the established procedure.

Forms Control and Methods Engineer

Thirty-seven requests for new or revised forms were reviewed during November. Seven forms were found to be unnecessary, five forms were re-designed for better usability, two forms were re-designed to make on the project printing possible.

The study of all forms being used by the Medical Division is continuing and should be completed within the next ten days. The Design and Construction Divisions have delegated one of their employees to accumulate copies of all Design and Construction forms for the purpose of review.

Savings created as a result of forms and methods studies made during the month of November amounted to approximately \$2,261.00.

PATROL AND SECURITY

General

Beginning November 1, Security Patrol established a Detex System Clock Patrol, consisting of five stations, in the 101 Area at Hanford.

A new post was created in the 200-W Area on November 4, which will be designated as the "Exclusion Area Motor Patrol". The purpose of this post is to afford inspection and patrol of all exclusion areas within the 200-West Area.

Effective November 4, the Observer Post of Motor Patrol #1, 200-West Area, was discontinued.

Plant Security and Services Divisions

On November 6, 1949, the patrolman assigned to the 221-T Vehicle Gate, 200-West Area, started making frequent foot patrols of the 221-T Area checking for holes in the fence, unauthorized persons and anyone loitering adjacent to the fence line.

Beginning November 10, entrance requirements to plant exclusion areas were changed. This change was in regard to showing the Photo Identification Pass when displaying the Area Badge (without photograph) at the entrance to the exclusion areas. For reference refer to G. E. Security Bulletin No. 46.

On November 10, Security Patrol Bulletin No. 3 entitled "Letter from G. R. Prout, Vice President, General Electric Company" was issued. This bulletin pertained to the disclosure of information to either the public or the press, and that such information should be given out only by authorized personnel.

The law enforcement training courses conducted by agents of the Federal Bureau of Investigation for the Security Patrol and employees of the Atomic Energy Commission Security Division were completed November 14.

On November 14, a memorandum was directed to the G. E. Security Division from the superintendent of the "S" Division under the subject "S Division Exclusion Areas". This letter pertained to the control of personnel cleared for admission to "S" Division Exclusion Areas in order to minimize the number of people entering these areas for reasons of safety and security.

Security Patrol Procedure Memorandum No. 26, Revision No. 2, regarding "Lost or Forgotten Passes" was issued on November 16. This new procedure supersedes all previous instructions concerning the lost or forgotten photo identification passes.

A memorandum entitled "Off-Site Transmittal of Classified Documents, Drawings and Specifications" was issued to all Division Heads on November 17. The memorandum stated that the off-site transmittal of classified documents should be processed through either the 300, 700 or Design and Construction Classified Files or the Blueprint Reproduction Section.

On November 18, 1949, a memorandum entitled "Exclusion Areas Identification", Revision #1, was directed to all areas of Security Patrol. This memorandum was issued by the Chief Supervisor of Security and Patrol in order to establish uniformity in all plant areas for identification control at exclusion areas.

Effective November 25, a direct line telephone was placed in operation between the Emergency Officer in Richland and the 100-H Area.

On November 28, there were fifteen stations added to the Detex Clock System in the 101 Area.

Effective November 29, the 3705 Building, the new Health Instrument building, was inclosed within the 300 Area perimeter fence. The inside fence used during construction was torn down. This building will be checked during off-shift hours in the same manner as other buildings in the 300 Area.

The "QC" orientation talk was given by a member of the Security Division to 51 employees who had received their "QC" clearance during the month of November.

PATROL

The 200 Areas handled 79 process escorts between the areas.

Plant Security and Services Divisions

Requests handled, totaled 792, consisting mainly of opening doors, gates and providing escorts for employees of other departments.

A total of 72 Unusual Incident Reports were received, consisting mainly of lost badges, pencils, contraband picked up at barricades, traffic accidents and fires.

Patrol supervision handled 10 First Aid cases during the absence of the Area Nurse.

Classified escorts totaling 36 were handled during the month.

Practice evacuations were held as follows:

100-F Area	11-9-49	8:57 PM
200-E Area	11-22-49	9:00 PM
200-E Area	11-22-49	2:13 AM
100-D Area	11-23-49	9:57 AM
200-E Area	11-23-49	6:30 PM
200-E Area	11-26-49	2:15 AM
100-B Area	11-30-49	1:05 PM

Practice Blackouts were held as follows:

100-H Area	11-10-49	7:02 PM
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Military Test Blackouts were held as follows:

100-B Area	11-9-49	9:01 PM
100-D	11-9-49	9:11 PM
100-F Area	11-9-49	8:57 PM
100-H Area	11-9-49	9:00 PM
200-E Area	11-9-49	8:59 PM
200-W Area	11-9-49	8:56 PM

Arrest Summary

	<u>October</u>	<u>November</u>
Warning tickets issued	0	0
Verbal warning given	8	29
Citation tickets issued (traffic only)	1	0

Accident Summary

Total accidents	5	5
Government permits revoked	0	0

Training

The Training Courses held during the month were as follows:

Pistol	2	Hours
Security	1	
Operation of Badge House	1	
Safety	1/2	
Health	1/2	
Security Patrol Policies	1 1/2	
Proper Display of Uniform	1	

Plant Security and Services Divisions

First Aid

1/2 Hour

The Safety Bulletin Board which was constructed during the month of May was also used during the month of November.

The competitive Safety Program is being continued.

The film for Security Patrol Training was received November 18.

An instructor at the range attended the Supervisor's Training Course November 11 through November 18.

Testing of all area hand guns was started November 22.

A check was completed of all area M-8 tanks, equipment and machine guns on November 29.

On November 25, the Training Lieutenant started taking pictures to be used in the Security Division Training Program.

An inspection and tabulation was completed for the Patrol Safety Contest for the month of November.

SECURITY

There were 209 Security meetings held and attended by 2,993 General Electric employees during the month.

The following Security Bulletins were issued to all Operations personnel during the month:

- Bulletin No. 45 "Misuse of Combination File Cabinets"
- Bulletin No. 46 "Entrance into Plant Exclusion Areas and Perimeter Barricade Security"
- Bulletin No. 47 "The Last Defense"

A security sign was posted throughout the plant area on November 3 and 4 bearing the inscription "Know Your Visitor or 'No' his Request for Classified Information. Always Check Credentials".

Employee Clearance

Class "Q" clearances received on old employees this month	0
Class "Q" clearances received on old employees to date	4,457
Class "Q" clearances received on new employees this month	47
Class "Q" clearances received on new employees to date	6,209
Class "Q" clearances received on both old and new employees since February 17, 1947.	10,666
Formal "P" clearances awaiting change to "Q"	20
Authorization clearances issued this month	59

Plant Security and Services Divisions

Statistical Summary of Outstanding Area Badges

October				November					
	A	B	C	Total		A	B	C	Total
100-B	586	1691	469	2746	100-B	1736	560	473	2769
100-D	711	921	519	2151	100-D	708	934	523	2165
100-F	792	1588	487	2867	100-F	768	1627	487	2882
100-H	693	935	308	1936	100-H	713	1039	410	2162
200-E	949	1747	345	3041*	200-E	910	1768	360	3038*
200-W	1429	1661	350	3440	200-W	1401	1676	364	3441
200-N	36	870	131	1037	200-N	35	883	134	1052
300	1345	1575	228	3148	300	1341	1609	239	3189

*Includes 36 "A" badges at Riverland Yards

*Includes 37 "A" badges at Riverland Yards

Visitor or Temporary Badges

Area	October	November
100-B	442	462
100-D	872	898
100-F	746	781
100-H	165	210
200-E	667	691
200-W	579	630
200-N	985	992
300	1279	1350
TOTAL	5735	6014

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to AEC this month: Three medical consultants.
 Total companies forwarded to AEC last month: 6 Personnel: 54
 Total companies forwarded to AEC to date: 212 Personnel: 2,363

Total companies cleared for "restricted data" this month: 7 Personnel: 82

Total companies cleared for "restricted data" last month: 5 Personnel: 42

New companies forwarded to the Atomic Energy Commission this month:

Three medical consultants only:

Dr. Herman Smith Dr. Robert A. Moore, Dean
 4801 Ellis Avenue Washington University Medical School
 Chicago, Illinois St. Louis, Missouri

William S. McNary, Director of Michigan Hospital Service
 Detroit, Michigan

Plant Security and Services Divisions

) Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "Q"	78
Formal "P"	21
Emergency "Q"	4
Reinstatement of "Q"	1

[REDACTED]

HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING NOVEMBER 30, 1949

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class.</u>	<u>Unclass</u>
MEDICAL DIVISION						
I. Visitors to this Works						
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Medical consultation	W. D. Norwood P. A. Fuqua	11-11-49	11-12-49	X	
H. Smith Consultant Chicago, Illinois	Consultation on medi- cal long range planning	W. D. Norwood P. A. Fuqua L. C. Pullen	11-11-49	11-12-49	X	
R. A. Moore Consultant Washington University Medical School St. Louis, Missouri	Consultation on medi- cal long range planning	W. D. Norwood P. A. Fuqua L. C. Pullen	11-11-49	11-12-49	X	
W. S. McNary Consultant Michigan Hospital Service Detroit, Michigan	Consultation on medi- cal long range planning	W. D. Norwood P. A. Fuqua L. C. Pullen	11-11-49	11-12-49	X	
J. H. Sterner Atomic Energy Commission Rochester, New York	Inspection of plant for survey of hazards and Public Health	W. D. Norwood P. A. Fuqua R. R. Sachs	11-17-49	11-21-49	X	
G. A. Hardie Atomic Energy Commission Division of Medicine Washington, D. C.	Inspection of plant for survey of hazards	W. D. Norwood P. A. Fuqua	11-17-49	11-21-49	X	

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Name - Organization Purpose of Visit Person Contacted Arrival Departure Class Unclass Restricted Data Areas

DESIGN DIVISION

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Class</u>	<u>Unclass</u>	<u>Restricted Data</u>	<u>Areas</u>
I. Visitors to this Works								
R. K. Patterson Charles T. Main Company Boston, Massachusetts	Design consultation	J. W. Conley	10-28-49	11-4-49	X			100-D XXX
R. T. Colburn Charles T. Main Company Boston, Massachusetts	Design consultation	J. R. Kelly	11-1-49	11-5-49	X			100-H XXX 100-D XXX
L. L. Ferguson General Electric Company Schenectady, New York	Design, construction, planning and scheduling of West Milton Reactor	P. M. Murphy D. E. Irons	11-7-49	11-9-49	X		200-E 221-B 200-W 221-T, 234105	100-D 105 100-H 234105
R. W. Moulton University of Washington Seattle, Washington	Work on thesis in connection with Education Program	P. E. Lowe H. S. Isbin T. F. Robinson	11-7-49	11-8-49	X			100-F 105
S. S. Ketchen Charles T. Main Company Boston, Massachusetts	Design consultation	J. W. Conley	11-14-49	11-14-49	X			
II. Visits to other Installations								
V. D. Nixon to: General Electric Company Schenectady, New York	Interview for assign- ment	L. L. Ferguson R. S. Neblett	11-1-49	11-3-49	X			
T. Williams to: Kellex Corporation New York, New York	Design conference	G. White, Jr.	11-11-49	11-25-49	X			

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data Class</u>	<u>Unclass Areas</u>
V. D. Nixon to: General Electric Company & Gen. Engineering & Con. Lab. Schenectady, New York	On loan to construction at that installation	L. L. Ferguson	11-14-49	Approximately 1 year	X	
R. C. Hollingshead to: Gen. Eng. & Cons. Lab. Schenectady, New York	Consultation on electrolytic cell design	D. E. Carr L. G. Gitzendanner	11-14-49	11-18-49	X	
E. W. Seckendorff to: Kellogg Corporation New York, New York	Consultation on drawings and general policy matters	G. White, Jr.	11-28-49	12-1-49	X	
E. W. Seckendorff to: General Electric Company Schenectady, New York	Design matters pertinent to present work	R. S. Neblett B. R. Prentice	12-1-49	12-2-49	X	
E. W. Seckendorff to: Knolls Atomic Power Lab. Schenectady, New York	Correlation and clarification of design information on SPRU	J. Marsden	12-1-49	12-2-49	X	
J. W. Conley to: Charles T. Main Company Boston, Massachusetts	Conference on sub-contract	R. A. Moncrieff	11-28-49	12-2-49	X	
ELECTRICAL DIVISION						
G. M. Hawley Blaw-Knox Corporation Pittsburg, Pennsylvania	Conference on electrical systems for general power processes	H. A. Carlberg	11-28-49	12-2-49	X	
HEALTH INSTRUMENT DIVISION						
I. Visitors to this Works P. E. Church University of Washington Seattle, Washington	Meteorology consultation	D. E. Jenne	11-18-49	11-20-49	X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>			
					<u>Class</u>	<u>Unclass</u>	<u>Areas</u>	
G. A. Hardie Atomic Energy Commission Division of Medicine Washington, D. C.	Inspection of plant for survey of hazards	F. E. Adley	11-21-49	11-21-49	X		X	
J. H. Sterner Atomic Energy Commission Washington, D. C.	Inspection of plant for survey of hazards	F. E. Adley	11-21-49	11-21-49	X		X	
W. Smith Washington State Fisheries Olympia, Washington	Observe extent of salmon spawning in Columbia River	M. L. Mickelson	11-10-49	11-10-49			X	Barricade
D. Johnson Oregon Fish Commission Portland, Oregon	Observe extent of salmon spawning in Columbia River	M. L. Mickelson	11-10-49	11-10-49			X	Barricade
R. R. Harris Columbia River Advisory Board Portland, Oregon	Water pollution and public health	H. M. Parker F. E. Adley	11-21-49	11-23-49			X	
E. C. Jensen Columbia River Advisory Board Seattle, Washington	Water pollution and public health	H. M. Parker F. E. Adley	11-21-49	11-23-49			X	
C. M. Everts Columbia River Advisory Board Portland, Oregon	Water pollution and public health	H. M. Parker F. E. Adley	11-21-49	11-23-49			X	
E. F. Eldridge Columbia River Advisory Board Olympia, Washington	Water pollution and public health	H. M. Parker F. E. Adley	11-21-49	11-23-49			X	

INSTRUMENT DIVISION

I. Visitors to this Works

DECLASSIFIED

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		<u>Areas</u>
					<u>Class</u>	<u>Unclass</u>	
R. Tower C. A. Yost Company Seattle, Washington	Discuss problems of Proportioneer pump	C. O. Clemetson R. C. Mann	11-28-49	11-28-49	X		300 321
II. Visits to other Installations							
T. G. Watkins to: Gen. Engr. & Cons. Lab Schenectady, New York	Consultation on instru- mentation of Phase III of 234-5 Program	E. Hatfield	11-9-49	11-11-49		X	
T. G. Watkins to: Panellit, Incorporated Chicago, Illinois	Determine procedure for repair of Panellit gauges	- - -	11-6-49	11-9-49		X	
PROJECT ENGINEERING DIVISIONS							
I. Visitors to this Works W. F. Hauserman E. F. Hauserman Company San Francisco, California	Regarding awarding of contract	S. F. Schure M. R. Dempster	11-15-49 11-22-49	11-15-49 11-22-49		X	100-F XXX
MANUFACTURING MANAGEMENT							
I. Visitors to this Works T. H. Kirby Argonne National Laboratory Chicago, Illinois	Consultation on electri- cal distribution and materials testing reactor program	C. N. Gross H. D. Middel W. M. Mathis H. A. Carlberg	11-28-49	12-2-49		X	
G. N. Hawley Blaw-Knox Corporation Pittsburgh, Pennsylvania	Conference on electri- cal systems for general power processes	C. N. Gross H. D. Middel W. M. Mathis H. A. Carlberg	11-28-49	12-2-49		X	

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"P" DIVISION

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>			
					<u>Class</u>	<u>Unclass</u>	<u>Areas</u>	
I. Visitors to this Works								
C. G. Kruso Internat'l Business Machines Portland, Oregon	Install IBM machines in 105-II Control Room	J. R. Young	11-21-49	11-21-49	X			100-H 105
L. L. Ferguson General Electric Company Schenectady, New York	Consultation on design matters	J. H. Warren	11-8-49	11-8-49	X			100-D 105 100-II 105
POWER DIVISION								
I. Visits to other Installations								
J. P. Langan to: Charles T. Main Company Boston, Massachusetts	Consultation with Archi-R. A. Monerleff test Engineer regarding design of 100-DR Area		11-28-49	12-2-49	X			
PURCHASING AND SILVES DIVISION								
I. Visitors to this Works								
A. R. Wlogand United Truck Lines Pasco, Washington	Haul Jr. Cave unit to 300 Area	H. O. Monson	10-31-49	10-31-49	X			300 XXX
R. R. Hickenbottom Lee & Estes Pasco, Washington	Machinery for Mainten- ance Division	H. O. Monson	11-2-49	11-2-49	X			300 XXX
J. Tallont United Truck Lines Pasco, Washington	Deliver 1 skid of machinery	H. O. Monson	11-7-49	11-7-49	X			300 XXX
J. Tallont United Truck Lines Pasco, Washington	Deliver cave unit	H. O. Monson	11-14-49	11-14-49	X			300 XXX

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data Class</u>	<u>Unclass</u>	<u>Areas</u>
C. Frenuff Lee & Estes Pasco, Washington	Deliver essential materials (Ferrous Ammonium sulfate)	H. O. Monson	11-15-49	11-15-49	X		200-W XXX
M. Brill Lee & Estes Pasco, Washington	Deliver load of machinery	H. O. Monson	11-15-49	11-15-49	X		200-W XXX
F. Kennedy Layrite Concrete Products Co. Pasco, Washington	Delivery of material on HW-53759-M	H. O. Monson	11-15-49	11-15-49	X		100-F XXX
D. A. Westermeyer Consolidated Freightways Pasco, Washington	Deliver dry ice and bismuth metal	H. O. Monson	11-18-49	11-18-49	X		300 XXX
G. Zank Lee & Estes Pasco, Washington	Deliver furnace tubes on HW-48522-C	H. O. Monson	11-21-49	11-21-49	X		200-W XXX 200-E XXX 100-B XXX
E. Winkelman Inland Motor Freight Pasco, Washington	Deliver load of steel	H. O. Monson	11-21-49	11-21-49	X		100-F XXX
D. A. Westermeyer Consolidated Freightways Pasco, Washington	Deliver load of bismuth metal	H. O. Monson	11-21-49	11-21-49	X		200-W XXX
J. Tallent United Truck Lines Pasco, Washington	Deliver drums of alcohol	H. O. Monson	11-21-49	11-21-49	X		300 XXX
R. A. Anderson Inland Motor Freight Pasco, Washington	Deliver load of duct-work	H. O. Monson	11-25-49	11-25-49	X		100-F XXX
H. A. Messner Ohio Crankshaft Company Cleveland, Ohio	Inspect material on order from his Company	H. A. Hauser	11-21-49	11-21-49	X		

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<u>Name-Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data Class</u>	<u>Unclass</u>	<u>Agency</u>
C. Froauff Lee & Estes Pasco, Washington	Deliver knocked down cartons	H. O. Monson	11-29-49	11-29-49		X	200-W XXX
R. A. Anderson Inland Motor Freight Pasco, Washington	Deliver load of ductwork	H. O. Monson	11-30-49	11-30-49		X	100-F XXX

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"G" DIVISION

I. Visits to other Installations

L. I. Brocke to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Fabrication and inspection of records of DP West	M. Roy R. D. Baker I. B. Venable	11-9-49	11-25-49		X	
J. P. McBride to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Fabrication and inspection of records of DP West	M. Roy R. D. Baker I. B. Venable	11-9-49	11-25-49		X	

TECHNICAL DIVISIONS

I. Visits to other Installations			11-29-49	12-1-49		X	
O. H. Greager to: Knolls Atomic Power Lab. Schenectady, New York	Attend Redox Steering committee meeting	J. Marsden	12-2-49	12-2-49		X	
O. H. Greager to: Kellogg Corporation New York, New York	Design consultation	H. H. Willis	11-1-49	11-1-49		X	
R. H. Moore to: Air Reduction Sales Corp. New York, New York	Discussion of gas sampling and analysis	L. I. Gilbertson	11-2-49	11-2-49		X	
R. H. Moore to: Brookhaven Nat'l Lab. Brookhaven, New York	Discussion of instrumental methods of analysis	L. Friedman					

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Arms</u>
A. H. Bushey to: Cal. Institute of Technology of Pasadena, California	Ph. D. recruitment of personnel	- -	11-8-49	11-8-49		X	
A. H. Bushey to: University of California Berkeley, California	Ph. D. recruitment of personnel	- -	11-9-49	11-9-49		X	
A. H. Bushey to: University of S. Cal. Los Angeles, California	Ph. D. recruitment of personnel	- -	11-10-49	11-10-49		X	
A. H. Bushey to: University of Cal. Radiation Laboratory Berkeley, California	Discuss analytical chemistry	D. H. Tompleton	11-7-49	11-7-49	X		
R. Ward to: Battelle Memorial Inst. Columbus, Ohio	Discuss metallurgical program	H. W. Russell	11-7-49	11-7-49		X	
R. Ward to: Knolls Atomic Power Lab. Schenectady, New York	Metallurgical consul- tation	J. P. Howe	11-8-49	11-9-49		X	
R. Ward to: Oak Ridge National Lab. Oak Ridge, Tennessee	Metallurgical consul- tation	J. H. Frye	11-10-49	11-10-40		X	
R. Ward to: Carnegie Inst. of Technology Pittsburgh, Pennsylvania	Personnel recruitment	F. W. Rhines	11-11-49	11-11-49			X
R. Ward to: Argonne National Lab. Chicago, Illinois	Metallurgical consul- tation	F. G. Foote	11-14-49	11-14-49			X

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Name - Organization

Purpose of Visit

Person Contacted

Arrival Departure

Restricted Data
Class UnClass Area

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u> <u>Departure</u>	<u>Restricted Data</u> <u>Class</u> <u>UnClass</u> <u>Area</u>
J. B. Work to: Cal. Inst. of Technology Pasadena, California	Stack Gas meeting	[REDACTED]	11-10-49 11-11-49	X
W. L. Lyon to: Los Alamos Scientific Lab. Los Alamos, New Mexico	234-5 consultation	R. D. Baker	11-14-49 11-18-49	X
F. J. Leitz, Jr. to: Argonne National Lab. Chicago, Illinois	Waste disposal committee meeting	W. A. Rodger	11-28-49 11-29-49	X
R. H. Beaton to: Knolls Atomic Power Lab. Schenectady, New York	Redox Steering Committee meeting	J. Marsden	11-30-49 12-1-49	X
C. M. Hammack to: Brookhaven National Lab. Brookhaven, New York	Instrumentation	L. Borst W. Higgenbotham	10-31-49 11-3-49	X
C. M. Hammack to: Oak Ridge National Lab. Oak Ridge, Tennessee	Instrumentation	P. R. Bell	11-4-49 11-7-49	X
C. M. Hammack to: Argonne National Lab. Chicago, Illinois	Instrumentation and consultation on radiation damage	J. M. West F. R. Shonka	11-7-49 11-11-49	X
II. Visitors to this Works	Discuss special requests	R. E. Nather	11-14-49 11-15-49	X 100-B 105 100-H 105 300 3706
A. F. Rupp Oak Ridge National Laboratory Oak Ridge, Tennessee	Discuss special requests	R. E. Nather	11-14-49 11-15-49	X 100-B 105 100-H 105 300 3706
J. A. Cox Oak Ridge National Laboratory Oak Ridge, Tennessee				

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Unclass</u> Areas
W. E. Parkins North American Aviation, Inc. Downey, California	Discuss radiation damage	A. A. Johnson	11-17-49	11-18-49	X	300-3706 100-F 105 100-H 105
J. S. Lukesh Knolls Atomic Power Laboratory Schenectady, New York	Discuss graphite work	D. H. Curtis	11-17-49	11-18-49	X	300 - 3706 100-F 105 100-H 105
P. E. Brown Argonne National Laboratory Chicago, Illinois	Special request ANL-141	R. E. Nather	11-23-49	App. 1 month	X	300 3706 100- F 105 100- H 105 100- D 105
J. R. Humphreys Argonne National Laboratory Chicago, Illinois	Special request ANL-141	R. E. Nather	11-23-49	App. 1 month	X	300 3706 100-F 105 100-H 105 100-D 105
R. W. Coyle Nuclear Energy for the Propulsion of Aircraft Fairchild Engine & Airplane Corp. Oak Ridge, Tennessee	Discuss proposed irradiation experiments	J. B. Lambert	11-29-49	12-1-49	X	300 - 3706 100-D 105 100-F 105 100-H 105 100-B 105
E. E. Githens Nuclear Energy for the Propulsion of Aircraft Fairchild Engine & Airplane Corp. Oak Ridge, Tennessee	Discuss proposed irradiation experiments	J. B. Lambert	11-29-49	12-9-49	X	300 - 3706 100-D 105 100-H 105 100-F 105 100-B 105
D. Froman Los Alamos Scientific Laboratory Los Alamos, New Mexico	Discuss P-10 project	A. A. Johnson	11-30-49	12-1-49		300 3706, 303 100-B 105 100-H 105 200-W 234, 235
M. Golblatt Los Alamos Scientific Laboratory Los Alamos, New Mexico	Discuss P-10 project	A. A. Johnson	11-30-49	12-1-49		300 3706, 303 100-B 105 100-H 105 200-W 234, 235

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		<u>Areas</u>
					<u>Class</u>	<u>Unclass</u>	
C. E. Stevenson Argonne National Laboratory Chicago, Illinois	Discuss P-10 project	A. A. Johnson	11-30-49	12-1-49	X	100-B 105	300 3706

DESIGN DIVISION CONTINUED

Visit to other Installation

R. J Schier
to: Atomic Energy Commission
New York, New York

Conference on beryllium S. B. Roboff

11-21-49 11-23-49 X

HEALTH INSTRUMENT DIVISIONS CONTINUED

Visit to other Installations

L. K. Bustad
to: Brookhaven Nat'l Lab.
Brookhaven, New York

Thyroid pathology
and measurement

11-4-49 11-4-49 X

L. K. Bustad
to: Naval Medical Research
Bethesda, Maryland

Discussion of large
animal studies
with regard to radiation pathology

11-7-49 11-7-49 X

L. K. Bustad
to: Argonne National Lab.
Chicago, Illinois

Discussion about histo-
pathology of thyroid tissue

11-9-49 11-10-49 X

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PURCHASING AND STORES DIVISIONS
SUMMARY
NOVEMBER, 1949

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

	<u>Total Personnel as of 10-31-49</u>	<u>Total Personnel as of 11-30-49</u>	<u>Net Change</u>
Exempt	49	49	0
Non-Exempt	268	262	Minus 6
TOTALS	<u>317</u>	<u>311</u>	<u>Minus 6</u>

The work load of the Purchasing Division showed an increase over October: 1,638 purchase orders were placed as compared with 1,546; 2,688 purchase requisitions were received as compared with 2,482; and 687 requisitions were on hand at month's end as compared with 647.

A market survey was conducted relative to price and availability of operations materials to be used in the new Redox Plant. All items required were found to be in plentiful supply with two exceptions and we are proceeding to develop sources for these two items.

Considerable time and effort were expended working with the Reactor Division of the Design and Construction Divisions in developing costs and delivery time on materials which might be required by them for future construction.

Reduction of freight charges during the month of November amounted to \$2,531.44.

As a result of negotiations with the Transcontinental Truck lines, a reduced rate was obtained on Nitrogen Gas which will result in annual savings of \$450.

Stores active inventories were reduced \$44,982.34. Stores activity increased approximately 40 per cent over October.

Inventories of subcontractor-held materials were progressing on schedule. Ten catalogues covering this material have already been issued.

The subcontractor lumber inventory, MS-204, was taken over and manned by General Electric personnel.

Inventories of surplus materials in Pasco were completed and cataloging was progressing as scheduled.

2,176 items of material were furnished from Plant stocks thus obviating the necessity of purchasing from outside sources.

The Stores Division began an inventory of all Graphite stored in the 101 Building preparatory to assuming accountability and physical control of this raw material.

110 representatives of Government agencies and private businesses were escorted through warehouses and scrap yards for the purpose of negotiating the sale of surplus property.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
NOVEMBER, 1949

GENERAL

An increase in the work load was again noted during the month of November. 1,639 purchase orders were placed as compared to 1,546 placed in October. 2,688 purchase requisitions were received and assigned as compared with 2,482 during October. Requisitions on hand at month end totaled 687 as compared with 647 at the end of the previous month.

Acting upon the joint request of the Technical Divisions and Project Engineering Division, special procedures were established for the procurement and expediting of all requirements of Project P-11. At month end all such orders were either complete or had satisfactory schedules established.

Pennsylvania Salt Manufacturing Company was awarded an annual contract to supply our requirements of Liquid Caustic Soda for the period January 1, 1950 through December 31, 1950.

Invitations to Bid were mailed requesting quotations on our estimated requirements of Phosphoric Acid.

Conferences were held with representatives of six different chemical companies to discuss our future requirements of Aluminum Nitrate. These companies were requested to have tentative proposals in our hands by December 9, 1949.

Considerable time and effort were expended in working with the Reactor Division of the Design and Construction Divisions in helping them forecast future plans by estimating the delivery time required on extensive lists of material which will be used.

A market survey was conducted relative to prices and availability of materials to be used in the new Redox Plant which are not presently being used on this Project. The survey revealed that all items except two are being produced in sufficient quantities to meet our anticipated requirements. Sources of supply for the two critical items are being developed.

PERSONNEL

	<u>Total Personnel as of 10-31-49</u>	<u>Total Personnel as of 11-30-49</u>	<u>Net Change</u>
Exempt	22	21	Minus 1
Non-Exempt	24	23	Minus 1
TOTALS	<u>46</u>	<u>44</u>	<u>Minus 2</u>

Requisitions for eight additional employees were forwarded to the Employment Division.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees attending	44
Minor Injuries	1

STATISTICS

	<u>G</u>	<u>D</u>	<u>Total</u>
Requisitions on hand 11-1-49 (Includes 101 assigned to Govt.)	624	23	647
Requisitions assigned during November	2,622	66	2,688
Requisitions placed during November	2,592	56	2,648
Requisitions on hand 11-30-49 (Includes 91 assigned to Govt.)	654	33	687

	<u>Number</u>	<u>Value</u>
HW Orders placed	1,599	\$545,231.25
HW Alterations placed	116	13,571.91 Cr.
Total:	<u>1,715</u>	<u>\$531,659.34</u>
HWC Orders placed	39	\$ 10,290.18
HWC Alterations placed	30	69,047.34 Cr.
Total	<u>69</u>	<u>\$ 58,757.16 Cr.</u>
AEC Orders placed	188	\$107,667.48
DC Orders placed	7	4,199.76
Government Transfers	<u>OR</u> 5	<u>ORC</u> 0
	<u>Total</u> 5	

Open Orders	
HW Orders	1,329
HWC Orders	111
Govt. Orders	11

Number of new orders requiring inspection during month	28
Number of orders requiring inspection completed during month	39
Number of orders outstanding requiring inspection at month end	42
HW Orders expedited (Special Request)	533
HW Orders expedited (routine)	790
HWC Orders expedited (routine)	111

PURCHASING AND STORES DIVISIONS
STORES DIVISION
NOVEMBER, 1949

GENERAL

During November, Stores active inventories were reduced by \$44,982.34. This was accomplished by the deletion of obsolete items and review of stock levels. The volume of Stores activity increased approximately 40% over the previous month.

Inventories of subcontractor held material have been completed and catalogues issued on the following M.S. accounts:

MS-204	Lumber
MS-205	Reinforcing Steel
MS-209	Culvert, Concrete & Terra Cotta Pipe
MS-210	Paint Supplies
MS-213	Concrete and masonry supplies
MS-214	Thermal Insulation
MS-215	Roofing Supplies
MS-219	Automotive Repair Parts
MS-220	Miscellaneous Instruments & Supplies
MS-227	Pipe, Valves and Fittings (Hanley)

Total value of the above accounts is \$4,132,452.05. Account No. 10,20 has been established to record the value of materials now carried in the M. S. accounts.

Inventories of surplus materials at Pasco have been completed and the posting and cataloging is progressing as scheduled.

1375 purchase requisitions were screened during the month and 2,176 items were furnished from plant stocks.

A net reduction of four employees was effected during the month and twenty-six others were given lay-off notices effective December 2, 1949.

Personnel was assigned the task of inventorying all graphite stored in Building 101 at Hanford. This was done preparatory to assuming accountability and physical control of this raw material which will add an estimated three and one-half million dollars to valuation of material under Stores control.

110 representatives of Government agencies and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the purchase of scrap and transfer of excess property.

Sale of scrap tract houses is continuing satisfactorily. Twenty-three of these houses were sold during the past month for a total of \$4,162.80.

<u>PERSONNEL</u>	<u>Total Personnel as of 10-31-49</u>	<u>Total Personnel as of 11-30-49</u>	<u>Net Change</u>
Exempt	24	24	None
Non-Exempt	235	231	Minus 4
TOTAL	<u>259</u>	<u>255</u>	<u>Minus 4</u>

1225308

PURCHASING AND STORES DIVISIONS
STORES DIVISION

SAFETY AND SECURITY

Inventory Control

Safety and Security Meetings Scheduled	1
Number of Employees Attending	33
Minor Injuries	1

Receiving, Warehousing and Disbursing

Safety and Security Meetings Scheduled	6
Number of Employees Attending	61
Minor Injuries	1

Surplus, Salvage & Scrap

Safety and Security Meetings Scheduled	5
Number of Employees Attending	133
Minor Injuries	7

STATISTICS

Inventory Control

Number of items added to Stores Stock	406
Number of items deleted from Stores	347
Items in Stores stock at month end	47,161
Store Orders filled	23,440
Number of requisitions screened this month	1,375
Number of items furnished from plant sources this month	2,176
Inventory valuation (903-all captions, 906 & 912)	\$2,057,736.87
Inventory valuation (Spare Parts) at month end	1,523,363.22
Total value inventories at month end, including Spare Parts	3,583,100.09
Value of Disbursements, not including cash sale items	216,610.08 *
Value of Cash Sales	952.22
Value of materials declared excess	11,533.46
Value of materials returned to Stores stock for credit	11,406.10

* Includes \$8,270.12 disbursed to Construction and CFF subcontractors.

Receiving, Warehousing and Disbursing

Receiving Reports issued	3,317
Emergency Store orders filled	3
Returnable containers on hand at month end	6,448
Returnable containers on hand over six months	1,565
Shipments processed (containers & material)	157

Surplus, Salvage & Scrap

Excess Account No. 10.10 Balance 10-25-49	\$16,057,401.50
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PURCHASING AND STORES DIVISIONS
STORES DIVISION

Surplus, Salvage & Scrap (Cont.)

Receipts 10-25-49 to 11-25-49		
Lumber	\$	81.04
Automotive Equipment		1,197,213.37
Machine Tools and Equipment		231,687.01
Office Furniture, Machines		34,981.18
Household Furniture, etc.		19,273.80
Material and Supplies		1,517,327.76
Miscellaneous Equipment		440,828.66
Material in process - not classified		(205,856.88) credit
		<u>\$5,235,539.04</u>
		<u>\$3,235,539.04</u>
		<u>19,292,940.54</u>
Disbursements 10-25-49 to 11-25-49		
On Project		
Automotive Equipment		100,442.68
Machine Tools and Equipment		9,106.43
Office Furniture, Machines		6,547.09
Material and Supplies		8,312.00
Miscellaneous Equipment		31,494.86
Off Project		
Lumber		1,999.46
Automotive Equipment		454,887.35
Machine Tools and Equipment		10,159.04
Office Furniture, Machines		4,386.33
Household Furniture, etc.		456.66
Material and Supplies		209,918.59
Miscellaneous Equipment		4,707.50
		<u>\$ 812,417.99</u>
		<u>842,417.99</u>
Balance of Account No. 10.10 as of 11-25-49		<u>\$18,450,522.55</u>
(See attached list for breakdown of materials in this account by classifications)		
Total receipts to date		\$26,440,226.16
Total Disbursements to date		7,989,703.61
Scrap and Salvage Disbursed		
Scrap Sales Completed	17	
Scrap Sales in Process	8	
Scrap Sale Revenue for the month		\$ 10,043.84
Total Scrap Sale Revenue to date		\$ 137,022.27

PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT #10.10

<u>Class</u>	<u>Description</u>	<u>Monetary Value</u>
1	Gun Emplacements, Fire Control Instruments	\$ 1.25
2	Small Arms	1,429.02
3	Lethal Devise Equipment	10.00
4	Ammunition	83.62
5	Bunting, Flags, Pennants, etc.	201.71
7	Fuel	665.82
8	Motor Vehicles: Electric Trucks, Tires	601,568.21
9	Boats	55.00
10	Outboard Motors and all accessories	4,693.04
11	Pumps and Pump Parts	113,071.36
12	Marine Hardware	2,296.88
13	Engine & Fireroom Fittings	781.77
14	Lubricants	29,244.54
15	Electric Cable and Insulated Wire	41,258.96
16	Radio & Sound Signal Apparatus	13,304.38
17	Electric Apparatus	1,626,198.53
18	Instruments of Precision and Photographic Equipment	73,371.38
19	Blocks	34,308.29
21	Cordage: Hemp, Jute, Oakum Twine	12,793.24
22	Wire Rope, Bare Wire, etc.	39,297.22
24	Canvas, Duck, Tentage, etc.	18,777.33
26	Furniture	275,505.71
27	Textiles: Thread, Findings, Floor Coverings	427,095.98
29	Toilet Articles	36.79
30	Bathroom and Toilet Fixtures	31,053.27
31	Non-Electric Lighting Apparatus	1,736.64
32	Fire-Surfacing and Heat Insulating Materials	56,900.36
33	Gaskets, Hose, Packing, Sheet and Strip Rubber, Hose Fittings, Flexible Tubing	102,805.26
34	Belting, Harness, (Leather), etc.	2,265.90
36	Music and Musical Instruments	8.50
37	Special Wearing Apparel and Athletic Equipment	126,256.20
38	Brooms and Brushes	840.52
39	Lumber	1,065,212.14
40	Machine Tools	722,000.42
41	Hand Tools	313,932.56
42	Builders and General Hardware	155,721.96
43	Bolts, Nuts, Rivets, Screws, Washers, etc.	263,136.87
44	Pipe and Non-Flexible Tubes and Tubing	833,652.03
45	Pipe Fittings	1,665,028.70
46	Metal in Bars, Including Flats, Hexagon	157,038.18
47	Metal in Plates and Sheets	24,341.45
48	Metal in Shapes and Structural	39,075.90
51	Acids, Chemicals, etc.	85,737.41
52	Paints and Paint Ingredients	156,527.09
53	Pens, Pencils, Paper, Drafting Room & Printers' supplies	34,038.77

PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT #10.10 (Cont.)

<u>Class</u>	<u>Description</u>	<u>Monetary Value</u>
54	Office Equipment	\$ 98,138.89
55	Clothing	7,741.66
57	Laboratory Equipment	35,403.21
58	Fire Fighting Apparatus: Railway Equipment, Pro- fabricating buildings, etc.	474,850.99
59	Building Materials: Asphalt, Brick, etc.	167,089.95
60	Boilers and Power Plants	66,279.09
63	Tableware	6,963.23
64	Kitchen Utensils and Apparatus	64,178.05
65	Ovens, Ranges, Stoves, etc.	31,430.99
66	Machinery: Pneumatic Tools, etc.	629,716.50
69	Animal and Hand-Drawn Vehicles	13,801.97
70	Agricultural Implements	1,780.29
72	Leather Boots & Shoes, Leather Clothing, etc.	7,526.16
73	Caps, Hats, Gloves, etc.	32.99
74	Infantry and Landing Force Equipment	796.83
78	Motorized Equipment & Heavy Construction Equipment	7,108,035.83
83	Airplane Accessories, Equipment & Parts	130.33
	Material in process - not classified	583,263.41
	Total of Account No. 10.10	\$18,450,522.55

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
NOVEMBER, 1949

GENERAL

The Washington Public Service Commission refused to grant railroads an 8% increase in intrastate freight rates, similar to the one approved by the I.C.C. on interstate freight. Effective November 20, 1949 the Commission made the 4% temporary increase, granted under Ex Parte 168, permanent with no exceptions. This will increase the rate on cement by 4%.

Effective on or about November 20, 1949 the Eastern Railroads raised their passenger fares 12.5%, making the coach rates approximately 3.375 cents per mile and Pullman fares 4.5 cents per mile.

The Transcontinental Truck Lines have approved our proposal of July 11, 1949 and have published a rate of \$5.46 per cwt. to apply on Nitrogen Gas, LCL, in cylinders, between Philadelphia, Pennsylvania and Richland, Washington. Rate became effective November 8, 1949, and will provide a savings of \$1.26 per cwt., or a savings of approximately \$450 in the coming year.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of November amounting to \$2,531.44. This makes a total savings from September 1, 1946 to date of \$1,130,236.54.

PERSONNEL

	<u>Total Personnel as of 10-31-49</u>	<u>Total Personnel as of 11-30-49</u>	<u>Net Change</u>
Exempt	1	2	Plus 1
Non-Exempt	8	7	Minus 1
TOTALS	9	9	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees attending	8
Minor Injuries	0

STATISTICS

Savings Report

1. Rate reductions obtained from the carriers:

<u>Commodity</u>	<u>Origin</u>	<u>Savings for November</u>	<u>Savings 9-1-46 thru October</u>	<u>Total Savings 9-1-46 to date</u>
Acid, Nitric	Du Pont, Wash.	\$1,310.87		
Gas, Chlorine	Tacoma, Wash.	135.00		
Soda, Caustic	Tacoma, Wash.	684.20		
Acid, Sulphuric	Du Pont, Wash.	160.53		
Ferric Sulphate	Stege, Calif.	240.84		
		<u>\$2,531.44</u>	\$1,127,705.10	\$1,130,236.54

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Savings Report (Cont.)

2. Freight Bill Audit	139.29*	\$ 44,988.83	\$ 45,128.12**
3. Loss & Damage, & Overcharge Claims	2,191.44	86,902.64	89,094.08
4. Ticket Refund Claims	26.90	6,949.28	6,976.18
5. Household Goods Claims		13,663.54	13,663.54
	<u>\$4,889.07</u>	<u>\$1,280,209.39</u>	<u>\$1,285,098.46</u>

* Includes \$73.80 for the AEC
**Includes \$19,458.00 for the AEC

Work Volume Report

Reservations Made	Rail	47
	Air	61
	Hotel	59
Expense Accounts Checked		126
Household Goods and Automobiles	Movements arranged outbound	7
	Shipments traced	1
	Insurance Riders Issued	1
	Claims Filed	6
Ticket Refund Claims	Filed	12
	Collected - Number	5
	Collected - Amount	\$26.90
Freight Claims	Filed	14
	Collected - Number	17
	Collected - Amount	\$2,191.44
Freight Bill Audit Savings	GE	65.49
	AEC	73.80
Freight Shipments Traced		9
Quotations	Freight Rates	169
	Routes	103
Bills Approved	Air Freight - GE	2
	Air Express - GE	20
	AEC	7
	Carloading - GE	82
	AEC	1
	Express - GE	148
	AEC	15

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Work Volume Report (Cont.)

Bills Approved	Rail - GE	1,137	
	AEC	7	
	Truck - GE	217	
	AEC	38	
Carload Shipments	Inbound	1,106	
	Outbound	26	
<u>Report of Carloads Received</u>			
Latter Day Saints	Shingles	1	
Richland Concrete Company	Cement	3	
Richland Transportation Company	Coal	20	
J. A. Troxell	Steel	<u>5</u>	29
General Electric Company	Barrels	1	
	Bichromate of Soda	2	
	Cable	1	
	Caustic Soda	8	
	Cement	1	
	Chemicals	5	
	Chlorine	3	
	Coal	1,019	
	Electrical Equipment	1	
	Express	3	
	Ferric Sulphate	1	
	Ferrous Ammonium Sulphate	1	
	Flooring, Tile	1	
	Helium	1	
	Lime	4	
	Merchandise	3	
	Nitric Acid	9	
	Phosphoric Acid	2	
	Salt	4	
	Soda Ash	2	
	Steel Shelving	1	
	Sulphuric Acid	1	
	Transformers	<u>3</u>	<u>1,077</u>
Total Entire Project			1,106

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

SUMMARY -- NOVEMBER, 1949

Open requisitions decreased from 110 at the beginning of the month to 86 at the end of the month. Total plant personnel decreased from 7,512 to 7,429. Turn-over rate including terminations due to lack of work during November was 2.14%. Turn-over rate exclusive of terminations due to lack of work was 1.06%. A revised termination procedure was installed during the month of November. Seniority dates in three seniority groups were revised during November.

The G.E. Health Insurance Plan was completed during November, and at the end of the month 93.7% of all employees at the Hanford Works had elected to participate in this plan. Four employees retired during the month, two of which were on optional retirement. One employee death occurred during November. Seventeen awards, totalling \$730.00, were approved by the Suggestion Committee during November. One public liability claim against a subcontractor was settled for \$2,750.00.

Thirty-six supervisors participated in the 40-Hour Supervisor's Training Program in November. Three Employee Relations Handbook revisions and two additional sections were prepared and submitted to the Printing Shop. A total of 159 meetings were conducted by the Training and Program Development Group on GE Health Insurance Plan, with 4,422 nonexempt employees participating. Two sound movie films were previewed, and 12 sound slide films were reviewed during November. A training report was made to all Superintendents and Division Heads on November 29. Recommendations for appearance improvement in conference rooms were submitted to the Coordinator of Area Councils.

The Labor Relations and Wage Rates Division was concerned primarily with the processing of grievances and interpreting Article XIII of the HAMTC - GE Agreement. A formal hearing was scheduled by the NLRB in regard to the Building Service Employees International Union, to be held December 6. The Hanford Industrial Firemen's Union filed a petition with the NLRB for representation. The Technical Engineers and Architects Association filed an Amended Petition with the NLRB.

A meeting was held between the Council Negotiation Committee and the Company in which a Declaration of Intent was drawn up covering Article XIII of the Agreement. Conferences were held by representatives of AFL unions, and officials of General Electric Company and the Atomic Energy Commission. Two meetings were held with the Council Grievance Committee. All supervisors were informed regarding the disposition of the grievances settled and discussed at these meetings. Work was started on the Northwest Community Rate Survey. A survey was completed to determine the rates paid policemen and guards in the Northwest.

Employee and Community Relations Division

Summary

The continuing efforts of the Community Relations Division to provide necessary services of an advertising and publicity nature to Hanford Works and the Nucleonics Department resulted in the formation, effective November 1, 1949, of the Hanford Works Photo House. Services of the Photo House include: all news photography for the Nucleonics Department News Bureau, all photographs required for HANFORD WORKS NEWS, all photographic services required by the Medical Divisions, which makes a complete photographic service available to all divisions of Hanford Works. The Hanford Works Photo House was privileged during the month of November to serve the Medical, Technical, Transportation, Community Fire, and Employee and Community Relations Divisions. A total of 3982 prints were produced, 52 of which were handled through the classified files procedure, and 230 negatives were exposed, 39 of which were handled through the classified files procedure. The large number of total prints produced is accounted for by the fact that 3155 2" x 2" identification badge photographs were produced for the plant.

A marked increase has been experienced by the Nucleonics Department News Bureau during the month of November in the number of requests for special information by local representatives of Northwest papers. In many instances the requests have been for a complete story about a particular event. In other instances the News Bureau has been asked to confirm current rumors or reports. The News Bureau has, since its formation, endeavored to encourage such requests. The report of Community Relations for the month of November contains specific mention of individual requests for information, and the manner in which various rumors and "unofficial" reports have been handled because they form an important part of Hanford Works community relations activities.

A total of 20 releases were distributed to the "Local List" of newspapers during the month of November, including releases to radio stations in the vicinity. Four releases were sent during the month to the 72 daily newspapers, radio stations and wire services in the Northwest.

It is significant to note the interest expressed by local newspapers in obtaining a copy of the Richland Master Plan for use in preparing future stories. Dealing with this particular request has required patience and diplomacy in order to explain satisfactorily the circumstances surrounding the Master Plan which make it advisable not to release it beyond the organization specifically concerned with the operation of Richland.

The requests for films during the month of November totaled eight. These films were obtained from the Portland films distribution center and scheduled by Community Relations personnel for showing by the organizations requesting them.

National Fire Prevention Week required the services of each of the various community relations groups and a complete report of their activities was contained in the over-all report prepared for use in national fire prevention contests.

Employee and Community Relations Division

Summary

All of the various phases of special programs' publicity portion of the over-all promotion plan used to present the new GE Group Health Insurance Plan to employees were completed during the month of November. The publicity during November included WORKS NEWS stories, photographs, an editorial, and an editorial cartoon, in addition to letters mailed to employees' homes and a specially prepared self-mailing piece which went to all employees' homes.

Distribution was completed during November by Special Programs, working in conjunction with the GE mail room, of all 1950 calendars and diaries to the various divisions based upon their requests during May of this year. Additional quantities were obtained to supply requirements of divisions which have experienced substantial changes since the original estimates were submitted.

The Nucleonics Department portion of the GE Organization Directory was completed during the month of November. The final section submitted was that of the Design and Construction Divisions, and reflects the recent changes made in that organization.

"You and General Electric at Hanford Works", a new handbook for Hanford Works employees, was received from the printer during the month of November. Preparations necessary for distributing them were completed during the month of November and the distribution was begun.

Hanford WORKS NEWS continued to publish numbers assigned to telephones being installed, and the last issue of the month contained a summary of all numbers assigned to newly installed telephones during the month.

Four issues of Hanford WORKS NEWS were published during the month, and the "Candid Camera" for the month of October was inserted in the November 4 issue. This change in insertion date is necessary because of the insertion on the last Friday of each month of the summary of telephone numbers.

Hanford WORKS NEWS continued to serve as a medium for reaching Hanford Works employees with information specifically designed for their attention. Examples were the announcement of area representatives authorized to issue employee sales plan certificates, which results in an increase in the convenience to employees in obtaining these certificates. Another example was the appearance of the "Can You Tell Me?" column in which questions submitted by Hanford Works people concerning plant matters were answered.

Through the medium of the Women's Feature Writer in the News Bureau, an intensive campaign is being carried forward to encourage improved community relations through offering the WORKS NEWS as a medium for publicizing of activities of organizations in Richland. These include meeting notices, plans for future programs, and information concerning recreation activities offered through the various organizations in the town.

One hundred fifty-six requests were received during November for rides or riders to a wide variety of destinations in and near the Northwest.

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

NOVEMBER, 1949

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

Effective November 1, 1949, a Reproduction and Photographic "C" was transferred to the Community Relations Division, and reclassified and placed on the exempt roll.

Effective November 28, 1949, a Reproduction and Photographic Assistant "D" was transferred to the Community Relations Division.

Effective November 28, 1949, an Employment Interviewer and Investigator "B" was reclassified to a Business Graduate and transferred to the Employee Services Group.

Employee Services:

Effective November 28, 1949, a Business Graduate was added to this Group.

Training and Program Development:

There were no organizational changes in this Group during the month.

Labor Relations and Wage Rates

There were no organization changes in this division during November.

Community Relations

Effective November 1, 1949, a Reproduction and Photographic "C" was transferred from the Employee Relations Division to the Community Relations Division, and reclassified and placed on the exempt roll.

Effective November 28, 1949, a Reproduction and Photographic Assistant "D" was transferred from the Employee Relations Division to the Community Relations Division.

Number of Employees on Payroll	<u>November, 1949</u>
Beginning of Month	80
End of Month	<u>80</u>
Net increase or decrease	0

Employee and Community Relations Division

ACTIVITIES

Employee Relations:

Employment:

In line with the establishment of a Photo House Service for the Hanford Works, the administration of which is to be under the Community Relations Division, C. R. Brewer, Reproduction and Photographic "C", was transferred to the Community Relations Division from the Employment Group on November 1, and reclassified and placed on an exempt roll. On November 28, 1949, a Reproduction and Photographic Assistant "D" was also transferred to the Community Relations Division to complete the personnel required for the establishment of the Photo House.

Due to the lack of work in the Employment Group, and the need for additional personnel to assist in the Insurance and Compensation Section, an Employment Interviewer and Investigator "B" was reclassified to a Business Graduate, and transferred to the Employee Services Group effective November 28, 1949.

	<u>October, 1949</u>	<u>November, 1949</u>
Applicants interviewed	1, 212	1, 194
Open Requisitions:		
Exempt	0	0
Nonexempt	110	86

Of the 110 nonexempt open requisitions at the beginning of the month, 41 were covered by interim commitments. Of the 86 open nonexempt requisitions at the end of the month, 41 were covered by interim commitments.

	<u>October, 1949</u>	<u>November, 1949</u>
Employees added to the roll	109	77
Employees removed from the roll	<u>116</u>	<u>160</u>
Net gain or loss	- 7	- 83

Of the 160 employees removed from the rolls during the month, 81 were terminated due to lack of work, all of which were in the bargaining unit.

Turn-over	<u>October, 1949</u>		<u>November, 1949</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Including employees laid off for lack of work	1.20%	3.01%	1.81%	2.33%
Excluding employees laid off for lack of work	.79	1.82	.6	1.75
	<u>October, 1949</u>		<u>November, 1949</u>	
Including employees laid off for lack of work	1.54 %		2.14 %	
Excluding employees laid off for lack of work	.94		1.06	

Employee and Community Relations Division

At the end of November, there were 646 employees in lack of work status.

During the past month, 71 new requests for inter-Divisional transfers were received and reviewed by the Employment Office. As a result of those requests, 25 transfers were effected. In addition, 10 transfers were effected for employees who had received notice of termination due to lack of work.

During the early part of November, a revised termination procedure was installed. The new procedure was designed in a manner whereby employees being removed from the payroll by virtue of voluntary resignations or discharge will be paid only for the time actually spent in being processed through the termination procedure, rather than pay for a full day as in the past.

Effective November 15, 1949, a declaration of intent, concerning the establishment of seniority dates for employees within the bargaining unit, was agreed to by the Company and the Council. As a result of this declaration it was necessary to re-establish seniority dates for three seniority groups.

During the latter part of November, a program was initiated to transfer all inactive personnel records to the Records Storage Center. Personnel files on former employees will be retained in the future for one year. Those who are laid off for lack of work from the bargaining unit will be retained for eighteen months. All other personnel folders over these periods will be forwarded in the future to the Records Storage Center. Personnel files on facility operators' employees will be retained only for a reasonable length of time after terminating their employment with a facility operator.

Employment Statistics:

<u>Number of Employees on Rolls</u>	<u>10-31-1949</u>	<u>11-30-1949</u>
Exempt	1, 596	1, 603
Nonexempt	<u>5, 916</u>	<u>5, 826</u>
Totals	7, 512	7, 429

ADDITIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
New Hires	4	33	37
Re-engaged	0	20	20
Reactivations	1	15	16
Transfers (from other plants)	<u>2</u>	<u>2</u>	<u>4</u>
Actual Additions	7	70	77
Payroll Exchanges	<u>14*</u>	<u>2**</u>	<u>16</u>
Gross Additions	21	72	93

* Transferred from Weekly Salary Roll
 *** Transferred from Monthly Salary Roll

Employee and Community Relations Division

TERMINATIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
Actual Terminations	11	132	143
Removals from Roll	2	15	17
Payroll Exchanges	2*	14**	16
Gross Terminations	15	161	176

Approximately 43% of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Personal Reasons (b) Another Job (c) Transfers

GENERAL

	<u>October, 1949</u>	<u>November, 1949</u>
Applicants interviewed	1, 212	1, 194
Photographs processed	3, 831	3, 269
Fingerprint impressions taken (in duplicate)	294	223
Procurement letters written	600	541

ABSENTEEISM STATISTICS
(Weekly Salary Roll)***

Male	2.08 %	2.04 %
Female	3.45	8.2
Total Plant Average	2.38	2.32

INVESTIGATION STATISTICS

Cases pending at beginning of month	1, 106	1, 036
Cases received during the month	217	120
Cases closed	287	321
Cases pending at month end	1, 036	835
Cases found satisfactory for employment	108	59
Cases found unsatisfactory for employment	3	3
Cases closed before investigation completed	5	4
Special investigations conducted	13	24

* Transferred to the Weekly Salary Roll

** Transferred to the Monthly Salary Roll

***Statistics furnished by Weekly Payroll Division

Employee Services:

During the month of November, the Employee Services Group assisted the Training and Program Development Group in conducting meetings with nonexempt employees, at which time the G. E. Group Health Insurance was explained. Subsequent to these meetings all employees were contacted by their supervisors and given the opportunity to participate in the new Health Insurance Plan. As of the end of the month 93.7% of the employees at the Hanford Works had elected to participate in this Plan.

PRIVACY ACT MATERIAL REMOVED

Employee and Community Relations Division

Various employees were contacted during the month of November for reasons as indicated below:

Employees visited at home due to illness	1
Employees visited at Kadlec Hospital	23
Employees on leave of absence at home	6
Pension checks delivered	5
Weekly checks delivered to employees confined at Kadlec Hospital	14
Weekly checks delivered to employees confined at home	2

The following trips were made to the Areas by representatives of the Employee Services Group:

Union notices posted in all areas	5
Group Disability Insurance discontinuance notices	1
Group Health Insurance Plan posters	1
Suggestion System posters	1
Thanksgiving Holiday notices	1

The following employees retired during November:

- Albert A. See, Construction Division, (Optional retirement);
- Neva S. Schnell, Plant Security and Services Division;
- Mary Gavin, Medical Division, (Optional Retirement); and
- Ray Hall, Purchasing and Stores Division.

All of the above named employees were participating in the Pension Plan and were interviewed prior to their retirement and fully informed as to the benefits each would receive.

One employee death occurred during the month, namely:

, Technical Divisions.

The necessary proof of death forms have been forwarded to the beneficiary for signature inasmuch as this employee was not married.

During the month of November, 12 employees in lack of work status requested their separation be changed to resignation in order that their pension contributions might be refunded to them.

Considerable time was spent during November drafting an Instructions Letter on "Procedure for Disciplinary Action".

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

	10-1949	11-1949	Total since 7-15-1949
Suggestions Received	130	165	4, 112
Investigation Reports Completed	43	15	3, 690
Awards granted by Suggestion Committee	27	17	495
Cash Awards	\$ 525	\$ 730	\$ 6, 575

PRIVACY ACT MATERIAL REMOVED

Employee and Community Relations Division

The savings during the month of November as a result of the suggestions submitted were estimated at \$ 13,711.74. The November 4th, 11th, and 18th issues of the Works News included information and photographs concerning the suggestion awards to F. C. Schermer, Maintenance Division, \$135.00; E. F. Pickles, Maintenance Division, \$ 375.00; and M. W. Dickerson, Technical Divisions, \$ 25.00.

Insurance and Compensation:

Public Liability

On November 4, 1949, D. S. Cameron of the Law Division and W. D. Smyth of the Insurance and Compensation Section attended a meeting in Seattle, Washington, at the office of G. M. Jordan, adjustor for the Travelers Insurance Company, at which time Mr. Jordan requested that the amount by which the Travelers Insurance Company has authority to settle claims for the General Electric Company be increased to some amount in excess of the \$ 1,000.00 as it now exists. Mr. Jordan stated that he felt that this request was justified due to the adjusting experience the Travelers Insurance Company has had in the settlement of claims. It was pointed out to Mr. Jordan that the present policy in existence with the Travelers Insurance Company required approval of the General Electric Company and the Atomic Energy Commission for settlement of any claims in excess of \$ 1,000.00. It was further pointed out to Mr. Jordan the reasons for this amount, particularly in view of the fact that monies used in settlement of such claims were government funds. After this explanation, Mr. Jordan concurred. He advised that more information would be forwarded to the General Electric Company so that all public liability cases could be more closely followed.

-- Under date of October 28, 1949, a letter was received by the Kadlec Hospital from the law firm of Sullivan and Purzan, Seattle, Washington, in behalf of the plaintiff in the claim, alleging negligence on the part of the obstetrician at the hospital in connection with a confinement case, which was handled there in the early part of February, 1949. Specific allegation claim was that at the time of birth the obstetrician failed to remove a sponge. By virtue the law firm requested that a \$ 90.00 balance owed by the plaintiff to the hospital be cancelled. There was no allegation of personal damages. This claim was discussed with the Attorney for the Washington State Medical Association by a representative of our Law Division and it was agreed that the claim should be turned over to the Travelers Insurance Company, since the doctors at the hospital are covered for malpractice under our comprehensive liability policy. Accordingly, this claim has been referred to Mr. G. M. Jordan of the Travelers Insurance Agency.

, seeking damages in the amount of \$ -- This action arose as a result of the plaintiffs being injured when their car went into a road excavation on Stevens Drive north of Richland. The plaintiffs' attorney offered to settle in the amount of \$ 4,000.00. As a result of negotiations by the Travelers Attorney, Mr. John D. McGillivray of Spokane, a settlement in the amount of \$ 2,750.00 was obtained. On November 10, this settlement was approved by the Atomic Energy Commission and the General Electric Company.

PRIVACY ACT MATERIAL REMOVED

1225404

Employee and Community Relations Division

Fidelity Bond Coverage

In line with the policy established by the Atomic Energy Commission eliminating fidelity bond coverage on all cost-plus, fixed-fee contracts on this Project, the Atkinson Jones Company was advised on November 22 to permit their fidelity bond coverage to lapse as of November 30, 1949; and on the same date they were also requested to advise their sub-contractor, the Urban, Smythe and Warren Company to permit their fidelity bond to lapse at the same time.

Compensation

On September 10, 1948, the Department of Labor and Industries entered an order awarding 75% amputation value of the right leg below the knee in the amount of \$ 1,762.50, to the above grant. This award was granted as a result of a leg injury received by the claimant on November 21, 1947, while employed by the Atkinson and Jones Construction Company. On November 15, 1948, the claimant filed an application with the Joint Board for Rehearing, alleging that as the result of his injuries the disability should be increased. At the Company's request the claimant was examined by two physicians in Spokane on June 7, 1949. On November 15, 1949, a hearing was conducted in Spokane, at which time these doctors testified that

Employee and Community Relations Division

Life Insurance:

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to 35 insurance and investigation agencies during the month of November.

Statistics:

	<u>Oct., 1949</u>	<u>Nov., 1949</u>	<u>Total since 9-1-1946</u>
Claims reported to the Department of Labor and Industries	109	39	3, 169
Claims report to Travelers Insurance Company	7	9	381

Training and Program Development:

During the week of November 14-18 the 40-Hour Supervisor's Training Program was presented again on a plantwide basis with a total of 36 supervisors in attendance.

By the end of November, the "Let's Talk It Over" Program had progressed down through the organization to supervisors under Superintendents and Division Heads. This Program is to progress to the first line supervisors, and it is scheduled to be completed by the 15th of December.

On November 1, a list of all supervisors who had received copies of the Supervisor's Handbook on Employee Relations was distributed to each Superintendent and Division Head with the request that the Training and Program Development Group be notified if additional copies were desired. As a result of this letter 125 Handbooks were issued during the month, making a total of 1,140 Handbooks distributed to date. At the present time three revisions of the Handbook have been prepared for distribution. In addition, two new sections have been prepared for distribution. Both the revisions and new material are presently being printed in the Print Shop.

During the month of November, the Training and Program Development Group held a total of 159 meetings with nonexempt employees, at which time the new G.E. Health Insurance Plan was explained. There were a total of 4,422 nonexempt employees who participated in these programs.

Effective November 28, the employees' handbook, entitled "You and the General Electric Company" is being distributed to all new employees during orientation. In addition a wall chart has been prepared, which depicts the various plans covered in orientation and is used in connection with the explanation of these plans. A small copy of this chart is also distributed to each new employee. During the past month 59 employees were given orientation. Of this number, 56% elected to participate in Group Life Insurance Plan, and 77% elected to participate in the Group Health Insurance Plan.

Employee and Community Relations Division

During November, two sound movie films, entitled "Strange Interview", and the "Price of Freedom", were reviewed. The first film depicted an employee-employer relationship based on the philosophies of Benjamin Franklin, whereas the "Price of Freedom" is an economic film. Also during November twelve slide, sound films produced by the Armstrong Cork Company, were reviewed. These films presented supervisory problems without a solution and are to be used for discussion in supervisory conferences. With reference to these latter films it is believed that the same result could be accomplished through the Training and Program Development Group without the use of the films.

On November 29, 1949, a meeting was held, to which all Superintendents, Division Heads, and Managers were invited, at which time the Training and Program Development Group presented a report on the programs that have been given, and some of the problems that have been brought up by supervisors during these programs. The primary purpose of this meeting was to explain some of the objectives of our training programs, as well as to outline a few of the programs to be given in the future. In addition, it is the desire of the Training and Program Development Group to have suggestions and comments from the Superintendents and Division Heads concerning the programs submitted for supervisors.

As the result of a survey of conference rooms made by the Training and Program Development Group, recommendations have been submitted to the Coordinator of Area Councils, in order that this information might be passed on to the various Councils, and consideration given to improving the appearance and conveniences in these various conference rooms.

A questionnaire concerning the Company's Employee Relations News Letter was prepared and forwarded to the supervisors' mailing list on November 25, 1949, in order to conduct an opinion survey as to the readership of this News Letter, as well as the desirability of the information contained in it. At the end of the month, all of these questionnaires had not been returned, however, upon their return, it is proposed that a report be prepared and submitted to Hanford Works supervisors, as well as to the Employee Relations New York Office.

Employee and Community Relations Division

Labor Relations and Wage Rates

Labor Relations

In addition to the processing of grievances, this Division was actively engaged during the month in interpreting Article XIII of the HAMTC - GE Agreement to the mutual satisfaction of both the Council and the Company.

A formal hearing was scheduled for November 29, 1949, by the NLRB in regard to the pending petition requesting bargaining rights for certain employees engaged in building service work by the Building Service Employees International Union, Local No. 201. The NLRB granted an extension requested by the Company and rescheduled the hearing for December 6, 1949.

On November 8, 1949, a letter was received from the NLRB stating that a petition had been received for investigation and certification of the Hanford Industrial Firemen's Union #37.

The NLRB notified this Division that the Technical Engineers and Architects Ass'n. has filed an Amended Petition for Investigation and Certification of representatives, changing the unit to include all field engineering employees in the Layout Department of the Construction Division.

A meeting was held on November 15 between the Council Negotiating Committee and members of the Company for the purpose of clarifying Article XIII of the HAMTC - GE Agreement which covers seniority. As a result of the meeting a Declaration of Intent was drawn up and signed by members of both groups.

Conferences were held on November 29 and 30 by representatives of AFL unions from Washington, D.C. and officials of General Electric Company and the Atomic Energy Commission for the purpose of discussing matters of mutual interest in the operation of Hanford Works.

Grievance Statistics

Thirty-one grievance reports were received during the month, bringing the total received since the bargaining unit was established to 162:

Accounting	1
Minor Construction	1
Manufacturing Instrument	2
Manufacturing Maintenance	13
Manufacturing Power	1
Manufacturing "S"	6
Manufacturing Transportation	5
Manufacturing "P"	1
Village Labor	1
Total	31

Employee and Community Relations Division

Employee grievance reports were regarding the following subjects:

Jurisdictional	15
Holidays	1
Seniority	6
Information to Employees	2
Wage Rates, Progress	<u>6</u>
Total	31

The status of all grievances received to date is as follows:

Settled satisfactorily, Step I	47
Not Settled satisfactorily, Step I	115

Of the 115 grievances not settled at the Step I level, 54 have been settled satisfactorily at the Step II level. Only 5% of the total grievances received to date have been submitted by employees outside the bargaining unit. Fifty-one per cent of the grievances have come from only 6% of the total divisions included in the bargaining unit.

Meetings:

The Council Grievance Committee and the Company Negotiating Committee met twice during the month for the purpose of settling grievances at the Step II level. Of the eleven grievances that were discussed at these meetings, five were satisfactorily settled, five were withdrawn at the request of the Council, and one was held over at the request of the Council, pending further investigation. All supervisors were informed regarding the disposition of these grievances.

Wage Rate Division

The Wage Rate section started work on the Northwest Community Rate Survey during the month of November.

A survey was completed to determine the rates paid policemen and guards in the Northwest, together with the rates paid first-line and other supervisors in this occupation. Supervisory rates were compared to employee rates to determine community pay differentials for supervisors in this field. The survey included information on all fringe benefits, such as holiday pay, vacations, pay for illnesses and other absences, overtime allowances, etc.

Individual jobs were studied and classifications and rates determined for these jobs. These studies involved new jobs not previously classified as well as a review of jobs where the supervisor concerned felt that the job content had been changed sufficiently to warrant consideration for reclassification, or the work had been reorganized.

Employee and Community Relations Division

An average of more than 30 daily contacts with supervisors and staff groups were handled. These contacts generally resulted from questions concerning the application of transfer rules, progression schedules, and the application of changeover rules to the computation of retroactive pay.

A study was made to determine the number of preferential rates eliminated by the changeover from the old rate schedule to the new on April 11, 1949.

Another review was made to show the number of employees by division on preferential rates as of November 7, 1949.

Data was compiled and charts prepared on the ratio of Trainees to Journey-men by divisions and by classification.

A check of the wage rate records was completed during the month of November. This included a comparison of actual rates paid against the records kept in the wage rate office. No significant errors were found.

Approval was received for a reimbursement request relative to Auxiliary Firemen. A review of the approved authorization indicated the desirability of changing the wording of the authorization. Several discussions with the Atomic Energy Commission personnel concerned resulted, and on November 18, 1949, a new request was submitted covering the proposed change in the authorization.

STATISTICS

Transfers from Monthly to Weekly	3
Transfers Approved	102
Job Reclassifications Approved	139
Automatic Increases	368
Merit Increases	15

Employee and Community Relations Division

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, Spokane CHRONICLE, Hanford Works NEWS, Walla Walla UNION-BULLETIN, Pasco NEWS, Pasco HERALD, Kennewick COURIER-REPORTER, 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 release are being sent out for immediate release. In such cases the date on which the release was sent from this office is indicated below).

- 11/2 Richland's Community Manager compared the town's new telephone rates, scheduled to be effective December 1, with rates in nearby towns that offer comparable telephone service.
- 11/4 Attention was called to improvements currently being made by construction subcontractor in Richland's street system.
- 11/7 The Community Engineer announced the beginning of the third season of the dust and pollen control program. This includes planting trees along streets and along shelter belts. It was pointed out that residents will be requested to dig the holes in which street trees will be planted in front of their homes.
- 11/8 The Traffic Patrol Chief announced that a campaign to increase pedestrian safety would be undertaken during November.
- 11/8 Winners in the four contests conducted in Richland schools during National Fire Prevention Week were announced.
- 11/9 Richland Patrol stated that enforcement action would be taken against persons riding bicycles at night without adequate lights.
- 11/9 It was stated that the location of the parking lot being constructed across the street from the Post Office and the Seattle First National Bank was chosen as a result of a survey.
- 11/10 An informative release pointed out that Richland had its twelfth case of polio. The story brought the histories of previous polio cases in Richland up-to-date.
- 11/12 The annual fall Doughnut Dunking Social of the "Projecteers" was announced and the program for the evening described.
- 11/14 The new Richland uptown shopping district will be served by both the Richland village bus system and the area shuttle bus system beginning November 21 according to this announcement by the Transportation Division.
- 11/15 A photograph depicting Carmichael Junior High School students being presented with awards for their participation in National Fire Prevention Week was sent to local media.

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- 11/15 Lewis and Clark Grade School received a trophy for being judged the Richland school with the greatest participation in Fire Prevention Week. A photograph of the presentation ceremony was distributed locally.
- 11/15 Two power outages scheduled for the following week in Richland were announced.
- 11/16 The Community Manager announced that beginning with the month of February General Electric employees who lease housing accommodations in Richland can, if they wish, pay rent and telephone charges directly by cash or check instead of by the present payroll deduction method.
- 11/21 A power outage for the coming week was announced.
- 11/22 Two coming power outages were announced.
- 11/23 A story was released based on the talk given by a Richland Patrol representative over radio station KWIE. It stated that the traffic fatality rate for pedestrians is some 40 per cent higher during November and December than during the rest of the year, and emphasized the need for additional care both in walking and in driving.
- 11/28 A coming power outage was announced.
- 11/29 A photograph was distributed showing a group of public health consultants visiting Hanford Works to confer with project officials about the precautions being taken to prevent possible contamination of the Columbia River by plant processes.
- 11/30 The Community Engineer explained that Gillespie Street is being widened and generally improved to form a main traffic arterial.

New York TIMES

On November 4 and 5 two articles, one about Richland and one about Hanford Works, appeared in THE NEW YORK TIMES. The articles were written by L. E. Davies, West Coast correspondent for the TIMES. He spent October 31 and November 1 in Richland gathering material for the stories. They were reprinted in the Spokane SPOKESMAN-REVIEW. The Manager of Employee and Community Relations Division described the articles in a recent General Manager's staff meeting. Photostats of the two stories were subsequently mailed to those who regularly attend the staff meeting.

Tri-City Herald Only

- 11/12 A representative of the Tri-City HERALD inquired about the effects in Richland of a State Supreme Court Decision stating that pinball machines are gambling devices. It was explained that the only pinball machines in Richland are in private clubs where gambling devices are permitted.
- 11/16 In response to an inquiry from the HERALD, a story was released which explained that Dr. R. R. Sachs was appointed Deputy Health Officer of Benton County because he was already performing most

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duties of that office as Deputy Health Officer of the State of Washington. The appointment had been questioned in the local press by a member of the Community Council.

VILLAGER only

- 11/17 In order to publicize the G.E. Education Program, a photograph of a speech class in action was sent to the VILLAGER.
- 11/17 A feature story about the dangers involved in riding a bicycle improperly was sent to the VILLAGER. The Richland Safety Supervisor supplied the factual material for the story and it was sent out under his name.
- 11/24 A feature story explaining the adult recreation program being sponsored by Community Activities Division was sent to the VILLAGER. Five photographs with cut lines depicting volleyball, basketball, badminton, ping-pong and fencing activities that are part of the program also were furnished to the VILLAGER.

Walla Walla UNION-BULLETIN Only

- 11/15 In response to an inquiry from the UNION-BULLETIN, a story was prepared for that paper which explained General Electric's policy regarding the rehiring of persons who have been laid off for lack of work.
- 11/28 The UNION-BULLETIN representative in this area requested confirmation of a list of expected construction monthly payroll figures which he stated he had obtained "from a reliable source." It was stated that the figures could not be confirmed, and the BULLETIN representative stated he would not, therefore, pursue the matter until the News Bureau was in a position to release figures.

An increasing amount of time is spent by the News Bureau supplying specific information requested by newspapers. Frequently, and especially when a rumor is denied, a story does not result from such contacts.

During November a representative of the VILLAGER stated that he had heard that a 5 per cent wage increase would be soon given and that at the same time rents would be increased 5 per cent. The rumor was denied vigorously, and nothing was published concerning this matter.

The VILLAGER also requested a story about 13 stop lights to be installed in Richland. It was stated that such a project had not been approved.

Repeated requests from the VILLAGER for a copy of the Richland Master Plan as source material for news stories culminated in November in a conference between a VILLAGER Representative, the Community Relations Division Head and a representative of the News Bureau. It was explained that the Master Plan cannot be released because there is no assurance that all of its provisions will be followed. This is in conformance with a general policy of the News Bureau--information is to be released about a project only when it has been completely approved.

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Requests from the Walla Walla UNION-BULLETIN for a story about a meeting between representatives of G.E., the A.E.C. and A.F.L. representatives from the East were discussed with the A.E.C. Public Relations Officer. The A.E.C. released a story about the meeting after it had been cleared with G.E. Labor Relations people.

Films

The following G.E. films were made available to Richland groups during November:

11/1	"By Their Works"	Triple-Teen Club
11/9	"Family Album"	Richland Photography Club
11/10	"Family Album"	Lutheran Men's Club
11/10	"Family Album"	A.E.C. Social Group
11/15	"Jet Propulsion"	Projecteers
11/15	"Excursions in Science, No. 7"	Projecteers
11/17	"Jet Propulsion"	Hi-Y Club
11/18	"Jet Propulsion"	United Protestant Church

"Public Information" -- General

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:

- 11/3 The appointment of W.E. Johnson as Assistant Manager of the Hanford Works Design and Construction Divisions was announced.
- 11/3 The Community Manager addressed the Dayton, Wash. Kiwanis Club on this date. An informative release based on his talk, "Community Management at Richland," was prepared and released.
- 11/12 A major reorganization of the Hanford Works Design and Construction Divisions was announced and explained by the Manager of the Division.
- 11/16 The intention of the Design and Construction Divisions' Contract Section to invite bids for the cleaning of furnaces and flues in 2,497 conventional housing units in Richland was announced.

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In November, 1,000 copies of the new G.E. comic book "Adventures Into the Past" were ordered through Purchasing and Stores Divisions. They will be used to stock the four information racks maintained by the New Bureau in 700 Area.

Two booklets, "Atomic Hired Hand for the Farmer" and "Atomic Energy-- Utopia or Oblivion", were mailed to a Prosser High School student as source material for a paper on the relation of the atom to biology.

A detailed report of publicity work done for National Fire Prevention Week by Community Relations Division people was prepared. It will be included in the entry book sent to the national fire prevention campaign contest.

Charles Heslep, new Information Officer in the A.E.C., visited Hanford Works from his Washington, D.C. office. Community Relations personnel scheduled interviews for Mr. Heslep with the Community Manager, the Assistant to the General Manager in charge of Education and Technical Matters, and the Assistant Manager of the Health Instrument Divisions. Community Relations people accompanied Heslep for the interviews and discussed current practices and future plans concerning distribution of information about Hanford Works.

Photographs of two Hanford Works people were scheduled, taken and sent to the General News Bureau. The photos were requested for use in alumni publications of two universities.

A free lance writer from Poulsbo, Washington, came to Richland for two days to gather material for articles for the trade publication market. He obtained considerable background information from the News Bureau during his visit and he agreed to mail his manuscripts back to the News Bureau so they could be checked before publication. The articles were received in November, checked by the News Bureau and a representative of Commercial Facilities Division and returned. Four articles were written and they will be sent to JEWELER'S CIRCULAR-KEYSTONE, SPORTING GOODS DEALER, AMERICAN DRUGGIST and AMERICAN LAUNDRY DIGEST.

The magazine, MINING WORLD, mailed an article to the News Bureau for clearance. The article stressed that pre-construction cost estimates of the recent expansion exceeded actual costs by only .6 of one per cent, a fact announced recently in a speech by the Assistant General Manager. Certain erroneous statements were corrected in the article and it was returned.

A story about purchasing activities at Hanford Works was requested by the Advertising and Publicity representative in San Francisco for the NORTHERN CALIFORNIA PURCHASING AGENT Magazine. The story was prepared and sent to Schenectady for clearance at the request of the General News Bureau. It has now been sent on to California.

At the request of the A.E.C. Information Control Officer, a complete biographical feature story about one of G.E.'s chief supervisors in Manufacturing Divisions was obtained. The story and a photograph of the individual were sent to the A.E.C.'s Washington Offices for forwarding to the individual's home town paper.

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Sets of floor plans of all Richland houses and corrected copies of the Pacific Northwest Industries publication about Hanford Works were forwarded to Design and Construction Divisions for distribution to personnel of a design sub-contractor who are moving to Richland.

"Employee Information" - Special Programs

The plan for promoting the new G.E. Group Health Insurance Plan was brought to completion during November, the major portion of the promotion plan being carried out during October. Works NEWS publicity on the new insurance Plan which was arranged during November by Special Programs included a story announcing a deadline for turning in application cards, and a story announcing that the required 75 per cent enrollment had been reached and that the new Plan would therefore go into effect on December 1. A letter from Mr. Prout was mailed to all employees during November to insure that all employees would be aware that any insurance they held under the former Group Disability Insurance Plan would be cancelled after December 1 if the new Plan went into effect, regardless of whether or not they signed up for the new Plan. This information was also posted in bulletin boards throughout the plant. Final tabulation of the enrollment cards shows 93.5 per cent of all employees elected to participate in the new Plan. Approximately 89 per cent were enrolled in the former Plan.

The extensive Special Programs publicity portion of the over-all promotion plan used to present the new G.E. Group Health Insurance Plan to employees was felt necessary due to the fact that although the new Plan provided greater benefits, the cost to employees was proportionately greater. Also, although maternity benefits under the new Plan were extended to include dependent wives of employees, maternity benefits for women employees were lowered.

The publicity plan included: Works NEWS stories, photographs, an editorial, and an editorial cartoon; two letters mailed to employees' homes from Mr. Prout and a booklet which outlined details of the new Plan; an advertising-type self-mailing piece which was mailed to all employees' homes; plant posters; a presentation plan book to be used by supervisors in presenting the Plan to those whom they supervise; and news releases to local newspapers released through the News Bureau. Separate meetings of supervisors and non-exempt employees were held by the Training and Program Development Group to explain details of the new Plan.

Special Programs assisted in the promotion of a "Town Meeting" type panel discussion on compulsory health insurance. Sponsored by the Richland Health Council and the Medical Division, the meeting was held in the Carmichael Junior High School auditorium. Special Programs activities included arranging for production of posters and complimentary tickets, and for the public address system.

All G.E. employees living in Richland were informed by news releases and by letter that monthly rent and telephone charges may be paid either by cash or check, starting February, 1950. Special Programs activities included writing the letter to residents, designing a deduction cancellation

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authorization card, and arranging for distribution. Publicity on this optional payment procedure appeared in the Works NEWS and was released to local newspapers through the News Bureau.

Arrangements for distribution of 1950 calendars and diaries was handled by Special Programs. Distribution was made on the basis of estimated needs made earlier this year by each Division.

Special Programs' assistance to the Safety Division during November included the designing and production of a poster to emphasize that a new major accident frequency rate record for Hanford Works can be achieved this year. In addition, a Hanford Works "Safetygram" was produced which will replace the use of the "Safety Flash" for informing plant personnel of accidents within the plant. The new "Safetygram", which is designed as a simulated telegram blank, will also be used by safety engineers to pass safety information and congratulations along to employees within the various areas. Artwork for both the poster and the "Safetygram" was produced by the Community Relations Division commercial artist, and both were printed in the plant printing section. The Special Programs supervisor attended the November meeting of the Safety Program Committee of the Nucleonics Safety Council and served as the Committee's secretary.

The third of four Suggestion System posters which are designed to stimulate participation in the Suggestion System was designed and produced through Special Programs during November. Theme of the November poster was "Better Use of Machines". Artwork was handled through the Community Relations Division commercial artist and printing was accomplished through the plant printing section.

To help stimulate interest and participation in the Community Activities Division's winter adult recreation program, a feature story with a series of photographs of the program's recreational activities was prepared by Special Programs and released to local newspapers through the News Bureau.

Assistance also was rendered to the Community Activities Division in the preparation of "Guide to Richland" booklet, and in revising a set of rules governing the use of the Community House in the Recreation Hall by local clubs and organizations. Special Programs revised copy in the "Guide to Richland" booklet and in the Community House rules from a community relations standpoint, and is assisting in the production of the booklet.

A current Design and Construction Divisions organization chart was compiled during November by Special Programs for inclusion in the Nucleonics Department's section of the forthcoming G.E. Organization Directory. The current Design and Construction Divisions' organization was not available last month when the other portions of the Nucleonics Department's organization was supplied to the Advertising and Publicity Division in Schenectady. Staff organizations of each Division and of the Department also was prepared by Special Programs for use in an Apparatus Department training program.

To assist in the re-enrollment of Hanford Works people in the American Red Cross blood campaign in Benton County which was carried out during November, Works NEWS publicity and a letter to all supervisors which

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explained the need for enrolling as many Hanford Works people as possible in the blood program was prepared by Special Programs.

Community safety publicity during November included three news stories which were released to local newspapers through the News Bureau. A change in the Van Giesen Bus Route and Area Bus route was also given newspaper publicity in the Works NEWS and in local newspapers to whom the story was released by the News Bureau.

In line with Special Programs responsibility for assisting the Medical Divisions in publicity and community relations matters, a Works NEWS story on how to avoid colds was prepared, and a letter to all members of Area Councils from the Health Activities Committee chairman was written. The letter requested that each month's health topic be discussed at monthly safety meetings. Objective of the news story and the letter is to help Hanford Works people to maintain good health, and also to help reduce absenteeism to its absolute minimum.

The employee handbook, "You and General Electric at Hanford Works", was received from the printer and distribution to all employees was begun. The new booklet is designed to serve as a job reference booklet for all G.E. employees at Hanford Works. The distribution plan specifies mailing to all nonexempt employees' homes with a letter from Mr. Prout which explained the purpose of the booklet and urged employees to read and retain the booklet for future reference. Exempt employees received copies of the booklet with an advance copy of the letter at plant addresses.

The 72-page, two-color booklet contains 30 two-color drawings and eight photographs. Layout and artwork for the booklet was accomplished by the Community Relations Division commercial artist. It contains a short history of General Electric, a description of how the Company is organized, information to help a new employee get started on his job, an explanation of the G.E. Employee Benefit Plans, plant and public medical services, a section of safety and security, and a description of the various phases of Richland community life. Production and distribution of the booklet were accomplished by Special Programs.

The Special Programs supervisor attended the November 40-hour Supervisors' Training Course which was presented by the Training and Program Development Section.

"Employee Information" - WORKS NEWS

During the month of November four issues of the Works NEWS were published. The quantity remained at 7,900 copies.

In each of the first three issues of the month, at the request of the Electrical Division, a list of new telephone numbers and changes for the preceding week was included. In the final issue a full-page insert covering the entire month of telephone changes was inserted.

"Candid Camera" was inserted in the November 4 issue which included a picture taken from one of the previous issues of the Works NEWS. Continued publicity was given in this issue to the G.E. Group Health Insurance Plan which was to go into effect on December 1. The introduction by the G.E. Education Program of a winter term was publicized

Employee and Community Relations Division

in this issue together with a registration form and a complete listing of courses offered.

Announcement of the acceptance of the new G.E. Group Health Insurance Plan was bannered in the November 11 issue. Publicity was given to the suggestion system with the announcement of the second highest award to be given at Hanford Works. Renewed emphasis was placed on the concerted effort being made during September, October, November and December to encourage better use of manpower, minutes, machines and materials. Included in this issue was the announcement of free offers of comic booklets to "Adventures Ahead" teen-age subscribers. Publicity was also given to scholarship applications under the G.E. Education Fund.

In promotion of the safety program at Hanford Works, announcement was made of the start of the fourth annual Maintenance Division Safety Derby in the issue of November 18. Starting with this issue the paper was published on a new stock selected for the improvement of cuts and general over-all appearance from a printing standpoint. In recognition of the efforts of reporters' services of one of the Works NEWS reporters, a box notice was included relative to his hospitalization and wishing him a speedy recovery.

In the November 25 issue announcement was made of the selection of area representatives for the Employee Sales Plan for the convenience of all G.E. people. A cartoon was included to promote the current drive for blood donors to help alleviate the critical shortage in Kadlec's blood supply. This issue marked the second appearance of the "Can You Tell Me?" column answering questions submitted by Hanford Works people on plant problems. In cooperation with the Richland Postmaster the first of a series of stories was published urging people to cooperate in speeding the Christmas mailing service. The articles are designed to include helpful information for Christmas mailing.

"Employee Information" -- Women's Features

Handwork by the women of the Dr. J. Samuel Taylor Orthopedic Guild was featured on November 4 in the first of three women's pages appearing in the four November issues of the Works NEWS. Pictures of the women preparing for their annual bazaar for the benefit of the Children's Orthopedic Hospital in Seattle, was featured on the page. Also included on the page was a promotional story for the Women's physical education classes held at the Richland Public Schools Adult Evening School.

A feature on the Allied Arts Association was prepared and appeared with pictures on page five of the November 18 issue of the Works NEWS. This was in accordance with the promotion of recreational activities available to Hanford Works people. The Women's page of that issue featured the points to be considered when buying the Thanksgiving turkey with a photo of a G.E. employee looking over a prospective purchase. The second lead on the page was a promotional story on the recreation nights being held by the Community Activities Division for Hanford Works men and women. A free knitting pattern was offered which included a National Needlework Bureau pattern of a sweater, cap and mittens. Twenty patterns were distributed upon the request of readers.

Employee and Community Relations Division

Let's Pack a Lunch that Packs a Punch was the feature on the women's page of the November 25 issue of the Works NEWS. The article included suggestions from the G.E. Consumer's Institute and the National Dairy Council. Free booklets were offered to readers on packing nutritious lunches. Twenty National Dairy Council booklets, "It's Lunchtime" were distributed at the request of readers. Illustrated directions on how to "drug-store" wrap a sandwich were added to the story. A photograph of a G.E. housewife in her kitchen packing lunches was included on the page.

As a result of the women's page article "Don't Let the Holiday Catch You Napping"...which appeared the last week in October, 116 free National Needlework patterns were distributed at the request of readers. Seventy-seven names were sent to the Penick Ford Company for free parchment cookie patterns offered by the J. Walter Thompson service.

The Union Pacific Railroad provided 225 full-color vacation booklets on California, the Pacific Northwest and Alaska, Yellowstone Park, Hoover Dam, Sun Valley, Bryce Canyon, and Colorado. The booklets lasted approximately one-half hour after the first one was distributed in the 705 building.

Movie catalogues from General Electric Company, the Union Pacific Railroad, the Canadian Pacific Railroad, the Melita O'Hara Travel Agency were distributed to three persons.

On November 25, letters were sent to 22 women's organizations in Richland, offering G.E. and other sound and color films of particular interest to women for the use of the clubs.

On November 28, 100 letters were sent to various Richland organizations suggesting that publicity for club activities of interest to all Hanford Works people could be run in a regular Works NEWS feature as a recreation service to Hanford Works. A call has been received from the Treble Clef and from the Richland Square Dance Club.

Every week a column appears in the Works NEWS listing rides or riders seeking transportation to various week end and vacation spots. One hundred fifty-six requests were received during the month of November for rides or riders to the following destinations: Spokane, Seattle, Portland, Yakima, Lewiston, Idaho, Pullman, Missoula, California, Denver, Missouri, Salt Lake, San Francisco, Casper, Wyoming, Pendleton, Wenatchee, Moscow, Detroit, Boise, Oklahoma, Iowa, and Walla Walla.

Hanford Works Photo House

DIVISIONS	TYPE OF PRINTS							Color Slides	Nega- tives	Nega- tives Classif.	Color Slides	Prefab. "A" Badges
	8" x 10"	5" x 7"	2" x 4"	2" x 2"	Classif. Prints	Classif.	Slides					
Medical	3	56				59	10					
Technical	21			52		24		39				
Community fire Div.		60										
Transportation	8					2						
Emp. & Comm. Relations--			385	3155		128						385
Employment												
Community Relations												
1. Special Prog.	44					34						
2. News Bureau	126					6						
3. Works NEWS	72					66					16	
4. Photo House												
TOTAL	274	116	385	3155	52	319	26	39				385

Total Prints - 3982

Total Neg. - 358

Photo Appointments--39

COMMUNITY DIVISIONS

SUMMARY-NOVEMBER, 1949

ORGANIZATION AND PERSONNEL

Number of employees on roll:	<u>Beg. of Month</u>	<u>End of Month</u>
Community Administration	6	5
Community Accounting	27	28
Community Public Works	445	421
Community Safety	3	3
Community Commercial Facilities	16	16
Community Housing	40	40
Community Fire	131	129
Community Patrol	82	83
Community Activities	12	12
	<u>762</u>	<u>737</u>

Changes in the force of the Community Divisions during the month of November, 1949, were as follows:

	<u>Reduced</u>	<u>Increased</u>
Community Administration	1	-
Community Accounting	-	1
Community Public Works	24	-
Community Safety	-	-
Community Commercial Facilities	-	-
Community Housing	-	-
Community Fire	2	-
Community Patrol	-	1
Community Activities	-	-
	<u>27</u>	<u>2</u>

TOTAL DECREASE, November, 1949 = 25

GENERAL

Sales of basic items show no appreciable change for the month of November.

Five retail business firms began operation in Richland during the month.

Unfilled applications for housing were reduced from 231 to 189.

Dormitory W-20 was vacated and placed in stand by condition.

Appropriations Request No. 69, Street Construction and Improvement, Jadwin Avenue and vicinity, and Appropriation Request No. 70, Richland Water Study, were approved by the Appropriations and Budget Committee; Project Proposals C-352 and 353 were forwarded to the Committee.

MTBinns/jak
12/12/49

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COMMUNITY DIVISIONS
PUBLIC WORKS DIVISIONS
NOVEMBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll	<u>EXEMPT</u>	<u>NON EXEMPT</u>	<u>TOTAL</u>
October 31, 1949	58	387	445
November 30, 1949	59	362	421

Personnel changes made during the month:

New Employees	1
New Employees (Rehires)	1
Transfers from Minor Construction	16
Transfers from Purchasing & Stores	1
Transfers from Community Accounting	1
Transfers from Transportation	4
Transfers from Maintenance	2
Returned from Sick Leave	1
Transfers to Minor Construction	14
Transfers to Transportation	14
Transfers to Purchasing & Stores	1
Transfers to Community Housing	1
Transfers to Power	1
Leave of Absences	2
Terminations	18

One transfer from Non exempt to Exempt roll

GENERAL

A review of the shop inventory materials being utilized in Maintenance Section is being made. This review is resulting in the excessing of some materials that would not be used in the next 90 days.

Due to the continued expansion of the housing maintenance program, eight employees were added to the Maintenance Section.

The mid-year budget review for the Public Works Divisions was completed. This review indicates a reduction of \$30,000 in the expected cost of "Waste Removal" from the original fiscal year budget.

The interior painting program was started on November 10 in Division 4 and 5.

Community Public Works Divisions

GENERAL (Contd)

The Fiftieth Anniversary Program has resulted in some constructive ideas being presented and some economies being effected.

The irrigation canal system is being cleaned thoroughly and all necessary repairs made. This will insure the availability of this system for use early next spring.

PROJECTS

C-210 - Automatic Traffic Signals - Project reported cancelled by Community Management.

C-254- Painting Exterior of 514 Permanent Houses - Work was completed November 18 1949 Request for modification of directive, to change completion date, was prepared November 21 1949. Request to close project was issued November 23, 1949.

C-274 - Central Fuel Oil Storage - Work was completed on November 18 1949. A request to close project was issued November 23 1949.

C-282 - R - Richland Village Dust and Pollen Control Program - Grass seeding was discontinued until spring, due to the fact that irrigation water has been turned off. Following areas were seeded this fall:

Playground at Retrick and Davison
Corner block at Davison and Hunt
Inner block of 1300 Hains
Inner blocks bounded by Van Giesen, Wilson, Stevens & Perkins
Playground at Duane Avenue shelterbelt
Area around the Public Health Building

Remaining areas to be seeded in the spring of 1950 include the area around the cemetery, court areas on Hunt Avenue and the Columbia High School playground.

All areas included in the field release for rye seeding have been seeded with the exception of a small area along the By Pass shelterbelt. This area must be scarified before seeding, and this will be done in connection with the shelterbelt planting scheduled for the next ten days. Some loss of rye was experienced from the storm during the weekend of November 26, 1949. The remaining seed is germinating at this time.

Work was started on the planting of street trees on this Project on November 9 1949. During the month 807 trees have been planted. Of the trees planted, 162 were on public areas and all work completed by project forces. The remaining 645 trees were planted in holes dug by tenants. Cottonwood and Birch Avenues were staked for 650 trees. To date, tenants have dug 559 holes on these streets indicating a response of approximately 86%.

Community Public Works Divisions

PROJECTS (Contd)

C-345-R - Insulation of Heat Ducts, Pre-Cut Houses - Contract was let to Tacoma Asbestos Company for this work in 449 pre-cut houses. Final approvals were obtained November 30 1949, and contractor will be given "Notice to Proceed" at once.

C-348 - Asbestos Siding and Painting Trim, 703 Building - Cost estimate was revised November 23, 1949. Request for modification of directive sent to Plant Security and Services Division for approval. Final specifications were issued November 29 1949.

C-351 - Installation of Irrigation System, Public Grounds - Irrigation project for 1950 was reviewed and additional information submitted to the Appropriation and Budget Committee for their consideration. This project was returned by the Appropriation and Budget Committee requesting the deletion of the work involved on expansion of Riverside Park to the south. Changes are being made and work on detailed plans is progressing.

Line staking of irrigation line required in the By Pass shelterbelt area was completed.

"S" PROJECTS

S 51 - Alterations to 1182 Building - Preliminary design and estimate being prepared for reason sheet.

S 86 - Water Shut-Off Valves, "U" and "V" Precut Houses - Final reason sheet revised November 23 1949.

S-216 - Rehabilitation of Irrigation Ditch - Rough draft for specifications prepared for checking.

S-217 - Steam Line to Multiple Apartments - This project is physically completed.

S-229 - Furnace and Flue Cleaning, Conventional Houses - Appropriation request approved by Atomic Energy Commission, October 5, 1949. Specifications revised November 8 1949, and bid opening is scheduled for December 5, 1949.

S-240 - Roof Repair and Maintenance, Prefabs - Appropriation request approved and bids opened November 15, 1949.

S 262 - Utilities for Churches - Cost estimating and sketches being prepared for reason sheet. Approximately 40% complete.

S-269 - Fence Around Water Recharge Basins - Cost Estimating and sketches being prepared for reason sheet. Approximately 25% complete.

S-290 - Automatic Traffic Signals - Rough draft reason sheet for informal approval was revised November 30, 1949.

Community Public Works Divisions

ENGINEERING SECTION

Organization and Personnel

Number of Employees on Payroll	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
October 31 1949	17	11	28
November 30, 1949	17	11	28

Personnel changes made during the month:

New Employees	1
Terminations	1

General

The following routine items were processed during the month:

Requisitions	47
Stores Stock Requests	8
Stores Stock Adjustment Requests	3
Purchase Orders Expedited	12

Work was started to effect a reduction of Stores Caption #3, Plumbing Supplies. This caption includes a large quantity of materials infrequently used on the Project.

The following were the number of jobs completed on Continuous Engineering Service Requests:

ESR #97	CH	Electric and Structural Inspection	10
ESR #98	CH	- Alteration Inspections	1
ESR #100	CH	Backcharge Estimates	1
ESR #118	CF	- Approved Alteration Permits	1
ESR #134	CA	- Backcharge Estimates	1

The following Engineering Service Requests were completed:

<u>Job No.</u>	<u>Description</u>	<u>Date Completed</u>	<u>Remarks</u>
225	CA Service Cost for Churches, Clubs and Organizations	11 23 49	Letter sent to Mr. Atterbury
221	CA Rider's Club Site Map	11 16 49	Tracing completed
284	PS Conversion of Mess Hall #3 to Warehouse Use (No. Richland)	11 2 49	Letter and estimate to Mr. Lindgren

4.

Community Public Works Divisions

General (Contd.)

<u>Job No.</u>	<u>Description</u>	<u>Date Completed</u>	<u>Remarks</u>
292 - CF	Occupancy Map Uptown Business	11-29-49	- -
294 CFD	Organization Chart	11-16 49	- - -

Technical information and instructions were furnished regarding the following:

Addition to Anderson Motors
Masonic Lodge Proposed Site
Addition to Ernie's Restaurant
Proposed Dry Cleaning Plant for North Commercial Area
Gasoline Tank for School System

The status of Commercial Facility Division sponsored construction is as follows:

Morning Sun Dairy - Construction started 9-8-49 95% complete
Theater - Approved 5 23-49 - Comments forwarded to Architect
Angerman Women's Apparel - Construction started 8 29 49 - 90% complete
House Dry Cleaners - Construction started 8 29-49 - 98% complete
Davis Furniture - Construction started 6-8-49 99% complete
Washington Investment Construction started 5 24 49 90% complete
National Bank of Commerce - Construction started 10 31 49 - 5% complete
Deymonaz Construction started 9-16-49 50% complete
American Lumber Company - Construction started 10 14 49 98% complete
Davis and Walker Auto Parts - Construction started 8 17-49 - 98% complete
Diettrich Food Store Construction started 11 3 49 15% complete
Addition to Yakima Tent and Awning - Withdrawn 11 2-49
Barnhart's Bakery Approved 8 29 49 - Awaiting award of contract
Keiser & Johnson Food & Drugstore Construction started 10-17-49 - 30% complete
Scott Publishing Company. Construction started 10-13 49 75% complete
Cascade Radio Station - Still awaiting information

5.

Community Public Works Divisions

CONSTRUCTION STATUS (Contd)

Parker's Hardware Store Construction started 10-13-49 - 95% complete
Multiple Business Building Construction started 11-2-49 - 25% complete
Drugstore, Morgan & Olberg - Awaiting detailed plans
Photographic Studio, Illis - Awaiting detailed plans
Food Store, Stone & Garmo Awaiting preliminary plans

The status of Community Activities Division sponsored construction is as follows:

Latter Day Saints Church - Construction started 2-5-49 45% 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 3-2-49 - Awaiting start of construction
Church of Nazarene - Construction started 4-12-49 90% complete
Church of Christ - Approved 2-18-49 - Letter sent to CF Barnes
Richland Lutheran Church Construction started 4-8-49 95% complete
Junior High School - Comments made on preliminary plans
New Elementary School - Awaiting preliminary plans
Swimming Pool Association - Awaiting detailed plans
Sacajawea Grade School Cafeteria Construction started 9-16-49 - 80% complete
Reorganized Latter Day Saints Church Construction started 8-22-49 - 13% complete
Christian Science Society Awaiting preliminary plans

Alteration Permits

An alteration permit was issued during the month to:

<u>Facility</u>	<u>Description</u>	<u>Approved</u>
New City Cleaners	Installation of Gas Pump and Storage Tank	11-23-49

Community Public Works Divisions

Status of outstanding permits for alterations is as follows:

<u>Facility</u>	<u>Description</u>	<u>Approved</u>	<u>Remarks</u>
Robley Johnson Studio	Extend Front Porch	3-23-49	95% complete
Richland Laundry	Construction Small Box	3-15-49	10% complete
Hanson's Enterprise	Install Sign	10-11-49	Not started
Robley Johnson Studio	Alteration to Dark Room	9-20-49	90% complete
The Mart	General Alterations	10-3-49	50% complete

The following work was done on leased areas:

1. Lots staked for the following:

- (1) Redeemer Lutheran Church
- (2) Masonic Temple
- (3) Barnhart Bakery

2. Leased area was surveyed and plot plan prepared for Christian Science Church.

Administration Engineering work in connection with roads, streets and grounds maintenance programs continued during the month.

Faulty design or construction was indicated when the heavy rain on November 23, 1949 caused an overflow and resulted in a great deal of damage around the north end of Carmichael School. The drainage on Lee Boulevard was not connected with the ditch.

OPERATION AND MAINTENANCE DIVISION
MAINTENANCE SECTION

Organization and Personnel

Number of employees on payroll:	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
October 31, 1949	18	183	201
November 30, 1949	19	190	209

Personnel changes made during the month:

Transfers from Maintenance	17
Returned from leave	1
Transfers to Maintenance	2
Transfers to Power	1
Terminations	8

One transfer from Non-Exempt to Exempt roll

7.

Community Public Works Divisions

General

A total of 45 house renovation orders were completed during the month, of which 32 were conventional houses and the remainder prefabs. Included in this work were 17 complete interior paint jobs, 27 partial paint jobs, and miscellaneous repair and cleaning as needed. At the close of the month there were 21 outstanding renovation orders.

The interior painting of dormitories W-2, W-3, W-5, W-6, M-1, M-2, M-3 and M-4 was completed in November. In addition to "Youth Center" and large Men's and Women's rest rooms in South end of Recreation Hall.

The residential interior paint program was started on November 10 in Divisions IV and V and 33 family units have been completed as of the close of the month. Tenant cooperation is fair and the operation is being carried out very efficiently.

Miscellaneous paint work performed included 19 bathrooms, numerous partition walls in 760, 761, 762, 703 and Municipal Building, 20 miles of road striping and the application of reflectorized striping on Yakima River Bridge.

The anchoring of ranch house coal bin walls was continued this month and a total of 730 units are now complete, 512 of these having been done in November.

Repairs to fire damaged house at 2409 Swift were completed, the work including replacement of 75% of rafters, roof and gable, complete interior painting, and miscellaneous minor work.

Utility closets in 36 prefabs were lined with celotex and floored with linoleum to control condensation damage.

Leveling and re-enforcing of floor joists was completed in 65 houses, this work being necessary to correct a condition caused by shrinkage and deflection of lumber.

A fire escape door was installed and alterations made to escape stairway at American Legion Auditorium and two escape doors were installed in 712-A.

Linoleum was replaced in 18 wash room or toilet room floors in dormitories, this installation being done in a manner that corrects a former problem of water leaking into adjacent or lower level rooms.

Work necessary to winterize the irrigation grids and evaporative coolers located in 700 and 1100 Areas is now totally completed.

Work was completed during the month on correction of a steam condensate problem at Building 760, where traps discharged into the bottom of two concrete valve pits. These pits were originally provided with a hole in the bottom for drainage, but the hole constantly closed off, thus flooding the pits and Ric-Wil line. Correction was accomplished by running condensate lines to one existing and one new dry well.

Community Public Works Divisions

General (Contd)

The vertical section of the Roettler coal conveyor at 784 Building was replaced due to a wearing through of the inside divider plate, which caused a hanging-up of the links. The urgency of this job necessitated some overtime work be performed.

Underground stop and waste valves were replaced at 10 prefabs during November, and an additional above ground valve was installed which allows for the tenant shutting off service for repairs to faucets, etc. This was done because the failure of the underground valves is ordinarily caused by inexperienced persons forcing the valve beyond its stop point.

Damaged concrete bath tubs were replaced with metal tubs in 30 houses during the month and this program is to continue on a schedule of two tubs per day.

A listing of miscellaneous work completed in November includes the replacement of 9 kitchen sinks, 9 water heaters, 1 toilet, 1 wash basin, 1 laundry tray, 5 furnace smoke pipes; installation of tile board in 58 bath rooms; repair of 22 roofs, 40 screen doors, 5 chairs and 2 beds; and the re-covering of 15 mattresses, and 3 chairs.

The replacement of steam condensate lines in 4 apartment buildings was completed this past month, this completing the project of replacing these lines in 8 apartment buildings, 4 having been done prior to November.

The Service Order Group completed a total of 2670 Service Orders during the month. 95.2% of this work being done for Housing Division, 1.2% for General, 1.8% for Concessions, 1.2% for Public Works and the remainder for various other Divisions.

The following is a status report of service orders:

On hand at beginning of month	288 orders
Received during month	2672 orders
Completed during month	2670 orders
On hand at end of month	290 orders

UTILITIES SECTION

Organization and Personnel

Number of employees on payroll:	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
October 31, 1949	9	60	69
November 30, 1949	9	58	67

Personnel changes made during the month:

Employees granted leave of absence	2
------------------------------------	---

Community Public Works Divisions

Steam

Emergency maintenance was required on the Roettler conveyor during the early part of the month. The balance of coal conveyor system was inspected and found to be in good condition.

The hammer roll assembly and one bearing were replaced on the coal crusher during the month.

Steam Production

Steam generated	26,698 M lbs.
Steam sent out	22,836 M lbs.
Coal consumed	4,108 M lbs.

Water

A. Domestic Water

A 52' section of 8" main was replaced at Harding and Duane. On Lee Boulevard, east of Stevens, we replaced a 262' section of 14" main.

All replacements are being made with schedule 30 pipe, factory tarred and wrapped, or schedule 40 pipe coated with tar in place.

Domestic Water System

	<u>Well Production</u> Million Gallons	<u>Avg. Daily</u> <u>Production</u>	<u>Total Consumption</u> Million Gallons	<u>Avg. Daily</u> <u>Consumption</u>
Richland	81.5057	2.7169	60.3300	2.0110
North Richland	-	-	37.3110	1.2437
Columbia Field	45.0388	1.5013	29.4738	0.9825
300 Area				
	<u>126.5445</u>	<u>4.2182</u>	<u>127.1148</u>	<u>4.2372</u>

Sewerage

All digester flame arrestor, vacuum breaker and pressure relief valve assemblies were insulated to prevent vapor from condensing and freezing in the assemblies.

Sewerage

	<u>Total Sewage</u> <u>Flow</u> Million Gallons	<u>Average Daily</u> <u>Flow</u> Million G.P.D.	<u>Average Rate</u> <u>Flow</u> Gals. Per Min.
Plant 1	26.200	.873	606
Plant 2	42.900	1.430	993
Total	69.100	2.303	1599

Community Public Works Divisions

Pasco Warehouse Area

Manually operated fan switches are being installed on oil furnaces. This will allow the purging of furnaces before lighting them thus preventing a possible explosion.

LABOR SECTION

Organization and Personnel

Number of employees on payroll:	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
October 31, 1949	10	131	141
November 30, 1949	10	101	111

During the month the following personnel changes were made:

Transfers from Minor Construction	1
Transfers from Purchasing & Stores	1
Transfers from Transportation	4
Transfers to Minor Construction	10
Transfers to Transportation	14
Transfers to Community Housing	1
Transfers to Maintenance	1
Transfers to Purchasing & Stores	1
Terminations	9

General

Fall grass seeding has ceased. A total of 807 Village street trees were planted during November. Tree surgery and maintenance of Village street trees and shrubs was continued.

During the month seeding of all areas to domestic rye on Print SK 11-675, Project C-282, Dust & Pollen Control, was completed.

Seven shipments of personal furniture were handled. Four men were required on handling government furniture and fixtures during month of November.

Work on installation of condensate lines to multiple apartments was completed.

Approximately 40 work orders covering excavations and backfill of existing utilities, for repairs and installation of new utilities have been completed.

11.

Community Public Works Divisions

General (Contd)

Installation of 1-1/2" pipe and backfilling, in 28 abandoned wells on project to be used for water table observation, commenced this month.

Irrigation

Winterizing of all Irrigation System within the Village was completed this month.

Several hundred feet of the main canal running north from Spangler Road to 3000 Area Well Field has been widened and banks sloped. Burning of vegetation along canal banks and cleaning out silt from canal bottom is in progress.

Several hundred yards of rock have been placed along bank of canal on the upstream side of the main canal head gates. This work was done by our crew at a minimum expense, using one dozer.

Placing of heavy rock along wall on downstream side of head gate is scheduled to start this week, thus eliminating further erosion and washing underneath wall.

Roads and Streets

Road and street maintenance continued as usual.

Materials used by road crew for maintenance in November:

Pre mix used on streets	38 tons
Pre-mix used on parallel walks & houses	26 tons
Pre mix used on steps	5 tons
Pre-mix used on park playground	52 tons
Pre-mix used on miscellaneous orders	33 tons
3/4 minus gravel on streets	109 tons
3/4 minus gravel on outer roads & misc. WO	508 tons
Bitumuls	660 gals.

Delivery of Coal

Coal delivered from 700 Area storage:

1131 Garage	101 tons
#2 Fire Station	2 tons
1182 Bldg.	2 tons
M-S Warehouse	1 ton
Pasco T-131	22 tons
Pasco Patrol T-54	1 ton
	<hr/>
	129 tons

COMMUNITY COMMERCIAL FACILITIES DIVISION

November, 1949

ORGANIZATION AND PERSONNEL

NOVEMBER

Number of employees on payroll

Beginning of month

16

End of month

16

COMMERCIAL FACILITIES:

The following figures indicate trends in commercial activities as related to various basic items:

	<u>October</u>	<u>November</u>
Cafeteria meal customers	43,671	41,779
Percent of room day occupancy - Desert Inn	61%	60%
Gallons of ice cream sold	2,779	2,698
Carnation milk & cream deliveries	69,524	63,434
Darigold milk & cream deliveries	3,015	2,892
Morning Sun Dairy milk & cream deliveries	13,323	12,939
Theater customer count	35,851	46,504
Gallons of gasoline sold	173,896	168,917

Total number of Commercial Facility Operators' employees, full and part-time as of November 30 - 1,031. This shows a net increase of 43 over last month's 988.

Construction was started November 1 on Dietrich's Food Market near the intersection of Duportail Street & Wright Avenue.

McCann's Boys' Wear opened for business November 11 in a section of Klopfenstein's, formerly occupied by Women's Wear Department.

Auto Supply and Machine, Inc. opened for business on November 14 in their new building located at 843 Stevens Drive.

Anderson Motors opened for business November 26 in their new location at 941 Stevens Drive.

New City Cleaners, Inc. opened for business November 17 in their new building located at 747 Stevens Drive.

The Variety Store, located in The Mart, opened for business November 25.

Nihart's Watch Repairing opened for business in The Mart on November 25.

An Alteration Permit was written to install, at Operator's expense, an electrically operated gas pump and storage tank of 300 gallon capacity at New City Cleaners, Inc.

COMMUNITY COMMERCIAL FACILITIES DIVISION

The following routine items were processed:

Letters regarding Patrol Reports	10
Work Orders	23
Back Charges	9
Patrol Orders	33

CONTRACTS AND NEGOTIATIONS

Supplemental Agreements were entered into with the following firms and/or individuals:

Greyhound Post Houses, Inc. - Supplemental Agreement No. I, dated October 1, 1949, covering the sale of packaged beer for consumption on the premises of the bus depot.

Wilmot's Morning Sun Dairy, Inc. - Supplemental Agreement No. I, dated November 7, 1949, which includes a loan agreement default provision.

Garmo's Food Store - Supplemental Agreement No. V, dated July 1, 1949, to provide an additional fuel allowance to the operator in lieu of furnishing of coal by General Electric.

L. C. Foisy, Operator of the Recreation Building, - Supplemental Agreement No. V, dated November 27, 1949, covering the sale of wine for consumption off the premises.

Randall & Doyle, Inc. - Supplemental Agreement No. II, dated October 28, 1949, to provide for fuel allowance to the operator.

The Mart was authorized to sublet a portion of its building to A. L. Nihart for use as a watch repair and jewelry business.

Vance Properties, Inc. was authorized to sublet space in the Desert Inn, formerly occupied by the Arctic Fur Company, to Mrs. Marian G. Lien, for use as a shop to display and sell ladies Lingerie, corsets and hosiery.

Assignment and Acceptance of Lease, dated July 9, 1949, was entered into, whereby C. D. Newland assigned all of his right, title and interest in and to the Commercial Facility Lease, dated July 9, 1949, unto C. D. Newland, W. J. Howells and William Ward, a partnership d/b/a The Mart.

Assignment and Acceptance of Lease, dated November 8, 1949, was entered into, covering the incorporation of the former partnership of Randall & Doyle.

COMMERCIAL FACILITIES EXPANSION PROGRAM

Number of businesses operating as of October, 1949	80
New facilities opened for business this month	<u>5</u>
* Total Commercial Facilities in operation	85

COMMUNITY COMMERCIAL FACILITIES DIVISION

COMMERCIAL FACILITIES EXPANSION PROGRAM - Con'd

New facility buildings under construction 9

New ground leases awarded 0

* 3 Businesses operating in temporary quarters

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:

Beauty Shop
Delicatessen
General Merchandise Store
Laundry & Dry Cleaning Plant
Music Store
Pop Corn Concession
Restaurant (drive-in)
Self-Service Garage
Self-Service Laundry
Sporting Goods Store
Tavern
Women's Wear (Maternity Shop)

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

November, 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll	<u>November</u>
Beginning of month	40
End of month	40

RICHLAND HOUSING

Housing Utilization as of Month End

	Conven-	Block	T	Pre-	Pre-	Apt.	Tract	Total	
Houses Occupied by Family Groups	tional			Cut	Ranch	Tract			
Operations	2206	265		382	841	1142	65	40	4941
Commercial Facilities	96	6		26	65	58		4	255
Community Activities	11			1	6	6	1	2	27
Post Office	5				3	14		3	25
Government	103	34		12	31	26	3	4	213
Schools	42			5	13	48	1		109
Kellex Corporation		5		3		1	1		10
Morrison-Knudsen	1			1					2
Atkinson-Jones	10	16		5	13	3	2		49
J. G. Turnbull	1	2		5	5	8	1		22
Giffels and Vallet	1				3	4			8
J. A. Terteling			10	1	2				13
Newberry Neon	2	1		1					4
Urban-Smythe & Warren				1	1	1			3
Vernita Orchards								5	5
TOTAL HOUSES OCCUPIED	<u>2478</u>	<u>329</u>	<u>10</u>	<u>443</u>	<u>983</u>	<u>1311</u>	<u>74</u>	<u>58</u>	<u>5586</u>
Houses assigned - awaiting tenants	13	1		3	10	14		1	42
Houses assigned (leases written)	9	3		4	7	7		2	32
TOTAL HOUSES	<u>2500</u>	<u>333</u>	<u>10</u>	<u>450</u>	<u>1000</u>	<u>1332</u>	<u>74</u>	<u>61</u>	<u>5760</u>

1.

COMMUNITY HOUSING DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Diff-erence
Conventional Type	2481	28	31	2478	Minus 3
Block Type	332	5	8	329	Minus 3
T Type	10	0	0	10	None
Precut Type	444	11	12	443	Minus 1
Ranch Type	973	31	21	983	Plus 10
Prefab Type	1309	29	27	1311	Plus 2
Apartments	72	4	2	74	Plus 2
Tract	60	1	3	58	Minus 2
Total	5681	109	104	5686	Plus 5

Dormitory Statistics

Dormitories	Occupants	Vacancies	Total Beds
Men - Occupied 13	475	41	516
Men - Unoccupied			
Women - Occupied 13	*451	181	532
Women - Unoccupied 2			

Women's Dormitories

occupied by:

G. E. Office	1
Education	1
Apartments	1
	<u>31</u>

* This includes space of 6 beds in W-9 being used for supply rooms and dormitory offices.

GENERAL

Allocation Section Statistics

Total houses allocated to new tenants	46
Exchanged houses	14
Moves (within the Village)	21
Total new leases signed	109
Turnovers	8
Houses sent to renovation	34
Houses assigned "As Is"	25
Terminations	39
Total Cancellations	104
Applications Pending	189

Tract house K-782 was vacated on November first and turned over to the A.E.C. for sale.

Due to the large number of vacancies in the woman's dormitories it was possible to place W-20 in standby condition on November 11.

Tract houses N-1106 and O-1163 were renovated and rented during the month.

On November 21 the school district requested that five rooms be held in dorm M-13 for teachers, and that all others be released for occupancy by other girls.

TENANT RELATIONS

The processing of Service Orders, Work Orders, and Backcharges during the month is as follows:

	<u>Issued from Oct.31 to Nov. 30</u>	<u>Incomplete Nov. 30</u>	<u>Issued Previous Month</u>
Service Orders	2635	290	2280
Work Orders	896	1072	423
Backcharges	204	7	232

33 Conventional house interiors were completed.

19 Bathrooms were repaired and painted.

In 8 dormitories minor carpenter repairs and interior paintings were completed.

ITEMS OF INTEREST

	<u>TOTAL OUTSTANDING</u>	<u>TOTAL OUTSTANDING PREVIOUS MONTH</u>
Laundry Tubs	39	22
Bathtubs	71	52
Sink Linoleum Replacements	80	50
Bathroom Tileboard	142	50
Bathroom Linoleum	96	
Kitchen Floor Linoleum	20	

Alteration permits issued during the month of November totaled 64 as compared to 68 the month of October

Construction of tool sheds	4	Sanding floors	2
Erection of Greenhouse	1	Installation of furnace thermostat	1
Installation of humidifier	4	Electrical wiring	6
Installation of automatic washer	11	Installation of water softener	2
Conversion of furnace to butane	1	Linoleum on kitchen floor	1
Construction of driveway	7	Installation of air conditioner	1
Construction of fence	5	Remove bookcase in living room	1
Raise threshold	3	Change hinges on screen door	1
Basement excavation	9	Partition in basement	2
Glazing sunporch	1	Construction of patio	1

1208 Inspections were made during the month of November, 1949. A breakdown of the inspections shows the following distribution:

Linoleum	77	Leaking basements	16
Walls	39	Lot Lines	14
Bathroom (painting)	57	Alteration permits	135
Sidewalks	28	Miscellaneous	305
Floorboards	27	General House Inspections	320
Top soil	22	Inspection of interior painting	126
Window shades	54		

DORMITORIES

A re-survey of grounds was made during the month to determine best methods to renew beauty of grounds, with consideration for permanency and cost.

Sanding in M-12 is rapidly nearing completion. M-11 will be started shortly.

W-20 was closed during the month.

Shower stalls in M-11 and M-14 are now being replaced, with consideration being given to others needing repair or replacement. Various methods of doing these shower stalls are being considered.

Due to severe winds during the month, it was necessary to make numerous repairs to roofs, especially on the BOQ dorms.

Drapes in the dormitories are now being cleaned.

Several of the buildings have had new linoleum laid in the shower rooms to prevent water damage to buildings.

Eight buildings have now been completed on the dormitory renovation program, with others being considered for similar improvement.

M. S. WAREHOUSE

	ITEMS	AMOUNT	
Received Inventory Items	908	6269.82	
Received on Store Order	3702	1424.04	
	<u>4610</u>	<u>7693.86</u>	Inv. Items total 101,465.88
Disbursed Inventory Items	Transferred to plant	1912,00	7,693.86
			<u>109,159.74</u>
Dorm Furniture	58	1016.68	
Free Issue	1230	1251.42	
Cash	52	51.54	
Dorm Supplies	3606	1013.74	
Warehouse Supplies	5249	131.60	
Dorm Linens	5	14.30	
Dorm Shades	106	130.52	
TOTAL INVENTORY ITEMS DISBURSED			5,521.80
Inventory Items Balance			<u>103,637.94</u>
Plant Inventory Items			41,828.96
Received	44	8232.20	
Disbursed	33	9864.24	
TOTAL PLANT ITEMS INVENTORY			40,196.92
GRAND TOTAL INVENTORY			143,834.86

COMMUNITY SAFETY DIVISION
NOVEMBER, 1949

ORGANIZATION AND PERSONNEL

	<u>November</u>
Number of employees on payroll	
Beginning of month	3
End of month	3

GENERAL

Richland's entry for the 1949 Fire Prevention Contest has been forwarded to the National Fire Prevention Association.

The Washington State Safety Inspector made an inspection on the two dry cleaning establishments in Richland, and the operators have received written recommendations from him. It was indicated that future plans are being made for inspection of all major facilities and public gathering places that fall under the Department of Labor and Industries.

Materials have been procured for our twenty-four sheet highway bulletins, and this program is now waiting for the contractor to start work.

Fire Survey is underway, and work sheets for the school buildings have been completed by the Fire Prevention Section. These will be ready for study and estimating of cost by the first of next week.

A campaign against improper lighting on bicycles was launched by the Patrol Section. The purchase of bicycle lights at local stores indicated a fair response from the parents. This campaign will have to run for some time to completely cover Richland's large number of bicycles.

The Village Safety Committee will be replaced January 1, 1950, by a newly organized Richland Safety Council. Plans are being made to organize the council in direct lines recommended by the National Safety Council. Robert Pike, of the National Safety Council, will be in Richland on December 5th and 6th for the purpose of setting up procedures for the new council. The membership will be appointments by Presidents of local chapters of the National Service groups. The purpose of the council is to plan and put into effect Public Educational Programs on fire, traffic, home, recreation, etc., safety. The plan is that the council will be a chartered council of the National Safety Council.

The National Safety Council has been requested to make Service Awards to the Villager, Tri-City Herald, Station K.P.K.W. and K.W.I.E. for the space and time they have given to the safety programs. To date, the Villager has been the only recipient of this award.

Besides the weekly program, "The Safety Story Teller", which was scheduled for a thirteen week period over Station K.P.K.W., two five minute safety interviews were given over Station K.W.I.E. this last month.

COMMUNITY FIRE DIVISION

November 1949

Organization and Personnel

November

Number of employees on payroll	131
Terminations	<u>2</u>
End of the month	129

Richland North Richland

Response to alarms	13	0
Fire Loss (Estimated)		
Hanford Works	\$67.41	0.0
Personal	77.98	0.0
Investigation of minor fires and incidents	13	3
Safety meetings held	16	8
Inside drills	70	42
Outside drills	13	29
Alarm boxes tested	173	74
2½" hose tested	2,500 ft.	

Miscellaneous Activities:

1. Conducted first aid class for 18 Girl Scouts at Marcus Whitman Grade School.
2. Conducted tours of Station No. 1 for 20 miscellaneous visitors.
3. Furnished instructor for first aid class in 300 Area Electrical Division.
4. Maintained standby twice for controlled burning in dangerous areas.
5. Gave one examination for Boy Scout firemanship merit badge.
6. Flow tests made of fire hydrants in North Richland.

Fire Prevention

Inspections:

700 Area Buildings	74
1100 Area Buildings	60
Commercial Facilities (Gov't owned)	51
Government Airport Buildings	5
Schools, Clubs and Churches	7
Dormitories	30
Homes	<u>0</u>

Total 227

Fire Extinguishers:

Inspected	1058
Recharged	803
Replaced	550
Repaired	185

Miscellaneous Activities:

1. Assembled reports and photographs of Fire Prevention Week activities, compiling this data into a pictorial 90-page book. This book was sent to the Fire Waste Committee of the National Board of Fire Underwriters as Richland's entry in the National Fire Prevention Week Contest.
2. All sprinkler systems inspected weekly and Desert Inn alarm system tested twice during the month.
3. A fire extinguisher demonstration was held for 19 laboratory employees at Kadlec Hospital.
4. Work begun on AEC Five Year Fire Prevention and Protection Survey of government owned buildings in Richland (except homes).
5. In preparation for excessing surplus fire extinguishers, all those showing wear were replaced from reserve stock.

COMMUNITY DIVISIONS

COMMUNITY PATROL

NOVEMBER 1949

ORGANIZATION AND PERSONNEL

	<u>November</u>
Number of employees on Payroll:	
Beginning of month	83
End of month	83

GENERAL

On November 8, 1949, Sgt. A. L. Reil of the Crime Prevention Section spoke to the students of the Lewis and Clark School and Carmichael Junior High School relative to the large number of stolen and abandoned bicycle cases occurring during the past few months.

On November 9, 1949, Capt. J. S. Johnson of the Crime Prevention Section spoke at a meeting of the Chamber of Commerce on the subject of fraudulent checks. Capt. Johnson also issued a pamphlet on this subject to the managers of all the facilities soliciting their cooperation in controlling this situation.

On November 9, 1949, Janet Fritts of the Community Patrol Division was assigned to handle Employee Traffic Appliance Purchase Forms for personnel assigned to the 770 Building Group.

The Community Patrol Division began issuing a Daily Police Bulletin on November 18, 1949. This practice conforms to that employed in most municipal police departments in that it relays current complaints, cancellations, pick ups, stolen items, missing persons, etc., to all members of Patrol without delay.

On November 23, 1949, Capt. C. F. Klepper of the Community Patrol Administrative Section was interviewed on Radio Station KWIE in conjunction with a program sponsored by the National Safety Council relative to pedestrian accidents.

On November 24 and 27, 1949, the Community Patrol Division assisted County Sheriff's officers in recovering bodies from the Yakima and Columbia Rivers. Manpower and equipment were made available for these operations. Patrol received considerable commendation for their efforts in this respect.

On November 28, 1949, a foot roving patrol was established in the new uptown business district.

Capt. W. A. Ziegler and Capt. C. F. Klepper made a visit to the Walla Walla Police Department during the month for the purpose of inspecting their records division and also for reviewing other police operating methods and procedures with them.

During the month, Capt. J. S. Johnson of the Crime Prevention Section spoke at a meeting of the Youth Council on "Youth Control."

During the month, a total of 48 juveniles were fingerprinted and conducted on a tour of Patrol Headquarters.

Community Patrol Division - Continued

During the month of November, 11 prisoners were processed through the Richland Jail.

During the month of November, 24 gun registrations were taken by Richland Patrol.

During the month of November, a total of 144 Unusual Incident Reports were received, which consisted mainly of Larcenies, Stolen Bicycles, and Destruction of Property. Regular Traffic Violation and Offense Statistics are presented in separate tables attached to this report.

TRAFFIC

A survey of certain narrow streets in the residential area was conducted and a report submitted to the Community Manager, recommending that all parking be prohibited during daytime hours. The survey revealed that parking compounds in the vicinity of the streets in question, were adequate to park all cars owned by residents. Congestion would be relieved and the accident rate would decline, providing the cars could be

Community Patrol Division - Continued

ACTIVITIES AND SERVICES (RICHLAND)

	<u>September</u>	<u>October</u>	<u>November</u>
Check on absentees	5	4	8
*Persons assisted	176	181	145
Doors & windows found open in commercial facilities	47	55	33
Lost children found	15	29	11
Ambulance runs	35	33	23
Lost dogs reported	8	4	7
Dog, cat, loose stock complaints	41	32	70
Persons injured by dogs	7	9	6
Bank escorts & details	40	40	33
Fires investigated	26	26	17
Miscellaneous escorts	160	158	15
Complaints investigated	134	171	153
Missing persons reported	<u>5</u>	<u>4</u>	<u>2</u>
Totals	699	746	523

*Includes: Delivery of messages to residents who have no telephone; relay of messages; handling requests of out of town police; miscellaneous aids to private parties; assisting other departments; etc.

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	<u>September</u>	<u>October</u>	<u>November</u>
Check on absentees	0	0	0
*Persons assisted	126	98	63
Doors & windows found open in commercial facilities	68	9	17
Lost children found	4	1	0
Ambulance runs	0	2	0
Lost dogs reported	0	0	0
Persons injured by dogs	2	1	1
Dog & cat complaints	3	1	2
Bank escorts & details	27	16	16
Fires investigated	7	3	1
Miscellaneous escorts	17	16	8
Complaints investigated	19	5	23
Missing persons reported	<u>0</u>	<u>0</u>	<u>0</u>
Totals	273	152	131

*Includes: Contacting parties on long distance calls; locating persons wanted for various reasons; relaying messages; assisting outside police agencies; assisting other departments; aiding private persons; etc.

COMMUNITY PATROL DIVISION

FORCE REPORT

NOVEMBER 1949

<u>Patrol</u>	<u>Entire Patrol</u> <u>10-31-49</u>	<u>Entire Patrol</u> <u>11-30-49</u>
Patrol Supervisor	1	1
Captains	5	5
Lieutenants	8	8
Sergeants	11	11
Patrolmen	<u>54</u>	<u>54</u>
Totals	79	79
 <u>Clerical</u>		
Steno-Typists	1	2
Clerks	<u>2</u>	<u>2</u>
Totals	3	4
Grand Totals	82	83

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

November - 1949

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
Richland	15	20	0	0	1	1	4	4
North Richland	0	0	0	0	0	0	0	0
Totals	15	20	0	0	1	1	4	4

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
Richland	10	2	4	7	0	1	1	10
North Richland	0	0	0	0	0	0	0	0
Totals	10	2	4	7	0	1	1	10

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
Richland	2	1	0	0	130	105	0	0	4	5	0	0	136	111
North Rich.	0	0	0	0	4	7	0	1	1	4	0	1	5	13
Totals	2	1	0	0	134	112	0	1	5	9	0	1	141	124

COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.	Nov.
Richland	19	20	7	13	1	6	0	6	3	7	9	7	1	14	17	13	57	86
N. Rich.	7	4	1	2	2	0	1	1	0	0	2	1	0	0	4	1	17	9
Totals	26	24	8	15	3	6	1	7	3	7	11	8	1	14	21	14	74	95

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on November 25, 1949, at Dupcrtail Street, west of Thayer Drive - 889 Cars.

COMMUNITY PATROL DIVISION
RICHLAND JUSTICE COURT CASES

NOVEMBER 1949

VIOLATION	NO OF CASES	NO. OF CONVICTIONS	TOTAL FINES	TOTAL SUSP.	TOTAL SENT. TO JAIL	SENT. TO SUSP.	LICENSE REVOKED	AVERAGE FINE PAID	CASES DISMISSED	WARRANTS ISSUED
Drunken Driving **	4	4	\$235.00	\$50.00			4	\$58.75		
Reckless Driving *	2	2	\$75.00				2	\$37.50		3
Negligent Driving	13	13	\$220.00					\$16.88		1
Speeding ***	23	23	\$112.50					\$13.85		2
Stop Sign ****	16	16	\$87.00	\$18.00				\$5.43	1	
Stop Drivers License	12	11	\$99.50	\$7.50				\$9.05		
No Drivers License	7	7	\$82.00	\$12.50				\$11.71		
F.T.Y.R.O.W.	1	1	\$2.50	\$10.00				\$2.50		
F.T.Y.R.O.W., to Ped.	1	1	\$38.50	\$10.50				\$3.50		
Illegal Parking	11	11								
Permitting Unlicensed										
Person to Operate	1	1	\$7.50					\$7.50		
Motor Vehicle	1	1	\$5.50					\$5.50		
Ran Traffic Light										
Driving Wrong Way		1	\$7.50					\$7.50		
On One Way Street**	1	1	\$7.50					\$7.50		
Defective Brakes	1	1								
	93	92	\$1,180.00	\$108.50			6	\$187.18	1	6

Total Fines \$1,180.00
Less Susp. \$108.50
Total Fines Rec. \$1,071.50

* 1 Case, Calif., Drivers License, Susp., and Driving privileges in Wn., State
Susp., for (3) months.
* 4 Cases amended to Negligent Driving
** 1 Case amended to Negligent Driving.
*** 1 Case nol prossed due to mistake in location of Violation on ticket.
**** 3 Cases included with other violations.
***** 5 Cases included with other violations.
***** 1 Case included with other violation.
***** 1 Case "Hit and Run and Failure to Stop and Identify", nol prossed due to insufficient evidence and by and with consent of individual complainant and presenting officer.

COMMUNITY PATROL DIVISION

CRIME PREVENTION SECTION

MONTHLY REPORT
NOVEMBER, 1949

Classification of Offenses	Offenses Reported to Patrol	Offenses Unfounded	Actual Offenses		Offenses Cleared by		Perpetrators Involved
			October	November	Arrest	Other Action	
Assault.....	0	0	2	0	0	0	0
Burglary.....	1	0	1	1	1	1	1 (a)
Breaking & Entering.....	6	0	0	6	2	2	2 (b)
Attempted Breaking & Entering...	1	0	0	1	0	0	u
Larceny (Except Auto & Bike)							
Over \$50.00.....	3	0	2	3	1	1	u (c)
Under \$50.00.....	44	2	18	42	24	0	0
Larceny by Check.....	0	0	1	0	0	0	u
Forgery.....	1	0	1	1	0	0	1 (d)
Bike Theft.....	36	0	18	36	23	0	u
Dest. of Personal Property.....	2	0	3	2	0	2	2 (e)
Dest. of Government Property.....	4	0	4	4	0	1	1 (f)
Loss or Theft of Gov't. Prop.....	3	0	2	3	0	0	1
Investigation.....	11	1	2	10	9	1	11 (g)
Attempted Suicide.....	1	0	0	1	1	0	1
Disturbance.....	6	0	9	6	4	5	7 (g)
Drunkness.....	4	0	8	4	0	0	4
Public Nuisance.....	2	0	0	2	0	0	2
Offense Against Family & Children..	3	0	2	3	3	3	3 (h)
Missing Persons.....	3	0	2	3	0	0	3
Co-Habitation.....	0	0	1	0	0	0	0
Indecent Exposure.....	1	0	1	1	1	1	1
Vandalism.....	11	0	17	11	3	0	16 (i)
Malicious Mischief.....	4	0	8	4	4	4	6 (j)
Pickup for Outside Agency.....	2	0	1	2	1	1	2
Auto Theft.....	1	0	1	1	1	1	1
Prowlers.....	3	0	2	3	0	0	u
Obtaining Money Under False P....	1	0	0	1	0	0	u
	154	3	107	151	85	6	65

(Continued on Page Two)

COMMUNITY PATROL DIVISION

Page Two--CRIME PREVENTION MONTHLY REPORT, NOVEMBER, 1949

- (a) 1 Case Perp. by 1 Juvenile Age 11.
- (b) 1 Case Perp. by 3 Juv. Ages 15, 16, & 17.
- (c) 1 Case Perp. by 4 Juv. Ages 15, 16, & 17.
- 1 Case Perp. by 3 Juv. Ages 15, 16, & 17.
- 1 Case Perp. by 1 Juv. Age 13.
- 1 Case Perp. by 1 Juv. Age 13.
- 6 Cases Perp. by 1 Juv. Age 14.
- 6 Cases Perp. by 1 Juv. Age 13.
- (d) 1 Case Perp. by 2 Juv. Ages 13.
- (e) 1 Case Perp. by 3 Juv. Ages 19, 20 & 21.
- (f) 1 Case Perp. by 3 Juv. Ages 14, 15, & 16.
- 1 Case Perp. by 3 Juv. Ages 10 & 16.
- (g) 1 Case Perp. by 2 Juv. Ages 10, 11 & 12.
- (h) 1 Case Perp. by 4 Juv. Ages 14, 15.
- (i) 1 Case Perp. by 1 Juv. Age 18.
- 1 Case Perp. by 1 Juv. Age 18.
- (j) 1 Case Perp. by 2 Juv. Ages 14.
- 1 Case Perp. by 2 Juv. Ages 14.
- 1 Case Perp. by 1 Juv. Age 14.
- 1 Case Perp. by 1 Juv. Age 11.

u Represents Unknown
 No Colored Persons Involved.
 Value of Property Recovered \$1,961.90 (23 bikes)

COMMUNITY PATROL DIVISION

Number of offenses known to police per 10,000 inhabitants in cities between 10,000 and 25,000 inhabitants:

Classification	Wash. Oregon & Calif.		Richland and North Richland		
	Six Months	One Month	Six Months	October	November
(Jan-June 1948)	Average		(Jan-June 1948)	1949	1949
Murder.....	161	.031	0	0	0
Robbery.....	3.47	.58	1.00	0	0
Aggravated Assault..	1.75	.29	6.66	1.33	0
Burglary.....	35.69	5.95	4.63	.66	.66
Larceny.....	127.06	21.18	47.16	25.33	54.00
Auto Theft.....	15.56	2.59	3.10	.66	.66

Number of offenses known to police per 10,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Classification	State of Washington		Richland and North Richland		
	Six Months	One Month	Six Months	October	November
(Jan-June 1948)	Average		(Jan-June 1948)	1949	1949
Murder.....	.140	.023	0	0	0
Robbery.....	4.90	.82	0	0	0
Aggravated Assault...	.78	.13	6.66	1.33	0
Burglary.....	36.91	6.15	4.63	.66	.66
Larceny.....	92.22	15.37	47.16	25.33	54.00
Auto Theft.....	18.15	3.03	3.10	.66	.66

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

Classification	National Average	Richland and North Richland		
	Six Months	Six Months	October	November
(Jan-June 1948)		(Jan-June 1948)	1949	1949
Robbery.....	55.5	0	0	0
Burglary.....	59.9	8%	0	100%
Larceny.....	45.2	13%	5%	13%
Auto Theft.....	71.6	0	100%	0

Note: Statistics of Juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

November, 1949

COMMUNITY DIVISIONS

COMMUNITY - ACTIVITIES DIVISION
November

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of month		12
Additions	0	
Terminations	<u>0</u>	
End of month		12

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel, as of November 30, 1949:

Administration	6
Principals & Supervisors	16
Clerical	18
Teachers	245
Health Audiometer	1
Building Custodians	50
Cooks	29
Nursery School & Ex. Day Care	11
Bus Drivers	<u>2</u>
	378

CLUBS AND ORGANIZATIONS

The number and types of organizations presently served by the Community-Activities Division include:

Business and Professional Clubs	19
Churches & Church Organizations	25
Civic Organizations	4
Fraternal Organizations	20
Music & Art Associations	8
Recreation & Hobby Groups	38
Schools & Parent Teachers Associations	13
Social Clubs & Organizations	10
Veteran & Military Organizations	12
Welfare	6
Youth	
Boy Scouts	19
Camp Fire Girls	36
Girl Scouts	49
Misc.	7
Miscellaneous	<u>7</u>
Total	273

Community - Activities Division

As of November 30, 1949, organization's personnel included:

Villagers, Inc.	7
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	1
Red Cross	3
Castle Club	1
Post Office	50
Veterans Administration	2
Girl Scouts	2
Masonic Lodge	1
	<hr/>
	74

The Richland Community Chest Drive has been completed with 80 per cent of its quota attained. A total of \$26,325 was contributed out of the initial quota of \$32,900.

The Parent-Teacher Association met at a district conference in Richland on November 1. Over 300 members from six southeastern counties were present at the program that consisted of many outstanding speakers, luncheons, and group sessions. A tour of Richland and North Richland was also in the itinerary.

On November 1, 1949, the Atomic Energy Commission approved the moving of the Castle Club building from its present site to the new club site area located on Goethals extended. This move will not be made until funds are available.

The Marine Corps League Inc. occupied Tract House O-1201 on November 1 as their clubhouse. The building was accepted on an "as is" condition with several major improvements planned in the near future.

Effective November 1 the Masonic Temple lease was cancelled. This cancellation was necessitated by the construction of the dike and all utilities disconnected. On November 8, the Masonic organizations were granted permission to move all furniture, etc. belonging to the temple and the Government equipment to a storage warehouse in Pasco. The Masonic organizations have assumed full responsibility for this equipment. A suitable storage place in Richland or North Richland failed to materialize and the Temple Board felt that it was necessary to make this move because of the amount of vandalism at the present location.

The Youth Council has announced that during the Months of November and December, three craft classes are being held in the handicraft room in the Community House. Textile painting and copper-craft are being held each Tuesday and Thursday evenings with a course in leathercraft being given every Wednesday evening.

Community - Activities Division

The renovation of the interior of the south room in the Community House (Recreation Hall) was completed on November 11. The entire interior of the room was repainted, a 12 x 16 closet was constructed in the southeast corner of the room to provide storage facilities, all venetian blinds were thoroughly cleaned and broken slats were replaced, and wooden safety bars were installed on all windows around the entrance ways. The cleaning and removing of staples, etc. from the walls was done by the Youth Council and all carpentry work and painting was done by the General Electric Company.

Drop type fluorescent lighting was installed in the handicraft room of the Community House (Recreation Hall) on November 2. This lighting provides approximately 50 candlepower throughout the entire room.

It was announced on November 3, that the Polio Fund benefited \$800 from the comical football game sponsored by the Lion's Club with the aid of the Rotary, Chamber of Commerce, and the Kiwanis Club.

On November 4, Alec Templeton was the guest artist at the Community Concert held in the Carmichael Junior High School. It is estimated that over 1,000 people attended this concert.

The Veterans of Foreign Wars and Auxiliaries of District #17 held a dinner meeting in the Richland American Legion Hall on November 6. Several outstanding speakers were on the program and a Chinese Auction was held to raise funds for the district treasury.

Representatives of the Plant Security and Services Division and the Community-Activities Division held a meeting on November 8, to determine the property that will be sold to churches, clubs and organizations and the equipment that will have to be returned.

On Tuesday, November 8, at the regular meeting of the Toastmistress Club it was announced that Mrs. Kay Dalton was chosen as Richland's Woman of the Year.

The newly formed Hi-Spot Council held its first meeting on November 9. This council is made up of one member each from the High School PTA, which will provide hosts on Saturday evenings; the Lions Club and Kiwanis Club, which will provide hosts on Wednesday evenings; and the American Legion along with the Junior Chamber of Commerce, will assist at special functions and provide substitute hosts whenever they are required.

The Richland American Legion Post #71 sponsored the annual Armistice Day program held in the Village Green at 11:00 AM on November 11. The High School band provided the music for the occasion. In the evening the Legion held a dance at their club with the proceeds going to the March of Dimes.

The exterior painting of the Veterans Administration building, located at 329 Cullum, was completed on November 14.

A Sadie Hawkins Dance was held in the Desert Inn on November 14. The Derm Club sponsored the affair with a large public attendance.

Community - Activities Division

The Atomic Energy Commission approved on November 15, 1949, the reduction of the Castle Club rent, which was set at \$50.00 per month under the new rental agreement, to \$30.00 per month. The reduction of this rent was due to the initial estimated value of, and improvements, made by the company. It was brought to the Community-Activities Division's attention that approximately half of the improvements were made by the Castle Club Organization thusly reducing the original estimated value and lowering the rent.

On November 15, 1949, the regular monthly meeting of the Recreation Advisory Committee was held. The Committee recommended for approval, subject to proper security clearances, the Sacajawea Model Railroad Club, Richland Calf Roper and Rodeo Association, Ku Phi Mu, and Womens Auxiliary of Kadlec Hospital. The minutes of the October 11 meeting were approved by the Atomic Energy Commission on November 10, 1949, with final approval given to the Joint Council of Technical Societies.

The comedy "Tovarich" was presented by the Richland Players, Inc. at Carmichael Junior High School on November 17, 18, and 19. The play was well received by the many in attendance.

On November 8th the Fifth Grade Girl Scout Troop #49 was organized at Spalding Grade School. This troop will serve those girls living in the Spalding territory.

Sixty-two Villagers donated blood to the Red Cross Blood Bank on its November visit to Richland.

A concert was presented to parents and friends of Carmichael Jr. High students on Sunday November 20. Several specialty numbers were presented along with Choir, Orchestra and Band. All participants in the concert were Junior High School students.

The P.T.A. of Lewis and Clark School installed twelve new pieces of playground equipment in the school yard. The equipment was purchased and installed by the Parent Teachers organization of that school.

It was announced that the jointly sponsored Turkey Shoot held at the Sacajawea Rifle and Pistol Club on Sunday, November 20, with the aid of the Junior Chamber of Commerce, was a complete success and that a similar shoot is planned in the near future by these organizations.

On November 21 the Richland Villager received the 1949 Accident Prevention Award for the appreciation of their support in the 1949-50 Stop Accidents Campaign.

The Richland Kiwanis Club received 1,000 bulbs from Tiel Holland in appreciation for the "Bundles for Tiel" sponsored by the Club for the past four years. There was 800 tulip bulbs and 200 narcissus bulbs in the gift. The Kiwanians will plant the bulbs around Kadlec Hospital with a suitable plaque indicating that the flowers are a gift from Holland.

Community - Activities Division

The University of Washington Touring Theatre presented the stage production of "Taming of the Shrew" on November 25 in the Carmichael Junior High Auditorium. On November 26 an afternoon production of "Aladdin and His Wonderful Lamp" was presented for the children and in the evening the play "Years Ago" was presented. All of these productions were under the sponsorship of the Richland Players, Inc. and performed before a near capacity house.

On November 23, 1949 three permits were issued for the use of government owned land as pasture. These are the first pasture land assignments since the regulations were established that all pastures must be outside the city limits.

On November 29 the Town Planning Board and the Atomic Energy Commission approved the site for the relocation of the Masonic Temple. It is to be located on Thayer Drive 500 feet south of the Carmichael Junior High School southern boundary. The north boundary of the Temple will be adjacent to the site assigned to the Redeemer Lutheran Church for their new church and school building.

CHURCHES

Dr. E. Stanley Jones held a five day mission in Richland November 20 through the 25th. His visit was under the auspices of the Federal Council of Churches' United Evangelistic Crusade. Dr. Jones spoke each evening in the Central United Protestant Church and presented several programs over local radio stations.

A study was made of the sites requested by the Free Methodist Church and it was recommended that the site on the southwest corner of Symons and Wright extended was the most suitable. This site was approved by the Town Planning Board on Tuesday November 23, and presented to the Atomic Energy Commission for approval.

The Nazarene Church, on the corner of Wright and Humphries, held their first church service on November 30. This Church was constructed entirely from volunteer labor by church members. Work was started on the building April 12, 1949 and is approximately 98% complete.

The following is a list of sites allotted or assigned to Church organizations for the construction of their church buildings:

<u>Church</u>	<u>Master Plan Site</u>	<u>A.E.C. Approval Date</u>
Richland Lutheran Church	Site #1, Stevens & Van Gieson	
United Protestant, Central	Site #2, 1200 Stevens Drive	
Catholic Church	Site #3, 1115 Stevens Drive	
Assembly of God	Site #4, Stevens Drive	April 8, 1949
Latter Day Saints Reorganized	Site #5, Swift and Long	Sept. 22, 1948
Latter Day Saints	Site #6, Goethals & Jadrin	Sept. 22, 1948
OUT	Site #7,	
OUT	Site #8,	
United Protestant, Southside	Site #9, Gillespie & Goethals	Sept. 23, 1948
Redeemer Lutheran	Site #10, Thayer Drive	April 15, 1949
Church of Christ	Site #11, Swift & Thayer	Sept. 22, 1948

Community - Activities Division

<u>Church</u>	<u>Master Plan Site</u>	<u>A.E.C. Approval Date</u>
Unassigned	Site #12, Swift between Thayer & Sanford	
United Protestant, Northwest	Site #13, Sacramento Blvd.	Oct. 31, 1949
First Baptist (Regular)	Site #14, Richmond & Raleigh	Feb. 4, 1949
United Protestant, Westside	Site #15, Lee & Wright	May 26, 1949
Nazarene Church	Site #16, Wright & Humphries	April 29, 1949
Cemetary	Site #17, Williams Blvd.	
Unassigned	Site #18, Wright (proposed) and Thayer	
Unassigned	Site #19, McMurray Rd. and Thayer Drive	
Unassigned	Site #20, McMurray Rd. and Stevens Drive	
Richland Baptist	Site #21, George Wash. Way and Howell Ave.	Nov. 17, 1948
Unassigned	Site #22	
Unassigned	Site #23	

Other Sites

Christian Science	Williams & Gutherie (proposed)	Aug. 11, 1949
Episcopal Church	Symons and Sanford	Feb. 24, 1949
Free Methodist	Wright & Symons (proposed)	

The following is a list of church organizations constructing their own church buildings:

<u>Church</u>	<u>Date Started</u>	<u>Estimated % Completed</u>	<u>Occupation Date</u>
Nazarene Church	April 12, 1949	98%	11/30/49
Latter Day Saints	February 5, 1949	55%	
Latter Day Saints Reorganized	August 22, 1949	10%	
United Protestant, Southside	November 5, 1948	98%	4/10/49
Richland Baptist	November 27, 1948	98%	4/17/49

PARKS AND RECREATION

Recreation

The Parks and Recreation Division Supervisor and Recreation Co-ordinator attended the annual meeting of the Washington State Recreation Society at Yakima, Washington on November 2, 1949. Major accomplishments of the meeting were the election of new officers and the assignment of committees to carry out the objectives of the Society. Mr. R. E. Anderson, Community-Activities Division Recreation Co-ordinator, was elected to the office of Vice-President for the Eastern Washington Area.

Community - Activities Division

Upon the request of the Women's Basketball League, the Recreation Section, of the Community-Activities Division aided the League in revising their present constitution and schedules. Assistance is also being given in obtaining sponsors and coaches and the forming of teams.

Representatives of the Tri-City Archery Association and Community-Activities Division, Recreation Section, met to determine a site for a large archery meet. The meet is scheduled to be held on December 3, 1949 at 6:00 p.m. Arrangements were also made to allow the Archery Association to use the Bomber Bowl one night per week for practice. The Association has laid out a multi-target range west of the By-pass Highway. The area is between the approximate lines of Pullen on the south and Salem Street on the north. Village Safety Division and Community-Activities Division have approved the layout of this range. The necessary postings will be done by the Association.

a playable schedule has been arranged for the sixteen teams now playing in the Richland Volleyball League. Carmichael, Marcus Whitman and Sacajawea gymnasiums are used every Thursday evening for this League.

An increase in attendance was shown during the month of November at the physical recreation program held in Spalding Grade School every Tuesday and Thursday evening. These programs were initiated last month by the Recreation Section of the Community-Activities Division. The attendance figures for the month of November excluding November 24, Thanksgiving Day:

Mens Sport Night	47
Co-Rec Night	86 (53 men, 33 women)
Women's Sport Night	20
Weight Lifting	286 (165 teen-age boys, 121 adults)
Fencing	35 (24 men, 11 women)
TOTAL	474

Purchase orders were placed for needed equipment for the various recreation activities and arrangements were made for the printing of the "Guide to Richland."

Park Development

A complete summary of all Ground Improvement Programs for the years of 1950 and 1951 were prepared for presentation to the A & B Committee. The layout sketch for Marcus Whitman Playground was completed and several of the other playground sketches are being prepared. These plans will be used in the above program.

Community Services

The Recreation Section of the Community-Activities Division assisted the Kennel Club in making arrangements for the Annual Dog Show to be held in Richland on April 29, 1950. A day show is tentatively planned for the Bomber Bowl with final judging and presentation of awards being made in the Columbia High School boys gymnasium.

The newly organized Post-High Groups held two mixers in the Community House (Recreation Hall) during the month of November. Over 225 attended these affairs.

Community - Activities Division

The Community-Activities Division Recreation Section, and the Richland Youth Council are making preparations to sponsor a "Tree Lighting Service." All youth groups will be represented in the program.

Santa Claus arrived in Richland on November 27 by helicopter. Arrangements for his platform and the roping in of the area for the plane to land were made by the Recreation Section of the Community-Activities Division. They worked in conjunction with the Santa Claus committee of the Chamber of Commerce. Lights were also furnished to the School Nursery, Goethals and Lee, for Christmas decorations.

The Community-Activities Division assisted the Employee Relations Division in obtaining information on the recreation facilities in Richland for an article in "Adventures Ahead."

MAJOR ACTIVITIES FOR THE MONTH

November	1	Parent-Teachers Association District Conference	Richland Schools
	4	Community Concert - Alec Templaton	Carmichael
	6	V.F.W. District #17 Meeting	Am. Legion Bldg.
	8	Toastmistress Women of the Year Award	Desert Inn
	11	Armistice Day Service	Village Green
	11	American Legion Dance Benefit for "March of Dimes"	Legion Bldg.
	17, 18 & 19	Richland Players, Inc. present "Tovarich"	Carmichael
	20	Junior High Concert	Carmichael
	20	Turkey Shoot	Sacajawea Rifle & Pistol
	20 - 25	Dr. Earl Stanley Jones	Central U. P. Church
	25	"Taming of the Shrew"	Carmichael
	26	"Aladdin & His Wonderful Lamp"	Carmichael
	26	"Years Ago"	Carmichael
	27	"Santa Claus" Arrival	Village Green

The following is a tabulation of full-time paid church personnel, as of November 30, 1949:

	<u>Ministers</u>	<u>Staff</u>	<u>Total</u>
Assembly of God	1	0	1
Catholic	2	2	4
Central 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
Mission Baptist	1	0	1
No. Synod Lutheran (Redeemer)	1	1	2
National Lutheran	1	2	3
Nazarene	1	0	1

Community - Activities Division

	<u>Ministers</u>	<u>Staff</u>	<u>Total</u>
Regular Baptist	1	0	1
United Protestant - North Richland	1	0	1
United Protestant - West Side	1	0	1
United Protestant - South Side	1	0	1
United Protestant - Northwest	1	0	1
Foursquare Gospel	1	0	1
	<u>19</u>	<u>7</u>	<u>26</u>

GENERAL ELECTRIC COMPANY
HARTFORD WORKS
COMMUNITY ACCOUNTING DIVISION

MONTHLY REPORT FOR NOVEMBER, 1949

ORGANIZATION

Employees-Beginning of Month	27	Exempt	5	Male	9
Transfers In	1	Non-Exempt	23	Female	19
New Hire	1	Total	28	Total	28
Transfers Out	1				
Total - End of Month	<u>28</u>				

The Steno-Typist in Community Cost was transferred to the Public Works Division and was replaced by a new employee. An employee from the Services Division was transferred to fill an open requisition for employment in Community Cost.

Several other transfers within the Community Accounting Division were affected in an attempt to further improve the over-all operation.

There are two Steno-Typists who are on loan to other Divisions and will be transferred as soon as a permanent opening is found, which reduces our active working force to 26 people.

ACCOUNTS RECEIVABLE

Rents

	<u>November</u>	<u>October</u>
<u>House Leases Processed</u>		
New Leases	109	146
Modifications	20	14
Cancellations	95	140
Total Active House Leases	5,709	5,695
<u>Dormitory</u>		
New Assignments	99	155
Removals	125	168
Total Occupancy	922	948
<u>Rental Revenue was as follows:</u>		
Equipment	47.26	26.35
*Houses	255,350.96	254,482.82
*Dormitories	13,196.51	13,072.49
*Facilities	41,285.59	38,158.27
	<u>\$309,876.32</u>	<u>\$305,749.93</u>
Unoccupied Dormitory Revenue		
Loss	2,600.99	2,725.01
Unoccupied House Revenue Loss	3,721.54	4,589.68
Total Potential Revenue	<u>\$315,200.85</u>	<u>\$315,064.62</u>

Community Accounting Division

*Includes utilities (steam-water-electricity) which are collected as a part of the rental.

There are eight facility operators still retaining equipment on a rental basis.

Telephone

	<u>November</u>	<u>October</u>
Number of work orders processed	252	176
Number of working phones	2,767	2,655
Revenue, including services	\$5,539.90	\$5,362.16

*This figure, computed in advance the first part of November, was used as October revenue in error on last month's report.

Miscellaneous

	<u>November</u>	<u>October</u>
Invoices issued	256	262
Miscellaneous revenue	\$1,026.11	\$2,475.65

The following Building Permits were issued in November:

<u>Lessee</u>	<u>Amount</u>
Cannon and Joseph	\$ 179.30
Diettricks Market	179.55
Total November Revenue	358.85
Previously Reported	4,330.66
Total to date	\$4,689.51

There was no Government-owned equipment sold to facilities or organizations in November. Total sold to date amounts to \$105,089.97.

General

Forty-eight collection letters written during the month resulted in collecting thirty-one accounts amounting to \$952.81.

There were five "bad" accounts written off during November totaling a small credit of \$1.53.

There is an open facility contract with Richland Plumbing and Heating Company, although they are not operating in Richland at this time, we still accrue under the minimum rental clause \$50 per month. This item now amounts to \$400 but no collection action has been taken since some adjustment will no doubt be made and the contract cancelled after the legal implications are removed.

General Electric employees were advised by letter that effective February 1, 1950, they would be able to pay their house and telephone rental charges in cash if they so desired by signing an enclosed cancellation of their payroll deduction authorization. Although not many are expected to resort to cash payments, it was the desire of General Electric to give their employees the opportunity to pay telephone and house rental in cash as they would normally do in a town under private ownership.

Community Accounting Division

ACCOUNTS PAYABLE

<u>Statistics</u>	<u>November</u>	<u>October</u>
Accounts Payable Vouchers Processed	253	251
Freight Bills Processed	13	10
Purchase Orders Received	65	45
Net Amount of Purchase Orders	\$7,242	\$4,071
Receiving Reports Received	74	61
Total Net Amount disbursed	\$51,171	\$34,371

The volume of work remains approximately the same although the number and amount of purchase orders shows an increase during the month which will likewise increase the payable vouchers processed during the coming month.

All outstanding items in the Accounts Payable balance of \$113 cr are current.

A summary of the active Community subcontracts is shown below:

<u>Subcontractor</u>	<u>Sub-contract Number</u>	<u>Amount Awarded</u>	<u>Paid This Month</u>	<u>Total Paid</u>	<u>Amount Retained</u>
Frederickson, Dr. J. L.	-----	* 1,001.50	144.00	1,001.50	--0--
Newland Cafeteria	-----	* 5.58	--0--	5.58	--0--
Richland Maintenance Co.	-----	*50,099.32	7,284.36	50,099.32	--0--
West Coast Painters Co.	G-219	58,526.79	17,403.97	43,974.85	2,926.34
Graysport Construction	G-231	45,640.58	1,104.12	45,640.58	--0--
Abrams Aerial Survey Corp.	G-268	14,208.41	--0--	--0--	--0--

Community Accounting Division

Budget

The Mid-year Budget Review, for both the Construction and Operating Budget was completed and issued for preliminary study on November 18, 1949.

As soon as the A & B Committee have reviewed the budget as revised in mid-year, it will be prepared in final form for issuance to the Atomic Energy Commission.

Work Orders

A summary of service order statistics for the last two months is listed for information:

<u>Craft</u>	<u>Service Orders</u>		<u>Total Amount</u>	
	<u>Oct.</u>	<u>Nov.</u>	<u>October</u>	<u>November</u>
1. Plumbing	580	793	\$1,378.20	\$ 1,947.58
2. Electrical	1,604	2,224	3,549.48	5,288.59
3. Heating & Vent.	596	816	1,595.81	2,042.81
4. Glazing	91	58	407.59	266.92
5. Lock & Key	196	253	661.50	879.28
6. Carpentry	216	371	871.21	1,099.13
9. Sheet Metal	25	6	176.30	42.67
	<u>3,308</u>	<u>4,521</u>	<u>\$8,640.09</u>	<u>\$11,566.98</u>

A revised work order procedure is in preparation and should be in final form for issuance in December.

Statistics covering regular work orders:

	<u>October</u>	<u>November</u>	<u>Net Change</u>
Active Routine	483	473	-10
Active Normal	1,500	1,107	-393
	<u>1,983</u>	<u>1,580</u>	<u>-403</u>
Work Orders Received	1,081	826	
Work Orders Completed	<u>312</u>	<u>1,229</u>	
	769	-403	

GENERAL LEDGER

The October trial balance and supporting financial statements were forwarded to the General Division for consolidation on November 17, 1949.

Statistics

	<u>No.</u>	<u>Amount</u>	
		<u>Dr.</u>	<u>Cr.</u>
Second Class Invoices Received	65	\$329,293	\$246,948
Second Class Invoices Issued	41	\$228,228	\$ 25,489

Design and Construction Divisions

November, 1949

DECLASSIFIED

ORGANIZATION AND PERSONNEL

Effective November 1, 1949, the Design and Construction Divisions were organized into three Line Divisions--Separations, Reactor, Power and Mechanical--and four Staff Divisions--Construction Services Division, Contract Division, Accounting Division, and the Administrative Section.

The Separations Division is responsible for assigned projects in the field of chemical separations and mechanical design and development of process equipment, construction design and engineering, and project management.

The Reactor Division is responsible for assigned projects in the field of nuclear reactors for mechanical design and development of reactors and related special process equipment, construction design and engineering, and project management.

The Power and Mechanical Division is responsible for project management and engineering on assigned projects in the non-process field and for the provision of contributory functions and services to the Separations and Reactor Divisions, including drafting and blueprinting, planning and estimating, and engineering services in the field of architecture and civil, mechanical, and electrical engineering.

The Construction Services Division, in general, is responsible for the furnishing of certain services to construction contractors and the management of construction plant and equipment which is made available for the common use of construction contractors.

An assistant to the Manager has been appointed for special assignments in matters dealing with the construction program.

During the past month, efforts of the Design and Construction Divisions have been concentrated on the administrative preparations necessary for the new construction program. Procedures outlining the method of operation in carrying out the new program are being prepared and issued as rapidly as possible prior to the start of construction.

Total Number of Employees on Payroll

	<u>Beginning of Month</u>	<u>End of Month</u>	<u>Net Increase or Decrease</u>
D & C Divisions	525	518	-7
On Loan to D & C	<u>18</u>	<u>11</u>	<u>-7</u>
	543	529	-14

DECLASSIFIED

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 inventions or discoveries.

<u>INVENTOR</u>	<u>TITLE</u>
None	None

REACTOR DIVISION (D & C)

I SUMMARY

Principle activity in the Reactor Division was centered upon Project C-300, "Design of Pile Area G." Authorization of funds led to significant progress in test planning and procurement.

A work order extension of \$25,609 was necessary for completion of 105-H and associated buildings.

A project proposal covering disposition of "FR" and "G" procurement was prepared and is being routed for approvals.

II ORGANIZATION AND PERSONNEL

The Reactor Division, Design and Construction Divisions, was organized on November 1, 1949. A re-grouping of the Design and Development Section was effected on November 28 to provide group leaders for: (a) Control and Analysis - A. T. Strand; (b) Structural Design - R. T. Jaske; and (c) Mechanical Design - R. R. Wall.

J. R. Wolcott left the Division on November 14, 1949, to become Administrative Assistant, Design and Construction Divisions.

Mrs. Carol Sege, chemist, was received from the Technical Divisions on November 7, 1949.

Number of employees on payroll:

Beginning of month	45
End of month	<u>45</u>
Net change	0

DECLASSIFIED

HW-15267

V. D. Nixon was loaned to the Knolls Atomic Power Laboratory, effective November 14, 1949.

R. J. Schier visited the following sites in connection with the metallurgical program:

November 7 and 8 - Battelle Memorial Institute

November 9 - Aluminum Company of America

November 21 - Atomic Energy Commission, New York - for Beryllium Conference

III SECTIONAL ACTIVITIES

File Area "H" - Project C-165-A

File Area "H" (Project C-165-A) is being completed by plant forces. Work Order No. H-46072, covering Building 105-H and related buildings, was increased by \$25,609 to cover the Manufacturing Divisions' request. The increase was principally due to pressure panel and water supply difficulties which were not evident until the flow tests were complete.

Giffels and Vallet, Inc., is to complete the "as-built" drawings the first week in December.

General Electric "as-built" drawings are to be complete prior to January 1, 1950.

Design and Development File Area "G" - Project C-300

Controls:

Attempted procurement of a one-piece stainless steel rod indicates only two sources. The Crucible Steel Company and Columbia Steel Corporation can roll, but not fabricate, to the required dimensional tolerances. A fabricator is being sought.

A friction roller drive and hydraulic decelerator for the sheet rod is through preliminary design layout. Comment from possible vendors is to be sought.

Design of the test set-up arrangement for the Ball 3-X hopper mechanism is 85 per cent complete.

The composition of, and a source for, the control balls is yet to be established.

Shields:

Two alternate form designs have been prepared for the front and rear poured shields. A choice is to be made between welded, brazed, or bolted fabrication before design of test pours. Top shield preliminary design is approximately 50 per cent complete.

Metal Handling:

A simplified redesign of the discharging machine slug ejector was started and is 80 per cent complete.

A test component is to be fabricated upon release of the drawings.

Tests:

The following progress was made by the Test Section:

TEST NUMBER	TEST TITLE	PLANS & PROCUREMENT Per Cent Complete		TEST RUN Per Cent Complete		RESULTS
		Last Mo.	This Mo.	Last Mo.	This Mo.	
#3	Rubber Irradiation	90	92	25	27	
#5	Two-phase Flow		100		100	Report written
#8	Radial Creep of Aluminum Tubes	85	90	15	20	Diametrical Creep 0.0001"/Mo. @ 600 p.s.i.
#11	Drop Test of Sheet Rods	80	80	10	25	Satis. down to 0.010" total. Clearance in a straight channel.
#13	Slug Ejector-counter & Nozzle Seal	20	35		None	
#14	Vernatherm Functional Test	5	15		None	
#17	Short-length Heat Transfer	15	40		None	
#18	Full-scale Heat Transfer	15	40		None	
#19	Graphite Key Tests	15	40		None	
#21	Ball 3-X System	10	20		None	

Tests (continued)

Total Tests Authorized to Date	17
Tests Completed	6
Tests Showing No Progress This Month	1

The principle progress in test runs occurred in the Sheet Rod Tests (No. 11). Following unfavorable tests in November with 0.025" clearance, the step plug plates were dressed and finished with a hard chrome surface and the Sheet Rod was straightened. Normal operation was then obtained down to 0.010" total clearance. At 0.055" some scuffing of the Sheet Rod was encountered.

SEPARATIONS DIVISION (D & C)

I DESIGN

Redox:

Kellex report for design of the main Production Plant Building, Stack and Mock Up for the month of November has not been received. Estimated per cent complete is 14 per cent.

The entire Redox Mechanical Development Program has been reviewed with Kellex and it has been agreed that all necessary work is underway.

Redox auxiliary facilities being designed by General Electric are approximately 10 per cent complete. The pump house and basin are no longer required. The exact scope of work for the chemical bulk storage and solution make-up and the laboratory waste system is not firm.

Redox utilities scope work is 70 per cent complete and construction drawings are 20 per cent complete.

Connector development programs with Crane and Pyle-National are in the contract arrangement stage.

Redox Waste Facilities:

Drawings are completed and approved and specifications have been completed and transmitted to the AEC for approval. Invitations to bid on construction are being prepared in advance of final approval. Estimated completion is 98 per cent.

[REDACTED]

DECLASSIFIEDRedox Analytical and Plant Assistance Laboratory:

Design is reported by the Architect-Engineer subcontractor at 68.01 per cent complete. Scheduled per cent for December 1, 1949 is 84 per cent.

Outline drawings and specifications are being revised by the Architect-Engineer and are expected to be submitted to General Electric Company about December 12, 1949.

Recent conferences have resulted in a firm basis for building design as agreed by the Architect-Engineer, Contact Engineer, and Project Engineer. The only immediate design problems presently anticipated deal with the special items of laboratory equipment and utilities.

Conversion of UNH to UO₃

Requirements for further processing of UNH are not known at this time.

Metal Recovery:

Review committee composed of representatives of Manufacturing, Technical, and Separations Division of Design and Construction Divisions is assembling information to be used for recommendation on type of process.

234-5 Project

Phase I (Portion after July 31, 1949) (December 4, 1949) 64.4 per cent Scheduled 95.5 per cent

Phase II (December 4, 1949) 91.4 per cent Scheduled 76.7 per cent

Phase III (December 4, 1949) 22.4 per cent Scheduled 44.6 per cent

R. M. Line (November 25, 1949) 89.9 per cent Scheduled 93.1 per cent

A letter authorizing Schenectady to relax schedules where such relaxation would affect economies was issued after the November 3, 1949 Separations Committee meeting.

The 45 design changes for the R. M. Line were reviewed and classified into four categories. Class 1 consisted of items that are now necessary to make the line operable, and these were divided into 2 groups, the items that require immediate action and items that can be delayed. Class 2 consisted of items necessary for efficient operation of the line, and was subdivided into 2 groups, the items that would cost less if done now and the items that do not affect the present design. The purpose of these classifications was to formulate a plan for

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234-5 Project (continued)

accomplishing the maximum number of changes for the maximum benefit to the line within the funds available. Fifteen items were included in the Class 1, Group 1, category. Estimates on all of these necessary changes are scheduled to be completed and in Mr. Neblett's office by December 9, 1949.

Studies are underway on a procedure covering the division of responsibility for Phase III work between Schenectady and Richland.

A reference drawing list is being prepared in Schenectady and will be available in the near future to be used as an index for 432 drawings.

Additional information is necessary from Schenectady in order to complete the R. M. Line installation estimate. On the basis of all information presently available it appears that the Richland budget contains sufficient funds to carry out the entire program to completion, incorporating all the suggested changes.

Work is progressing on the design of Phase II and Phase III work, but the actual issue for construction of all units is to be delayed temporarily except for the following: Phase II - Temporary Construction, Analytical Laboratory Rooms 146 and 147, Alteration to Coal Conveyor in 284-W, Completion of Corridors; Phase III - R. M. Line Equipment, R. M. Line Installation, and Completion of Room 161.

During the month of November, 84 "As Built" drawings were issued, and six work orders covering additional items for Phase I.

Rala:

Funds for clean-up of "T" head and critical procurement required for early construction have not been approved.

A quotation on the design and development of an electrolytic cell for the Rala process on an Assistance to Hanford basis has been received from GE and CL and is being studied.

Plant test work is under way on the small dissolver and on the underground piping from the "T" head end to the Main "T" Plant. These studies will assist in making a choice between alternates shown on engineers flow sketches and layout studies now in preparation on installation of the dissolution, I₂ removal, extraction and metathesis equipment in the canyon.

Agreement has been reached on the process requirements in the purification steps, establishing a basis for flow sketch and layout studies.

Study issues of process flow and material balance diagrams have been issued and essential agreement on them has been reached.

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III PERSONNEL

Total personnel for the Separations Division at the end of November is 65. Three additional personnel, two engineers and one file clerk, were added during the month of November. Two additional engineers have been requisitioned for the Rala Project but have not been obtained and one that reported during the month of November does not have proper clearance. A complete Separations Division organization chart is in preparation and will be issued about December 12, 1949.

POWER AND MECHANICAL DIVISION (D & C)

DR Water Plant, Project C-342:

Arrangement drawings and a discussion on design basis were presented by Chas. T. Main, Inc., in report No. 91-14-4 dated November 10, 1949. This report was approved in general by General Electric and the AEC except for five specific items which are still being studied.

As of November 15, 1949, Chas. T. Main, Inc., had completed 16 per cent of their total design work.

Design of Records Depository:

Final plans were promised by the Architect-Engineer to be in Richland on approximately November 10, 1949. In response to our teletypes, we were advised that final plans and specifications would be mailed from New York on November 30, 1949. Eight sheets in incomplete form, together with partial specifications, were received in Richland on November 30. Estimating was started on the basis of these plans. The project proposal has been prepared in preliminary form and will be submitted early in December upon receipt of final estimate.

Enlarging 251 Substation, Project C-295:

Final inspection of the substation building for work assigned to Atkinson-Jones Company was made on November 4. Work orders have been issued to the Electrical Division for work incomplete because of delays in material delivery. The 18,750 KVA, 230 KV power transformer has arrived and will be assembled during the month of December.

CONSTRUCTION SERVICES DIVISION (D & C)

I SUMMARY

Effective November 1, 1949, J. W. Marcke was appointed Manager of the Construction Services Division of the Design and Construction Divisions. The Construction Services Division has been organized functionally as follows:

Summary (continued)

Service Section - consisting of the following sub-sections:

- North Richland Realty (Construction Camp Operation)
- Security Section
- Office Services Section

Labor Relations Section

Construction Equipment Control Section

Safety and Fire Prevention Section

Inspection Section

The responsibilities of the Construction Services Division include the operation of the North Richland construction camp, security administration pertaining to subcontractors' employees, the administration of labor relations policies of the Atomic Energy Commission and General Electric with respect to subcontractors' activities, major construction equipment and shop equipment control, and similar other services incidental to the field construction program.

Reorganization within the division consistent with the assigned responsibilities has progressed during the month, as well as administrative preparations for the new construction program.

II STATISTICAL AND GENERAL

North Richland Construction Camp:

	<u>Beginning of Month</u>	<u>End of Month</u>	<u>Net Change</u>
- Camp Population	2313	2245	-68
(Barracks 192)			
(Trailers 1442)			
(Houses 611)			

Barracks in Use

- 7 wings, One-story Male Barracks
- 1 wing, One-story Female Barracks

Trailer Lots

Occupied -- 517

North Richland Construction Camp (continued)

Houses

Of the 201 houses available in North Richland camp, 23 were vacant at the end of the month. Eighteen were assigned during the month and 18 vacated.

Maintenance

The construction contractor's maintenance force at the end of the month totaled 47 employees.

Work Order Control:

Brought forward from October	23
Issued during November	68
Completed during November	63
Voided during November	3
Balance on hand November 30	25

Steam Generating Plant

The following is a resume' of the operations of the steam generating plant during November:

Steam generated, M pounds	23,697
Oil consumed, gallons	13,994
Coal consumed, tons	1,607.65
Boiler efficiency, average per cent	74.35%
Estimated cost per M pounds - based on last known cost of fuel	\$.996

Commercial Facilities

Considerable progress has been made in the re-negotiation of facility operators' contracts. The rental bases of such contracts are being re-negotiated in order to reduce operators' rental to a more equitable basis during the present period of low activity.

Month reports of the 17 facility operators presently active in North Richland indicate the trend of business is still downward and below the previous month.

Office Services

On November 23, office services functions in the 760 and 761 Buildings were consolidated under the Construction Services Division with such services being performed for the 3000 Area. The personnel of the 760 and 761 Buildings, consisting of 8 non-exempt employees, will be officially

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Office Services (continued)

transferred to the Construction Services Division at the time the new cost code system is placed into effect.

Services performed during the month:

Ditto Masters Processed	1,162	Copies, 29,126
Stencils Processed	704	Copies, 59,382
Mail Handled (pieces)	85,475	
Mail Registered (pieces)	15	
Teletypes Sent and Received	66	
Orders Issued for Stationery	76	
Stationery Issued (requests)	1,097	
Phone Installations Requested	5	
Phone Transfers Requested	28	
Office Furniture Moved (pieces)	183	
P.I.T. Processed	7	
Special Messenger Runs	44	
Office Machines Repaired	18	
Service Calls (Misc.)	630	
Work Orders Issued	6	
Requisitions Approved (Construction Contractor)	9	

A physical inventory of office furniture and equipment was started on November 28.

Security Administration

A summary of activities is as follows:

Visitor Passes Issued	117
Badge Number Changes	110
Lost Badges	11
New Hires (Contractor)	138
Terminations (Contractor)	548
Total Number of Contractor and Facility Operator Employees	1,769
"FP" Clearances Requested	3
"Q" Clearances Requested	1
"F Approval" Clearances Requested	78
Visitor Clearances Requested	31
Total Clearances Requested for Month	113
Total Clearances Received for Month	48

Major Construction Equipment

1. Physical inventory of major construction equipment assigned to Atkinson-Jones and Design and Construction Divisions completed.

Major Construction Equipment (continued)

2. Arrangements completed for physical inventory to be made of shop equipment.
3. Equipment assignment as of November 30:

Atkinson-Jones	281 pieces
Design and Construction Divisions	117 pieces
4. A major construction equipment list was received from Atkinson-Jones specifying their requirements through the month of June, 1950, for the construction of 100-DR Water Plant. The list was approved by the General Electric line division manager concerned.

Safety Report

<u>Construction Injuries</u>	<u>C.P.F.F. Contractors</u>	<u>Lump Sum Subcontractors</u>
Major Injuries	0	1
Sub-major Injuries	1	0
Minor Injuries	13	5
<u>Fires</u>	0	0
<u>Motor Vehicle Accidents</u>	1	1

III ORGANIZATION AND PERSONNEL

Beginning of the month	143 Employees
End of the month	90 Employees
Net decrease	53 Employees

The large reduction of personnel during the period is due to the reorganization within the Design and Construction Divisions. Certain functions of the Construction Services Division, formerly the Construction Division, were transferred to other Design and Construction Divisions, with the resultant transfer of personnel.

PROJECT & RELATED PERSONNEL
NOVEMBER - 1949

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	<u>10-31-49</u>	<u>11-30-49</u>
<u>GOVERNMENT EMPLOYEES</u>		
Civilian Personnel - Atomic Energy Commission	338	339
Civilian Personnel - G. A. O.	8	8
Total	346	347
<u>RICHLAND VILLAGE PERSONNEL</u>		
Commercial Facilities (Includes No. Richland)	988	1031
Organizations, Clubs, Etc.,	74	74
Schools	378	378
Churches	25	26
Total	1465	1509
<u>CONSTRUCTION SUB-CONTRACTORS</u>		
Atkinson & Jones	539	524
Newberry Neon	79	55
Urban, Smyth; Warren Co.,	53	9
Kellex Corp.,	337	332
Giffels & Vallet, Inc.,	19	5
Morrision - Knudsen Co.,	1	-
National Carbon Co.,	37	-
J. A. Terteling & Son	219	179
Troxell	9	9
Howard P. Foley	20	5
Charles T. Main. Inc.,	27	93
No. Electric Mfg. Co.,	6	6
Great Lakes Carbon	134	137
Graham, Anderson, Probst & White Inc., &		
J. Gordon Turnbull	36	33
McCorkle Const. Co.,	53	50
Dayley Bros.	13	12
Edmund P. Erwer	12	-
Best	4	-
Bailey Plumbing & Heating	10	-
Vail	3	-
J. P. Head	10	3
Selden's	3	-
H. P. Fisher & Sons.	-	2
Charles Barnes	7	-
Curtis Sand & Gravel	-	7
Total	1643	1461
<u>GENERAL ELECTRIC PERSONNEL</u>		
	<u>7512</u>	<u>7429</u>
Grand Total	10966	10746