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- # 1 - H. A. Minne
- # 2 - Zay Jeffries, Pittsfield
- # 3 - C. G. Suits, Schenectady
- # 4 - G. R. Prout
- # 5 - J. R. Rue
- # 6 - C. N. Gross
- # 7 - A. B. Greninger
- # 8 - F. R. Creedon
- # 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
- # 14 - Hanford Operations Office
Attention: R. W. Richardson, Historian
- # 15 - 700 File
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November 18, 1949

HANFORD WORKS
MONTHLY REPORT

OCTOBER 1949

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Date: 5-2-83

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GENERAL SUMMARY

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Manufacturing Divisions

A total of 60 tons of metal was discharged from B, D, and F piles at an average concentration of 388 MW/ton. The operating efficiency was 91.2 percent, and the operating levels remained at 275 MW at B and F piles and 305 MW at D pile.

The H Area was accepted from Construction on October 14, and the pile started initial operation on October 20. The operating level of the H pile was 100 MW at month end.

A total of 67 tons of acceptable slugs was canned at a yield of 88.5 percent. The machining yield was 73.1 percent, and the melt plant produced 22 tons at a yield of 73.1 percent.

Sixty-seven batches were started in the Canyon Buildings, with 53 batches being processed through the Concentration Buildings and 60 through the Isolation Building. The average purity of completed batches from Isolation was 98.5 percent.

The Electrical Division has assumed the full operating responsibility for the telephone system, which was transferred during the month from the Plant Security and Services Division.

The peak load for the entire electrical system reached an all time high on October 26, 1949 of 71,400 KW. This was brought about largely by the start up of 100-H Area. Higher power levels at 100-H Area will not increase the electrical demand.

The transfer of the Minor Construction forces from the Mechanical Divisions to the Project Engineering Divisions was effected during the month. The total number of exempt and non-exempt personnel transferred was 239.

Technical Divisions

Technical tests relative to H Pile start-up were completed during the month. These tests included "flashing" of the dry pile and experimental operation at 100 MW. The flashing tests demonstrated that an increase in graphite temperature results in a decrease in pile reactivity if the pile has lost cooling water. This observation reduces the requirements of the safety control system and eliminates the need for cadmium plated splines to supplement the vertical rod system in the present piles.

The carbon dioxide in the D Pile atmosphere was increased to 43% on October 31 as the first step in a planned increase to 50%. The elevation of the top of the B Pile has decreased about 0.05 inches during eleven weeks of operation with 60% carbon dioxide.

For the first time, a core sample was mined from a process tube block. The sample was adjacent to Tube 2282-D and had an accumulated exposure of 3300 iD/CT. X-Ray studies indicate that the graphite at the bore has expanded more than twice as much as the graphite at the outer surface of the block.

General Summary

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Lines 3 and 4 of the P-10 Project were both in operation during the month with an average operating efficiency of . Slugs with 8 months exposure were extracted without difficulty.

AEC approvals of the exponential pile project and Part II of the critical mass project were received during the month.

Major emphasis has continued to be placed on improving Separations Plants material balance accountability. A recent Acid Wash Run at B Plant accumulated 52% of an average run through the Canyon Building and corrective measures are being applied to minimize a recurrence. The 221-T Plant has been converted to semi-parallel operation with no operating or process difficulties encountered. Plant assistance studies have helped recover an off-standard Purification batch of product in the 234-5 Building. The largest single obstacle remaining in the path of attaining successful and continuous operation in the 234-5 Building has been the coating operation, to which concentrated improvement studies are being applied.

In Redox development, twenty-six additional column runs were completed during the month involving studies of a 5-inch pulse column, uranium stand-in behavior for plutonium and fission products, and raw vs. pretreated hexone. A trial run of the tentative flow sheet for Redox feed preparation from simulated metal waste was carried out in the newly completed "cold" pilot line. The G. E. and C. L. Submerged Pump No. 2 has successfully passed four months of continuous operation in aluminum nitrate solution and several other pumps are progressing through shorter testing. Concrete blocks flame-sprayed with polyethylene have thus far shown high-resistance promise on corrosion tests now in progress.

In the research laboratory, trial runs on the simulated recycling of meta-thesis caustic in the preparation of Redox feeds from metal waste have given phosphate purifications identical with no recycling. A satisfactory point of return for recycled uranyl phosphate has also been developed. Scouting studies of product behavior and stability in the Tributyl Phosphate System have been continued. A method has been developed for reducing chromium interference in proposed plutonium rework methods. A number of alternate catalysts and operating conditions for ruthenium volatilization has been investigated. Continued studies of Redox 234-5 coupling methods have indicated potential plutonium losses as low as 0.1% in the phenylarsonate method.

In the 234-5 process development laboratory, study of the preparation of sulfate-free peroxide has been extended to include the effects of acid and peroxide concentration as well as washing methods on plutonium peroxide yield. Scouting studies have been initiated on the recovery of plutonium from reduction slag and crucibles.

Stack gas treatment studies have demonstrated the necessity of preventing condensation in the proposed "Fiberglas" dissolver off-gas filter. A series of silver reactor iodine-removal runs has demonstrated at least 99.5% iodine removal efficiency throughout five consecutive dissolvings. New test data are being obtained on the pilot model electrical precipitator. A study of the off-gas flow rates has been initiated at B Plant.

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Experimental equipment for bronze dipping four slugs at a time instead of in pairs was remodified and made ready for extensive trial. The successful use of this equipment will increase the certainty of complete transformation of the uranium structure, and simultaneously allow reductions in net time cycle and temperature of the bronze bath. Metallographic studies indicate insignificant grain growth in doubling immersion time at the present bronze bath temperature of

P-10 alloy production continued, with two significant developments:

(1) Exposure of the bare slugs to atmospheric moisture is being minimized by inserting the freshly machined slugs immediately into previously etched, freshly desiccated process cans which are immediately closed with welding discs; and (2) slug reactivity measurements in the test pile are giving a valuable cross-check on lithium content and disclose inconsistencies in analytical results.

Battelle made good progress on their study of low temperature rolling of uranium, and it is expected that reliable data for use in connection with the 300 Area Rolling Mill Project (C-339) can be furnished the Project Engineering Division in November.

Analytical control personnel in the 100 Areas were moved from 100-D to the new laboratory in 100-H. The improved convenience and facilities of this new laboratory will allow the increased work load attending start-up of the new area to be handled without additional analytical personnel.

Preliminary estimates of the quantities of process material necessary for each of the Rala control analyses were supplied the Design Division for use in determining shielding requirements of the Rala laboratory facilities.

Completion of investigations of the carrier concentration method for the spectrographic determination of impurities in 234-5 Process materials has provided an independent procedure for checking certain results from the cup-ferron-copper spark method. Preliminary evidence indicates that the carrier concentration method is more reliable and thus provides an improved means for the determination of several elements.

A standardized printed cover, binding, and inside format for research and development reports issued by the Technical Divisions was adopted and placed in use. The Information Group also participated in project-wide planning to achieve further standardization and improvement in procedures for dispensing classified and unclassified technical information. Consultations with Kellex were directed toward correlated control over classified document issuance and inventory in all sub-contractor relationships.

Health Instrument Divisions

Net changes in the force resulted in a total increase of 17 people. There were three Special Hazards Incidents reported; none involved significant exposure.

The Operational Division report indicates the need for improved hazard control in the 200 Areas, especially in the 234-5 Building. In the 200 Areas, pocket ion chamber coverage was limited to employees having access to the T, U, and B Exclusion Areas, as an economy measure, consistent with proper

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General Summary

radiation protection.

In the Development Division, atmospheric monitoring and land and vegetation contamination results were at normal levels. The increase in active particle deposition, reported last month, has definitely been attributed to a foreign source.

In biological monitoring, animals collected within a thirty mile radius of the 200 Area stacks showed slight but definite thyroid activity. Other programs in biology proceeded without incident.

Conclusions drawn from the Chalk River conference on permissible exposures will force even more conservatism in radiation management.

Plant Security and Services Divisions

There was one lost-time injury in October making a total of ten for the year to date and a frequency rate of 0.78.

There were 14 industrial area fires with a total loss amounting to approximately \$1,075.

Responsibility for operating the telephone exchange was transferred to the Electrical Division on October 10, 1949, following the cutover from manual to dial operation on October 7, 1949.

Employee and Community Relations Division

Open requisitions decreased from 174 at the beginning of the month to 110 at the end of the month. Total plant personnel decreased during the month from 7,519 to 7,512. Turnover rate, including terminations due to lack of work, during October was 1.54%. Turnover rate, exclusive of terminations due to lack of work, was 0.94%. Twenty-six G. E. employees are participating in shorthand and typing courses given by the local school system's Adult Educational Program. A short preliminary application form was adopted during the month.

T. A. Roche, representative of Metropolitan Life Insurance Company, visited Hanford Works October 11 to 14 and assisted in developing the program for the new G. E. Group Health Insurance Plan. The Community Chest drive for Hanford Works was completed October 29 with 79.6% of the quota reached. Five employees retired during October, three of which were on optional basis. One employee death occurred during the past month. Twenty-seven awards, totaling \$525, were approved by the Suggestion Committee during October.

Distribution of the Supervisor's Handbook on Employee Relations was completed during October with 1,006 handbooks being issued during the course of 36 meetings held with supervisors by the Training and Program Development Group. On October 18 and 19, 42 meetings on the new G. E. Health Insurance Plan were held by the Training and Program Development staff with 702 supervisors in attendance. A survey was made during the past month relative to conditions of conference rooms in the various areas.

The activities of the Labor Relations and Wage Rates Division during October were concerned primarily with the processing of grievances submitted by

1212903

General Summary

bargaining unit personnel and setting up the proper procedure for handling the election of the Guards Union. The International Brotherhood of Teamsters, Chauffeurs, Warehousemen, and Helpers of America had withdrawn their petition for election without prejudice. A special meeting was held with the HAMTC's special committee on Group Health Insurance, the Company representatives and a representative of the Metropolitan Life Insurance Company to review the proposed new Group Health Insurance Plan. Two meetings were held with the Council Grievance Committee. A new distribution of minutes for the meetings was put into effect. Meetings were held with supervision to explain the new rules regarding transfers, etc. Reimbursement authorization approvals were received on Reimbursement Authorizations Nos. 73, 71, 60, and 64.

Community Relations was called upon during the month of October to compile a record of all information released concerning the poliomyelitis cases which had occurred in Richland and to handle the release of information concerning each case as it was reported to us by the Medical Division. This method was adopted as a means of developing to the fullest extent possible the confidence of the people living in Richland that the polio situation was not getting out of hand and that they were being furnished with complete and accurate information as rapidly as possible.

A representative of the New York TIMES visited Richland during the month as a result of efforts by General Electric's West Coast Advertising and Publicity Department representative. Because of the contact with him, established prior to his arrival in town, the way was open to escort him on a complete tour of Richland and to see to it that he had an opportunity to interview those who could give him the factual information he would require in order to prepare a fair analysis of what he was observing in Richland. In addition to the conferences arranged by Community Relations, the New York TIMES representative also interviewed various merchants in the town to determine whether or not there were opinions among them contrary to those expressed by General Electric Company's various representatives. He gave Community Relations an opportunity to present the G.E. - A. E. C. side of any controversial subject which his discussions with merchants had brought out. In this way it was possible to present him with the maximum amount of information, and it was felt that the result of his visit should be a fair analysis of the operation of Hanford Works and Richland.

Another important aspect of Community Relations work during the month of October was the new G. E. Health Insurance Plan. Various steps in the promotion outline required the creative writing talents of Special Programs, the Nucleonics Department News Bureau, and of Hanford Works NEWS personnel.

A total of 45 news stories was released to the "Local List" of newspapers and radio stations served by the Nucleonics Department News Bureau. The "General List" of radio stations and newspapers received a total of 10 releases and photographs together with captions. Special service was given to the TRI-CITY HERALD on a story concerning the recently contemplated lay-off of approximately 50 members of the operation forces of Hanford Works.

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General Summary

Hanford Works was represented by G. E. personnel on five different occasions before public groups during the month. The speakers included the General Manager, the Assistant General Manager, the Head of the Biology Division, and the Community Relations Division Head.

The program designed to assist in acquainting Richland residents with telephone numbers of newly installed phones got under way during the month of October. This program called for publication in each Friday's issue of the WORKS NEWS the list of telephones installed during the previous week. On the last Friday during the month, the WORKS NEWS contained a separate insert which listed, in alphabetical order, all of the names of residents, their addresses, and the numbers assigned to all telephones installed during the month of October.

Continuing the effort of acquainting Hanford Works people with the background of the General Electric Company started here when the Company assumed responsibility for operating Hanford Works, the WORKS NEWS published a story in recognition of the 70th anniversary of the discovery of the electric lamp by Thomas Edison. In the October 21 issue the publication entitled "Edison and Electricity" was inserted for the same purpose.

Purchasing and Stores Divisions

Personnel of the Purchasing and Stores Divisions showed a net increase of fifteen people. The increase has been necessary due to increased work load in the Purchasing Division and also due principally to the accelerated effort of the Stores Division to issue a catalog on all surplus, salvage, and scrap materials as early as possible.

The work load of the Purchasing Division continues to increase as indicated by the fact that we received 2,482 purchase requisitions this month as compared to 2,177 purchase requisitions received during September.

The coal mines west of the Mississippi resumed operations and daily shipments of coal started on October 3, 1949.

Arrangements were made for the Stauffer Chemical Company to produce 50,000 pounds of Aluminum Nitrate in a new pilot plant which will be set up in Tacoma, Washington by this Company. Our needs for this product represent considerably more than has been produced in the United States previously.

As a result of negotiations between the Traffic Section and the carriers, rate reductions were obtained on Nitric and Sulphuric Acids which will result in an annual savings of approximately \$26,900.

Reduction in freight charges for the month of October amount to \$3,221.60.

Stores active inventories were reduced by \$168,006.44. This was accomplished by the disposal of obsolete materials and a continuing review and adjustment of stock levels.

A total of 1,988 purchase requisitions was screened during the month and 1,496 items were furnished from plant stocks, thereby obviating the necessity of off-plant purchases.

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General Summary

Inventories of Subcontractor-held inventories have been completed on several captions and catalogs have been furnished to the individuals responsible for earmarking materials which will be required for new construction.

One-hundred and five representatives of Government agencies and private businesses were escorted through the project for the purpose of inspecting surplus, salvage, and scrap materials.

Community Divisions

The Community Divisions' general offices were moved from the Municipal Building to the 762 Building during the month of October, 1949.

The following Community Division Appropriation Requests were approved during the month:

- 59-A-R, Project C-232, Part II-R, Carmichael Junior High School.
- 53-A-R, Project C-233, Part II-R, Spalding Elementary School.
- 50-A-R, Project C-234, Part II-R, Additions to Marcus Whitman Elementary School.
- 49-A-R, Project C-235, Part II-R, Additions to Lewis & Clark Elementary School.

The following Informal Letter Requests were approved by the Atomic Energy Commission during the month:

- Cleaning of Coal Fired Furnaces.
- Maintenance of Prefab Roofs.

Applications for housing were reduced during the month from 250 to 231.

Seven new commercial facilities were opened for business: Hanson's Barber Shop, Green Hut Restaurant, Davis Furniture Company, Charm Beauty Salon, Kortons Music Store, Spencer Kirkpatrick Insurance Agency, and Sullivan's Dry Cleaning Agency.

Business trends remained fairly constant during October.

Notices regarding the increase in telephone rates were mailed to all subscribers.

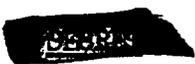
Medical Division

The Medical Division's roll decreased by 12 from 394 to 382.

A revised budget for fiscal year 1950 has been submitted. This revision takes into consideration actual first quarter costs and more realistic cost estimates for the remainder of the year based on present population trends.

While the total net cost of operating the Medical Divisions was \$12,460 less than the budgeted figure, the Community Medical cost was \$1,238 above the budget estimate.

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General Accounting Divisions

Plans and routines were completed for the segregation of Research and Development costs by "activities". It is expected the H. W. Instructions Letter covering routine for approval of funds for Research and Development jobs will be issued in November or December.

Considerable attention was given to improvement of financial statements and also to furnish Management with additional financial information.

Considerable work was also done on the proposed voucher system for the Accounts Payable Division, but final plans have not yet been approved.

Special effort has been placed on calculation of salary adjustments retro-active to April 11, 1949 under the Union Agreement. Although Saturday overtime work in connection with calculation of the adjustments was discontinued on October 15 because of the exceptional progress that had been made, the payments will be distributed to employees on Friday, November 18, 1949. Original estimates indicated that distribution of these payments would be made in December, 1949.

During the period from January 1 to September 18, 1949, the average percentage of absenteeism per week for the General Accounting Division was 3.82 as compared to the average for Hanford Works of 2.27. As a result of our efforts to reduce absenteeism in September and October, the average percentage of absenteeism per week for the General Accounting Division for the five weeks ended October 23, 1949 was reduced to 2.16, whereas the percentage of absenteeism for Hanford Works for the same period was 2.39.

Under the G. E. Employees Sale Plan, arrangements were made in October for the various division to issue traffic appliance purchase forms to employees at their place of work. The result will be a saving of time spent by employees who formerly had to come to the 703 Building for such certificates, and employees will be less inconvenienced.

Hanford Works and Nucleonics Department Financial Statements for the month of September were completed and distributed on October 18 and October 20, 1949, respectively. General Divisions Operating Reports covering September operating costs were completed on October 14, 1949.

Advances from AEC were reduced from \$4,500,000 at the beginning of the month to \$3,500,000 at the month end. Items comprising the balance in the advance account as of October 31 compared with those as of September 30 are detailed below:

	<u>September 30</u>	<u>October 31</u>
Cash in Bank - Contract Accounts	\$ 3,870,130	\$ 2,667,073
Salary Accounts	55,000	55,000
Travel Advance Funds	50,000	50,000
Unliquidated portion of advance prior to June 1, 1949	40,012	13,307
Advances to Subcontractors	300,193	300,180
Accounts Receivable - AEC	87,482	11,930
Cash in Transit	97,183	402,510
Total	<u>\$ 4,500,000</u>	<u>\$ 3,500,000</u>

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STAFF

General Manager G. R. Prout

Assistant General Manager R. S. Neblett

Assistant General Manager F. 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. H. 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
OCTOBER - 1949

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	NON - EXEMPT		EXEMPT		TOTAL	
	9-30-49	10-31-49	9-30-49	10-31-49	9-30-49	10-31-49
<u>GENERAL</u>	20	20	14	14	34	34
<u>LAW</u>	3	3	3	3	6	6
<u>DESIGN & CONST. DIV'S.</u>						
Administrative	19	17	6	6	25	23
Construction	85	54	96	71	181	125
Const. Accounting	55	53	8	8	63	61
Design	122	127	128	128	250	255
No. Richland Realty	77	64	13	11	90	75
<u>MANUFACTURING DIV'S.</u>						
General	4	4	7	9	11	13
Project Engineering Control	81	15	57	15	138	30
Project Engineering Design	-	66	-	42	-	108
Proj. Eng'r. Minor Const.	-	204	-	22	-	226
Mfg. Accounting	44	44	8	8	52	52
<u>OPERATING DIV'S.</u>						
"P" Division	251	261	66	67	317	328
"S" Division	295	299	73	75	368	374
Power	454	455	79	81	533	536
<u>MECHANICAL DIV'S.</u>						
Maintenance	489	358	75	60	564	418
Electrical	248	259	47	48	295	307
Instrument	185	192	46	46	231	238
Transportation	650	569	64	58	714	627
<u>TECHNICAL DIV'S.</u>						
General	1	2	5	5	6	7
Pile Technology	24	25	52	52	76	77
Separations Technology	58	61	96	97	154	158
Metallurgy & Control	309	323	114	117	423	440
<u>MEDICAL DIVISION</u>	307	294	87	86	394	380
<u>H. I. DIVISIONS</u>						
General	2	2	6	6	8	8
Operational	120	139	56	54	176	193
Development	69	63	24	24	93	87
Biology	23	24	18	20	41	44
<u>ACCOUNTING DIV'S.</u>						
Gen. Acctg. Payroll	82	85	8	7	90	92
Gen. Acctg. Acctg.	77	78	11	13	88	91
<u>EMPLOYEE & COMMUNITY REL. DIV.</u>	52	54	27	27	79	81
<u>PLANT SECURITY & SERV. DIV'S.</u>						
Patrol & Security	522	522	57	57	579	579
Safety & Fire	115	116	36	36	151	152
Gen. & Office Services	224	191	22	21	246	212
<u>PURCHASING & STORES DIV'S.</u>						
Purchasing	34	35	27	28	61	63
Stores	222	233	24	28	246	261
<u>COMMUNITY DIVISIONS</u>	589	604	147	147	736	751
GRAND TOTAL	5912	5915	1607	1597	7519	7512

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PERSONNEL DISTRIBUTION - OCTOBER - 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	
GENERAL	-	-	-	-	-	-	-	-	-	14	14
Clerical	-	-	-	-	-	-	-	-	-	20	20
Total	-	-	-	-	-	-	-	-	-	34	34

LAW
Clerical
Total

-	-	-	-	-	-	-	-	-	-	3	3
-	-	-	-	-	-	-	-	-	-	3	3
-	-	-	-	-	-	-	-	-	-	6	6

DESIGN & CONST. DIV'S

ADMINISTRATIVE
Supervisors
Engineers
Clerical
Others
Total

-	-	-	-	-	-	-	-	-	-	4	4
-	-	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	16	16
-	-	-	-	-	-	-	-	-	-	2	2
-	-	-	-	-	-	-	-	-	-	23	23

CONSTRUCTION
Supervisors
Engineers & Inspectors
Clerical
Others
Total

-	-	-	-	-	-	-	-	-	20	-	20
-	-	-	2	-	3	-	-	2	19	14	40
-	-	-	-	-	-	1	-	-	34	2	37
-	-	-	-	-	-	-	-	18	2	1	28
-	-	-	2	-	3	1	1	20	82	17	125

CONST. ACCT'G.
Supervisors
Clerical
Others
Total

-	-	-	-	-	-	-	-	-	7	-	7
-	-	-	-	-	-	-	-	-	53	-	53
-	-	-	-	-	-	-	-	-	1	-	1
-	-	-	-	-	-	-	-	-	61	-	61

HW 14916

DECLASSIFIED

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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	
Supervisors	-	-	-	-	-	-	-	-	-	12	12
Engineers & Estimators	-	-	-	-	-	-	-	-	-	116	116
Clerical	-	-	-	-	-	-	-	-	-	59	59
Others	-	-	-	-	-	-	-	-	-	68	68
Total	-	-	-	-	-	-	-	-	-	255	255

DESIGN

Supervisors
Engineers & Estimators
Clerical
Others
Total

NO. RICHLAND REALTY

Supervisors	-	-	-	-	-	-	-	-	8	-	8
Engineers	-	-	-	-	-	-	-	-	3	-	3
Clerical	-	-	-	-	-	-	-	-	14	-	14
Others	-	-	-	-	-	-	-	-	50	-	50
Total	-	-	-	-	-	-	-	-	75	-	75

MANUFACTURING DIV'S

	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	-	-	-	-	-	-	-	-	-	9	9
Clerical	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	13	13

GENERAL

PROJ. ENGR. CONTROL

Supervisors	-	-	-	-	-	-	1	-	-	7	8
Engineers	-	-	1	-	-	-	1	-	-	5	7
Clerical	-	-	-	-	-	-	-	-	-	11	11
Others	-	-	-	-	-	-	1	-	-	4	4
Total	-	-	1	-	-	-	2	-	-	27	30

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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

PROJ. ENG'R. DESIGN

Supervisors	-	-	-	-	4	1	-	-	-	33	38
Engineers	-	-	-	-	-	-	-	-	-	4	4
Draftsmen	-	-	1	-	6	1	-	-	-	40	48
Clerical	-	-	-	-	-	-	-	-	-	6	6
Others	-	-	-	-	3	-	-	-	-	9	12
Total	-	-	1	-	13	2	-	-	-	92	108

PROJ. ENG'R. MINOR CONST.

Supervisors	-	-	-	-	-	-	-	-	-	19	19
Engineers	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	7	7
Others	-	-	-	-	-	-	-	-	-	197	197
Total	-	-	-	-	-	-	-	-	-	226	226

MFG. ACCT'G.

Supervisors	-	-	-	-	-	-	-	-	-	8	8
Clerical	-	-	-	-	-	-	-	-	-	44	44
Total	-	-	-	-	-	-	-	-	-	52	52

OPERATING DIV'S

"P" DIVISION

Supervisors	12	12	12	11	-	-	13	-	-	7	57
Operators	36	38	36	35	-	-	102	-	-	-	247
Clerical	2	2	2	2	-	-	3	-	-	3	14
Total	50	52	50	48	-	-	118	-	-	10	328

"S" DIVISION

Supervisors	-	-	-	-	26	35	-	-	-	14	75
Operators	-	-	-	-	108	168	-	-	-	-	276
Clerical	-	-	-	-	6	13	-	-	-	4	23
Total	-	-	-	-	140	216	-	-	-	18	374

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	100-B	100-D	100-F	100-H	200-E	300	Plant	700-1100	TOTAL
	Area	Area	Area	Area	Area	Area	General	Area	
Supervisors	12	12	13	17	5	8	7	-	76
Technical	-	-	-	-	-	-	5	-	5
Operators	86	77	83	81	25	48	1	-	411
Clerical	1	1	1	1	-	1	5	-	10
Others	6	6	6	6	1	8	-	-	34
Total	105	96	103	105	31	65	18	-	536

12-12-9-13

MECHANICAL DIV'S.

MAINTENANCE

Supervisors	2	5	7	8	5	13	5	2	47
Engineers	-	-	3	1	-	-	-	6	10
Mechanics	17	26	39	56	35	88	-	-	304
Clerical	-	-	3	2	2	2	-	1	12
Others	3	2	7	8	3	13	-	-	45
Total	22	33	59	75	45	116	9	9	418

ELECTRICAL

Supervisors	1	2	2	3	1	5	2	23	41
Engineers	-	-	-	1	-	-	1	3	6
Craftmen	12	12	19	12	11	15	-	112	204
Clerical	1	-	1	1	-	1	2	10	17
Others	-	-	1	3	-	2	-	18	24
Telephone Oper.	-	-	-	-	-	-	-	15	15
Total	14	14	23	20	12	23	5	181	307

INSTRUMENT

Supervisors	2	3	2	2	2	5	-	4	28
Engineers	2	1	-	-	-	2	-	4	18
Mechanics	2	4	4	5	5	15	-	3	54
Clerical	1	1	1	1	1	1	-	4	16
Others	10	9	9	10	9	18	-	9	122
Total	17	18	16	18	17	41	-	24	238

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

	100-B Area	100-D Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	700-1100 Area	TOTAL
<u>TRANSPORTATION</u>										
Supervisors	2	1	2	1	1	1	1	18	26	53
Engineers	-	-	-	-	-	-	-	-	5	5
Drivers (Based on Areas Serv'd.)	3	3	5	1	3	4	4	159	40	222
Journycmen	2	3	3	1	2	4	-	-	70	85
Trainmen	-	-	-	-	-	-	-	24	-	24
Servicemen	4	2	10	2	5	5	6	12	28	74
Clerical	-	1	1	1	1	1	1	5	18	29
Others	9	6	7	2	5	10	3	55	38	135
Total	20	16	28	8	17	25	15	273	225	627

	Supervisors	Clerical	Total
<u>TECHNICAL DIV'S.</u>			
<u>TECHNICAL GENERAL</u>			
Supervisors	-	-	-
Clerical	-	-	-
Total	-	-	-

	Supervisors	Physicists-Technologists & Chemists	Tech. Grads.	Laboratory Assistants	Clerical	Others	Total
<u>PILE TECHNOLOGY</u>							
Supervisors	2	7	1	1	1	1	14
Physicists-Technologists & Chemists	3	1	1	4	1	1	14
Tech. Grads.	1	1	1	4	1	1	14
Laboratory Assistants	4	4	1	1	1	1	14
Clerical	-	-	-	-	-	-	-
Others	1	1	1	1	1	1	7
Total	11	14	2	2	2	2	47

	Supervisors	Chemists - Engr's.	Tech. Grads.	Clerical	Others	Total
<u>SEPARATIONS TECHNOLOGY</u>						
Supervisors	1	5	2	1	6	19
Chemists - Engr's.	3	11	2	2	1	19
Tech. Grads.	19	54	2	9	44	128
Clerical	4	2	1	1	5	19
Others	-	-	-	-	-	-
Total	27	70	4	12	42	158

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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	
Supervisors	1	1	-	1	3	11	32	-	-	5	54
Chemists - Engr's. & Metallurgists	5	-	-	-	1	2	54	-	-	1	63
Technologists & Tech. Grads.	1	1	1	3	10	27	29	-	-	-	72
Laboratory Ass't.	1	-	-	4	25	51	71	-	-	-	152
Clerical	-	1	-	-	1	2	38	-	-	32	74
Others	2	-	-	-	-	-	23	-	-	-	25
Total	10	3	1	8	40	93	247	-	-	38	440

METALLURGY & CONTROL

12 | 29 | 5

MEDICAL DIVISION

Supervisors	-	-	-	-	-	-	-	-	-	48	48
Physicians	-	-	-	-	-	-	-	-	2	27	29
Dentists	-	-	-	-	-	-	-	-	1	8	9
Technicians	-	-	-	-	-	1	-	-	-	24	25
Clerical	1	1	-	1	1	6	1	-	6	70	81
Others	1	4	4	1	4	5	2	-	7	160	188
Total	2	5	4	2	5	6	3	-	16	337	380

H. I. DIVISIONS

	Supervisors	Engineers	Clerical	Total
Supervisors	-	-	-	5
Engineers	-	-	-	1
Clerical	-	-	-	2
Total	-	-	-	8

OPERATIONAL

Supervisors	1	1	1	3	8	4	3	1	1	21
Engineers	4	3	5	3	6	10	2	-	-	33
Clerical	-	-	-	1	1	-	-	-	-	2
Others	9	12	12	12	17	31	24	8	2	137
Total	14	16	18	18	27	45	44	8	3	193

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

DEVELOPMENT

Supervisors	-	-	-	1	3	4	-	-	-	8
Engineers	-	-	-	5	4	6	-	-	1	16
Clerical	-	-	-	1	1	2	-	-	-	4
Others	-	-	-	11	23	16	-	-	9	59
Total	-	-	-	18	31	28	-	-	10	87

BIOLOGY

Supervisors	-	-	-	-	1	1	-	-	-	3
Engineers	-	-	-	-	8	-	-	-	-	17
Clerical	-	-	-	-	1	1	-	-	-	2
Others	-	-	-	-	7	-	-	-	-	22
Total	-	-	-	-	16	2	-	-	-	44

ACCOUNTING DIVISIONS
GEN. ACCT'G. PAYROLLS

Supervisors	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	85	85
Total	-	-	-	-	-	-	-	-	92	92

GEN. ACCT'G. ACCT'G.

Supervisors	-	-	-	-	-	-	-	-	13	13
Clerical	-	-	-	-	-	-	-	-	78	78
Total	-	-	-	-	-	-	-	-	91	91

EMPLOYEE & COMM. RELATIONS

Supervisors	-	-	-	-	-	-	-	-	26	26
Employee Rel. Counselor	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	44	44
Others	-	-	-	-	-	-	-	-	10	10
Total	-	-	-	-	-	-	-	-	81	81

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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	

PLANT SECURITY & SERVICE DIV'S.

PATROL & SECURITY

Supervisors	5	6	6	5	5	9	7	10	-	4	57
Patrolmen	41	46	69	56	65	122	65	4	-	2	505
Clerical	-	-	-	-	-	-	-	13	-	2	15
Seamstress	-	-	-	-	-	-	-	2	-	-	2
Total	<u>46</u>	<u>52</u>	<u>75</u>	<u>61</u>	<u>70</u>	<u>131</u>	<u>72</u>	<u>29</u>	<u>-</u>	<u>43</u>	<u>579</u>

SAFETY & FIRE

Supervisors	9	1	-	1	2	4	5	10	-	5	37
Firemen	38	-	8	-	-	9	14	-	-	14	83
Inspectors	5	4	4	4	4	1	1	3	-	1	27
Clerical	-	1	-	1	-	-	-	-	-	3	5
Total	<u>52</u>	<u>6</u>	<u>12</u>	<u>6</u>	<u>6</u>	<u>14</u>	<u>20</u>	<u>13</u>	<u>-</u>	<u>23</u>	<u>152</u>

GEN. & OFFICE SERVICES

Supervisors	-	-	1	-	1	2	-	1	-	14	19
Laundry Operators	-	-	-	-	-	34	-	-	-	16	50
Janitors & Servicemen	4	6	6	7	4	15	13	-	-	35	90
Clerical	-	-	-	-	-	-	-	-	-	24	24
Others	-	-	-	-	-	-	-	-	-	29	29
Total	<u>4</u>	<u>6</u>	<u>7</u>	<u>7</u>	<u>5</u>	<u>51</u>	<u>13</u>	<u>1</u>	<u>-</u>	<u>118</u>	<u>212</u>

PURCHASING & STORES DIV'S.

PURCHASING

Supervisors	-	-	-	-	-	-	-	6	-	22	28
Clerical	-	-	-	-	-	-	-	-	-	35	35
Total	<u>-</u>	<u>6</u>	<u>-</u>	<u>57</u>	<u>63</u>						

STORES

Supervisors	6	-	-	-	-	-	-	-	5	17	28
Clerical	1	-	-	-	-	1	-	-	39	192	233
Total	<u>7</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>44</u>	<u>209</u>	<u>261</u>

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COMMUNITY DIV'S.

	100-B	100-D	100-F	100-H	200-E	300	Plant	3000	700-1100	TOTAL
	Area	Area	Area	Area	Area	Area	General	Area	Area	
Supervisors	-	-	-	-	-	-	-	24	123	147
Patrolmen	-	-	-	-	-	-	-	26	28	54
Firemen	-	-	-	-	-	-	-	42	56	98
Journeyemen	-	-	-	-	-	-	-	-	160	160
Serviceemen	-	-	-	-	-	-	-	-	56	56
Truck Drivers	-	-	-	-	-	-	-	-	40	40
Power Operators	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	70	70
Others	-	-	-	-	-	-	-	-	122	122
Total	-	-	-	-	-	-	-	92	659	751
GRAND TOTAL	374	331	423	380	439	916	373	370	2994	7512

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MANUFACTURING DIVISIONS

OCTOBER 1949

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SUMMARY

Production Divisions

A total of 60 tons of metal was discharged from B, D, and F piles at an average concentration of 388 MWD/ton. The operating efficiency was 91.2 percent, and the operating levels remained at 275 MW at B and F piles and 305 MW at D pile.

The H Area was accepted from Construction on October 14, and the pile started initial operation on October 20. The operating level of the H pile was 100 MW at month end.

A total of 67 tons of acceptable slugs was canned at a yield of 88.5 percent. The machining yield was 73.1 percent, and the melt plant produced 22 tons at a yield of 78.1 percent.

Sixty-seven batches were started in the Canyon Buildings, with 53 batches being processed through the Concentration Buildings, and 60 through the Isolation Building. The average purity of completed batches from Isolation was 98.5 percent.

Mechanical Divisions

The Electrical Division has assumed the full operating responsibility for the telephone system, which was transferred during the month from the Plant Security and Services Division.

The peak load for the entire electrical system reached an all time high on October 26, 1949 of 71,400 KW. This was brought about largely by the start up of 100-H Area. Higher power levels at 100-H Area will not increase the electrical demand.

The transfer of the Minor Construction forces from the Mechanical Divisions to the Project Engineering Divisions was effected during the month. The total number of exempt and non-exempt personnel transferred was 239.



C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

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MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF OCTOBER, 1949

Richland, Washington
November 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

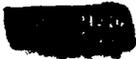
MANAGER, MANUFACTURING DIVISIONS

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November 7, 1949

P DIVISION

OCTOBER, 1949

I. GENERAL

The B and F piles operated at 275 MW and the D pile at 305 MW throughout the month except for outages listed under Area Activities. "Time Operated" efficiency for the three piles was 92.8%. This is the highest operating efficiency since February, 1946.

A total of 59.69 tons of metal, at an average concentration of 388 MWD/ton, was discharged from the piles during the month.

The H pile was charged and activated during the month. Actual operation began on October 20 and the schedule of tests outlined in HW-14638 had been completed by month end. Operating level at the end of the month was 100 MW.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - October, 1949

Beginning of Month 320

End of Month 332

Net Increase 12

E. W. O'Rourke was promoted to Assistant Chief Supervisor, 100-F Area, effective October 1.

H. T. Wells was promoted to Assistant Chief Supervisor, 100-H Area, effective October 1.

P Division

J. H. M. Miller was promoted to Area Supervisor, 100-H Area, effective October 1.

M. Davis, Assistant Chief Supervisor, 100-F Area, transferred to KAPL, Schenectady, New York, on October 1, 1949.

Four operators were transferred from the Transportation Division to the P Division and assigned to fill vacancies in the 300 Area. Nine operators were rehired to fill vacancies in the 300 Area.

III. AREA ACTIVITIES

<u>PILE SUMMARY</u>	<u>PILE B</u>	<u>PILE D</u>	<u>PILE F</u>	<u>PILE H</u>
Time Operated (%)	95.0	93.3	90.2	31.5
Operating Efficiency (%)	93.3	91.5	88.9	16.8
*Power Level (MW)	275	305	275	100
*Inlet Water Temperature (°C)	14.0	14.9	14.5	14.1
*Outlet Water Temperature (Maximum °C., 10 tubes 0.240" Zone)	54.4	52.9	55.7	25.8***
Number of Scrams	1	0	0	5
Number of Purges	0	0	0	1
Helium Consumption (cu. ft.)	24,004	56,250	15,978	14,975 (CO ₂)
Metal Discharged (tons)	19.82	13.29	26.57	.01
**Inhours Gained (this month)	-6	-13	-26	0
*Inhours Poisoned	516	504	559	300
*Inhours in Rods	55	79	49	40****

* Month end figures.

** Does not include increased reactivity due to addition of CO₂ to circulating gas.

*** 0.285 orifice zone.

**** Calculated for 400 MW.

PILE BUILDING

Outage 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>		
*10-1-49	D			5.0
10-4-49	B			17.3
10-4 10-5-49	F	F		48.0**
10-12-49	D			18.5
10-18-49	F			24.8
10-19-49	B			13.2
***10-21-49			B	0.1
(1)10-23-49	H			2.5
**10-26-49	D			28.1
10-31-49		H		21.9
10-31-49	B			(2)

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P Division

- * Outage to discharge poison following shutdown of 9-30-49.
- ** Includes outage to discharge poison.
- *** Unit scrambled when low pressure alarm on tube 1996-B could not be reset.
- (1) Unit down to strengthen poison columns.
- (2) Unit down at month end.

H pile scrambled five times during the month for reasons listed below:

- a. Under voltage relay on HSR system; adjusted to permit reasonable fluctuation.
- b. Surge on #1 Beckman; reason undetermined.
- c. Surge on #2 Beckman; reason undetermined.
- d. Surge on Beckman power supply caused by electrical work in progress.
- e. Power surge on BPA system.

Operating 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>
4365-D	4674-B
4382-D	4674-F

105-103-P (Corrosion Rates at Elevated Temperatures - Supplement A) During October, smaller orifices were installed on tubes 1054-F, 1057-F, 2682-F, 2683-F and 4461-F. At month end the reduced flow was not affecting the operation of the unit at nominal level.

105-114-P (Van Stone Corrosion Studies)
One rear face Van Stone flange, protected by a magnesium sacrificial gasket, was inspected on F pile and found in good condition.

105-168-P (Replacement of Pile Atmosphere with CO₂)
The CO₂ concentration was maintained at 60% on B and F piles and 40% on D pile throughout the month.

105-214-P (Silica Feed Reduction - Supplement B)
No sodium silicate was added to the process water at the piles during the month. Pressure drop film formation and decomposition appears to have reached an equilibrium value in the central tubes at all piles. The sudden unexplained increase in formation rate reported at D pile in September (HW-14596-A) has not reoccurred since a purge early in the month.

A total of 53,80 tons of Group V (Alpha rolled, triple dipped, completely transformed) material was discharged during the month at an average concentration of 403 MWD/ton without incident.

The loading of "B" metal columns was increased by one tube in F pile on October 5. The total tubes in service at month end are:

B Pile	24
D Pile	22
F Pile	23

During the month segmental discharge of four tubes was attempted. The tape would not enter one tube at B pile; a second tube was successfully processed. One tube attempted at D pile discharged satisfactorily; the tape was broken on a second tube.

Four process tubes were replaced during the month (channels 2282-D, 3679-D, 1481-F and 4280-F).

The loading of H pile was begun on October 4, 1949. Dry critical was reached on October 6 at 308 central tubes charged. Loading was completed on October 13 with 1983 tubes charged with metal.

An attempt was made to start operation of the H pile on October 16. Difficulty with sub-standard crossheader screens, described under Mechanical Experiences, made it impossible to start up at this time.

H Pile operation was begun on October 20 at 3.5 MW with critical being reached at 11:30 A.M. The level was raised to 100 MW on October 21 and the test procedure outlined in HW-14638 initiated. This work was complete by month end and the pile was operating at 100 MW.

Mechanical Experience

At month end all horizontal and vertical safety rods are in satisfactory operating condition.

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Work of an unusual nature performed on the safety rods during the month included the following:

1. Rods Nos. 22-B, 23-B, 28-B, 29-B, 33-B, 36-B, 37-B, 38-B, 31-D, 36-D were replaced with stainless steel rods and guides. A new thimble, guide and knuckle jointed rod was installed in position 32-F which was reported binding last month (HW-14596-A).
2. Thimble 26-F, reported leaking (HW-14596-A), was replaced.
3. The replacement of electrical leads on 16-B and 17-B was completed during the month.

A special flow test was made at 1904-D Building to determine if that facility could safely handle effluent flows from both 107-D and 107-DR. The test indicated that the total flow of both basins could be accommodated without overflow to the spillway.

On October 16, evidence of screen plugging was observed at H pile. Subsequent inspection revealed that 28 crossheader screens had collapsed. Repairs were made and all crossheader screens replaced with a reinforced type.

Pile Area Development

The pilot installation of the algae filter at 107-F Building is approximately 80% complete at month end. The tie-in of the necessary water lines is planned for November.

Process Control Activities

In addition to the routine activities associated with production scheduling, training, procedure revision, and suggestion system work, the group assisted with the midyear budget review, and expanded its cost engineering and project engineering functions.

Gas Processing Building

Operations in these buildings were normal during the month.

Special Hazards

The intensity of the beam at the top far edges of the D and F piles remained essentially unchanged.

Significant radiation beams were observed around the experimental holes, octant monitor holes and instrument holes at H pile. External shielding has been installed at these locations.

P Division

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300 AREA - METAL FABRICATION

Production Statistics

Production for the month of October was as follows:

Billets produced	22 Tons
Rods Machined	93 Tons
Bare Pieces Machined	68 Tons
Acceptable Pieces Canned	67 Tons

Melt Plant

The casting yields were as follows:

	<u>September</u>	<u>October</u>	<u>To Date</u> <u>1949</u>
Billet	68.8	78.1	68.8
Solid Metal	84.4	87.8	85.8

The substantial increase in billet yield resulted from improved cropping techniques, an abnormally small amount of difficulty in pouring, and because most of the TXB charged was processed from pickled chips.

Machining

Machining yields were as follows:

	<u>% Yield</u>		<u>To Date</u>
	<u>September</u>	<u>October</u>	<u>1949</u>
	72.6	73.1	70.2

The quality of rods machined during the month continued to show improvement. Yields ranging from 71.6% to 78.1% were obtained from rods rolled in September. Some rods were of low quality because they were elliptical, others had deep surface grooves, or split or frayed ends.

Chip Recovery

The Chip Recovery yield was as follows:

	<u>Yield</u>		<u>To Date</u>
	<u>September</u>	<u>October</u>	<u>1949</u>
	92.1	90.1	90.6

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The entire Chip Recovery process was operated four shifts and the press was operated an additional ten shifts. A total of 26,012 pounds of TXB was produced, of which 94.5 percent was processed from pickled chips.

Oxide Burning

The material burned was as follows:

<u>Weight Out - Pounds</u>		
<u>September</u>	<u>October</u>	<u>To Date 1949</u>
95,776	37,797	318,717

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

Canning Operation

The canning yield was as follows:

<u>September</u>	<u>October</u>	<u>To Date 1949</u>
91.1	88.5	90.9

Canning rejects, by cause, were:

	<u>Percent</u>		
	<u>September</u>	<u>October</u>	<u>To Date 1949</u>
Non Seating	1.7	1.8	1.0
Marred Surface	2.8	2.3	2.5
Al-Si on Outside of Can	0.7	0.3	1.0
Frost Test	1.4	1.6	2.0
Bad welds	0.6	0.5	0.7
Miscellaneous	<u>1.7</u>	<u>5.0</u>	<u>1.9</u>
	8.9	11.5	9.1

Miscellaneous rejects were unusually high as a result of rejecting 984 pieces canned on G line October 5 and 492 on October 7. This accounted for 3.2% of the total rejects for the month. In both cases the tin content in the Al-Si canning bath exceeded the specified maximum. Although the reason for the high tin content has not been positively established, it appeared on October 7 that tin was being carried over from the bronze bath

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in the 1-A furnace. This was indicated by an increase in the copper content. No further difficulty was encountered after 1-A furnace was bailed and recharged with other bronze. An investigation of the bath in question has failed to indicate any reason for tin carryover. Previous analyses have shown an average tin content in the Al-Si canning baths of about 0.06% after one shift's use. Canning baths are being sampled at the start of the shift and at two hour intervals thereafter to minimize production losses in case of a reoccurrence.

An attempt is being made to determine the tin content of the bonding layer of the slugs rejected for high tin as compared with standard canned slugs. If the tin content does not prove excessive, it may be possible to accept some of the slugs.

The following special request pieces were canned:

<u>Request No.</u>	<u>Content</u>	<u>No. of Pieces</u>
P-10-A	Lithium Aluminum Alloy	223

In addition 13 receptacle slugs and 7,534 lead slugs were canned.

Slug Recovery

	<u>% Recovered</u>		<u>Average Wt. - Lbs.</u>	
	<u>October</u>	<u>To Date 1949</u>	<u>October</u>	<u>To Date 1949</u>
Z Slugs	86.9	88.7	3.911	3.912
X Slugs	11.3	9.3	3.863	3.859
Rejects	<u>1.8</u>	<u>2.0</u>	---	---
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

<u>September</u>	<u>October</u>	<u>To Date 1949</u>
0.02/M	0.05/M	0.06/M

Two autoclave failures occurred in October. One piece was completely destroyed and the other had a ruptured can wall just below the base of the cap.

One canned slug taken from G line, on September 26, showed penetration within 0.010" of the outer can wall. No penetration was found on the retest and the pieces involved were released for normal processing. No additional penetration was found at less than 0.015" on other routine tests during the month.

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

	% Usable		
	September	October	To Date 1949
Aluminum Cans	93.8	92.0	94.3
Aluminum Caps	90.5	99.1	94.1
Steel Sleeves	84.4	99.2	88.0

Major causes for rejection of aluminum cans were surface scratches and dents. The quality of aluminum caps showed a marked improvement as a result of a reduction of dimensional (large and small diameters) rejects.

Material Handling

A total of 91 tons of billets was shipped to Simonds Saw and Steel Company and 90.5 tons of oxide were shipped to Mallinckrodt Chemical Works.

One hundred thirty-four tons of alpha rolled rods were received from Simonds Saw and Steel Company.

305 Test Pile

Operation of the test pile was continued on a one-shift five day week schedule. A total of 74 tests was run on canned slugs, 63 on billet eggs, 309 on graphite bars, and the following on special work requests:

<u>Request No.</u>		<u>No. of Tests</u>
105	Test P-10-A slugs to be used in 105 pile.	13
107	Test various glasses for absorption cross section.	14
108	To test the effectiveness of potassium borate type P-column to be used as a temporary P-column in the 105 piles.	10
109	To test P-10-A slugs to be used in the 105 piles.	81

110	Test various glasses for absorption cross section.	2
111	Test boron content of boron impregnated graphite.	7

In addition to the above, four tests were run on canned slugs in conformance with Production Test No. 313-109-M, (Heat Treating Uranium by Electrical Induction) and 51 tests were run on canned depleted uranium slugs as outlined in Production Test No. 313-110-M, (Lead Dip Canning of U-238).

On October 10 the sampling of canned slugs for 305 testing was reduced to twenty-two slugs (one test stringer) taken at random from each production lot. The change decreased the testing of canned slugs by approximately 75%.

Special Hazards

No unusual conditions developed during the month.

Development

To determine the feasibility of reducing uranium turning scrap on the Gisholt turret lathes, a test is being run to evaluate cut-off tools having a width of less than the standard 5/16" tool. Cut-off tools were prepared having widths of 1/4", 3/16", and 1/8" respectively, for this test. Tools having a 1/4" width were comparable to the 5/16" tool. The 1/8" tools lacked the necessary rigidity and fractured or chipped after short periods of use. Results to date on the 3/16" tool appear to be satisfactory, although not conclusive.

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S DIVISION

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OPERATING SECTION

I. GENERAL

Sixty-seven batches were started in the Canyon Buildings, fifty-three batches were processed through the Concentration Buildings and sixty batches were completed through the Isolation Building. The average purity for completed batches was 98.5 percent.

The over-all material balance for B and T. Plants (including the Isolation Plant) averaged 98.7 and 101.8 percent, respectively, for a combined average of 100.1 percent. Waste losses for the two plants averaged 2.7 percent.

Canyon and Concentration Building Production Performance Data - (10-1-49 to 10-31-49, inclusive)

	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Number of charges started	33	34	67
Number of charges completed	29	24	53

For completed charges:

Percentage of starting product in waste:

This month	2.7(a)	2.7(a)	2.7
Last month	2.4(b)	2.7(b)	2.6
Cumulative to date	4.4(c)	4.1(c)	4.2

Percentage of starting product recovered:

This month	95.4	100.2	97.5
Last month	94.2	98.5	96.5
Cumulative to date	97.3	95.6	96.5

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	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Percentage of starting product accounted for:			
This month	98.1	102.9	100.2
Last month	96.6	101.2	99.1
Cumulative to date	101.7	99.7	100.7
Gamma decontamination factor (Log.)			
This month	7.50	7.52	7.51
Last month	7.59	7.52	7.55
Cumulative to date	7.36	7.34	7.35

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.014%-T Plant; 0.009%-B Plant. (b) 0.011%-T Plant; 0.013%-B Plant. (c) 0.101%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (10-1-49 - 10-31-49, inclusive)

	<u>% of Incoming Product</u>				
	<u>Prepared for Shipment</u>	<u>Recycle</u>	<u>Waste</u>	<u>Retained Samples</u>	<u>Material Balance</u>
Average for this month	95.4	4.53	-0.034	0.035	99.9
Average for last month	94.6	4.53	0.27	0.03	99.4
Average to date	95.8	4.68	0.06	0.02	100.6

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	370
End of month	374
Net Increase	4

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

- 4 transfers from other Divisions (weekly roll)
- 2 terminations (weekly roll)
- 2 rehires (one monthly roll, one weekly roll)
- 1 transfer to another Division (weekly roll)
- 1 new hire (weekly roll)

Changes in Supervisory Organization:

W. N. Mobley was promoted to Assistant Chief Supervisor on October 1, 1949.

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D. McDonald, Area Supervisor, was transferred from the Rala Group to the Process Control Group.

J. P. Turping was promoted to Area Supervisor on October 1, 1949.

A. Bradway was promoted to Senior Supervisor on October 1, 1949.

W. P. Nicklason was hired as a Senior Supervisor on October 31, 1949.

E. A. Roberts was transferred from the weekly roll as a Supervisor-in-Training.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants

Extraction Waste Losses

There were no changes in extraction waste losses during the month which could be correlated directly with increases in the MWD/ton level of metal processed. There was a slight increase in analysis of the waste before rework in T Plant where the MWD level increased significantly. However, the loss after rework remained the same as last month. In B Plant, where there was an appreciable decrease in the MWD/ton level of metal processed, there was an increase in extraction waste product content both before and after rework.

	<u>T PLANT</u>		<u>B PLANT</u>	
	<u>October</u>	<u>September</u>	<u>October</u>	<u>September</u>
Original analysis	1.06	0.99	0.99	0.89
Throw-away loss	0.69	0.69	0.77	0.58
Average MWD	378	324	333	346

Harshaw Single Distilled Hydrogen Fluoride - T Plant

Thorough evaluation of Harshaw Company single distilled hydrogen fluoride, which represents material containing the maximum impurities allowed under the vendor's specifications, was completed in the T Plant Concentration process (Production Test 224-T-12). Since waste losses and decontamination factors were unaffected by the use of this material, it will in the future be accepted for the process in carload lots. As mentioned in previous reports, a savings of approximately nine and one-half cents per pound of HF will be realized from the acceptance of single distilled material. It is contemplated

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that a test will be run on single distilled HF of a similar purity manufactured by a competing concern.

Acid Wash Runs - T and B Plants

At the beginning of the month, prior to switching the T Plant process to semi-parallel operation, a normal acid wash run was processed through the equipment to remove product held in process tank heels. This run ultimately picked up 35.95 percent of a normal run from Canyon Building process equipment and 13.57 percent of a normal run from Concentration Building process equipment for a combined recovery of 49.52 percent. This run was sent to the Isolation Building for further processing there. After installation of piping for semi-parallel of the Canyon equipment, a second acid wash for testing of new lines and for further cleaning of equipment was processed through Sections 8, 12, 16, 17, 18 and 19. Processing of this run was continued through the Concentration Building. Since the total recovery by the wash was only 6.43 percent of a normal run, it was returned to Concentration Building re-cycle.

A scheduled acid wash run was completed through the B Plant Canyon and Concentration Buildings late in the month. The run picked up 52.09 percent of a normal run from the Canyon process equipment and 3.50 percent of a normal run from the Concentration Building equipment for a total recovery of 55.59 percent of a normal run.

The wash was sent to the Isolation Building for further processing. Of the total material recovered approximately 22 percent came from the precipitator in Section 14. A defective spray in this tank was determined to be the cause of the hold-up of product. This spray has since been replaced.

Semi-Parallel Operation Canyon Process - T Plant

With the start of the October production schedule, the T Plant Canyon was placed in semi-parallel operation without incident. The two lines of flow are shown below:

<u>Step</u>	<u>Sections</u>
Reduction	
Extraction	Sect 7 ← 6-3 → Sect 8
Extraction Product Solution	
Log Tank	Sect 12, (12-7 Tank) Sect 12, (12-8 Tank)
1st Cycle By-Product	Sect 13 Sect 16
1st Cycle Product	Sect 14 Sect 17
2nd Cycle By-Product	Sect 18
2nd Cycle Product	Sect 19
	↓
	Concentration Bldg.

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A maximum time cycle of 12 hours per run through any one step of the Canyon process should ultimately be realized from this arrangement.

Progress is being made in making necessary rearrangements of B Plant Canyon Process equipment for semi-parallel operation.

Recalibration of Process Batch Make-Up Tank - B Plant

Following the installation of a 100 inch manometer in parallel with the Ring-Balance weight factor measuring instrument for the extraction batch make-up tank (6-3) in B Plant, a water recalibration was made of the tank. The new calibration, which should be much more accurate than the original calibration performed, due to use of a long scale manometer rather than the Ring-Balance Chart, lowers the material balance for the B Plant process by 1.3 percent. After application of specific gravity corrections to the tank heel (heel below the Ring-Balance and manometer sensing tubes) the over-all material balance figures for the B Plant process will be lower by 0.70 percent. Use of the new 6-3 tank calibration and the heel specific gravity corrections is now in effect.

Process Leak - B Plant

Following replacement of the first decontamination cycle by-product precipitator in B Plant, approximately 1.2 percent of a normal run was lost through a gasket leak on the product solution line from Section 12 into the precipitator. The product was recovered by collecting it in 4,200 lbs. of cell drainage water and returning it to the process as dilution water in the extraction pre-reduction step.

WASTE DISPOSAL

241-TX Metal Waste Storage Tank Riser Shielding

Fabrication of thicker shielding plugs for the 42" risers from the 241-TX waste farm metal waste storage tanks has been stopped until it is fully determined that these will be needed. As the level of liquid in the 101-TX tank has built up, radiation levels at the risers have leveled off. It is thought possible that as sludge settles out, enough activity may be carried to the bottom of the tank to lower the radiation field emanating from the supernatant to levels consistent with shielding presently installed.

Product Content of Coating Wastes - B and T Plants

Sampling of coating wastes in B and T Plants was continued through the month. Losses are still of the same order of

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magnitude (approximately 0.5 percent of a normal run per de-coating operation) as was reported last month. It is planned to institute a program for investigation of the effect various techniques of washing metal heels in the dissolvers will have on the coating waste losses.

Waste Status

The status of the Waste Storage Areas as of October 31, 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	80.2	-	0	78	78
x201,2,3,4	Metal	0	100	-	-	0	-	-
x107,8,9	Metal	-	-	-	-	-	-	-
x107,8	Metal	-	-	-	-	-	-	-
x101,2,3,4	Metal	-	-	-	-	-	-	-
x107,8,9	1st Cycle	100	100	-	0	0	-	-
x110,11,12	1st Cycle	-	100	-	-	0	-	-
x104,5,6	1st Cycle	-	-	-	-	-	-	-
x109,10,11,12	1st Cycle	-	-	-	-	-	-	-
x115,118	1st Cycle	-	-	-	-	-	-	-
x107,8	1st Cycle	-	-	100	-	-	0	-
x110,11	1st Cycle	-	-	17.4	-	-	243	243
x104,5,6	2nd Cycle	62.1	-	-	241	-	-	241
x110,11,12	2nd Cycle	100	-	-	0	-	-	0
x113,14,16,17	2nd Cycle	-	-	-	-	-	-	-
x112	2nd Cycle	-	-	0	-	-	212	212

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	-	-	13.8	-	-	622	622
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	-	-	30.9	-	-	530	530
x115,118	1st Cycle	-	-	0	-	-	410	410
x107,8	1st Cycle	-	-	-	-	-	-	-

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<u>Bldg. 241</u> <u>Tanks</u>	<u>Waste</u>	<u>Percentage Full</u>			<u>Reserve Capacity in</u> <u>Batches to Process</u>			
		<u>T</u>	<u>U</u>	<u>TX</u>	<u>T</u>	<u>U</u>	<u>TX</u>	<u>Total</u>
x110,11,12	2nd Cycle	92.4	-	-	45	-	-	45
x113,14,16,17	2nd Cycle	-	-	0	-	-	1123	1123

MECHANICAL PERFORMANCE

Connector Failures - B and T Plants

Three connectors in the Canyon Buildings developed leaks or other defects and required replacing. These were:

- 1) The 12-7 tank to Section 13 precipitator transfer jet assembly in T Plant.
- 2) The first cycle product precipitator spray assembly in B Plant.
- 3) The weight and density instrument connector on the 9-1 tank in B Plant.

None of the above assemblies could be repaired due to high radiation levels associated with the assemblies. The loss of product involved was negligible.

Five other leaks in canyon process piping, four in T Plant and one in B Plant, were detected. In each of these cases, repairs were effected either by reimpacting the connector head or by replacing gaskets. The only significant loss of product, 1.2 percent in B Plant, (reported above under Production Performance) was subsequently recovered in the cell drainage and returned to process.

Precipitator Tank Replacement - B Plant

The Section 13 by-product precipitator tank in B Plant, which was reported last month as having a 1200 lb./hr. water leak from a crack in the heating-cooling jacket, was replaced with one from the 19-3 position. The jacket of the replacement tank was banded at an earlier date. The precipitator which was replaced also had jacket compression bands and was first placed in service in April, 1949. Due to the presence of highly radioactive materials to which this tank was exposed, it will be impossible to make repairs to the jacket.

Precipitator Jacket Repairs - B Plant

A break in a welded seam of the heating-cooling jacket of a precipitator, which had failed in the 14-1 position and was interchanged at an earlier date with the 19-1 tank, was successfully rewelded. In order that the jacket would not be further exposed to the vigorous temperature changes from steam heatings which are encountered in the precipitator position, the repaired tank was re-installed as a centrifuge-catch tank in Section 19.

Lanthanum Fluoride Precipitate Centrifuge - T Plant

The skimmers in the E-2 lanthanum fluoride precipitate centrifuge in T Plant, inspection of which in September disclosed disappearance of the reinforcement webbing, were replaced. A metallurgical examination of a sample of the webbing from the old skimmers showed that 18-8 Cb stainless steel had been used as a material of construction of the webbing rather than the specified 25-12 Cb stainless. Tests of the replacement skimmers, before installation, showed that correct materials have been used for these.

IV. EXPANSION AND CONTROL SECTIONRedox

Work was continued during the month in cooperation with the Design and Technical Divisions on the rescoping of the Main Plant Project. At month end, this work is essentially complete and the following information has been transmitted to the Kellex Corporation:

Redox S Area Plot Plan
Engineering Flow Diagrams
Material Balance Flow Diagrams
Instrument Flow Diagrams
Architectural Arrangement Prints
Ventilation Flow Diagrams
Equipment Arrangement Prints
Piping and Header Piping Arrangement Prints
Mock-Up Building Layouts
Electrical One Line Diagram
Design Basis Letters
Mechanical Design Instruction Letters

The following developments in Redox design during the month are noted:

- a) Upon recommendation by the Technical Division and approval by the Separations Committee, the length of the extraction columns has been increased. This change, while effecting most of the columns, has its maximum effect in the 1A and 1S columns where the length is increased from 40 to 55 feet. The recommendation is based upon improved yield and decontamination performance resulting from longer scrub sections.
- b) With the development of more concrete information as to equipment height and placement it was found desirable to lower the cell floors by two feet, making a depth of 27' standard in the cell area. The cell section containing the small extraction equipment remains unchanged at 15'.

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- c) Decision was reached concerning the type and location of additional emergency power equipment in the 200-W Area. A second steam powered emergency generator of 750 KVA; capacity will be installed in the 200 West Area Power House. The emergency power load for the Redox Plant is estimated at 350 KVA; however, the as yet undetermined demand of the Metal Recovery Operation with over-all area considerations indicated the advisability of this installation in preference to a Diesel installation located at the Redox Plant.
- d) At the request of the Maintenance Division and the subsequent approval of the Design Division, the 272-S Mock-Up Building previously planned for the 200-W Area has been moved to a point 200 feet west of the 272-E Area shop. A desirable integration of all 200 Area Mock-Up facilities will result from this change which has the tentative approval of the Separations Committee.
- e) Preliminary studies are now being made to determine the most suitable location for the second Redox Plant (202-A Building) in the 200 East Area.

Metal Recovery

F. A. Hollenbach, S Division, is currently engaged as a member of a committee, chaired by C. A. Rohrmann of the Technical Divisions, studying available metal recovery processes. Evaluation of these processes will be made on the basis of capacity, costs, design and construction time factors, etc.

Rala

A revised directive in answer to our letter of August 31, 1949 (HW-14296) which requested clarification and additional funds to permit a more reasonable approach was issued. Existing estimates on design and construction time and costs have been reviewed for the purpose of supplying the Atomic Energy Commission additional information upon which to base the revised estimate.

Several of the design problems now under study are:

- a) Probable need for consultants or specialist sub-contractors on the design of the electrolytic cell. Quotations have been received from the General Engineering and Consulting Laboratory and from the Udyllite Corporation. Additional information on the development of the Oak Ridge Rala electrolytic cell has recently been received for study.
- b) Problems concerned with the use of small dip tubes and special radiation chambers are being studied by Design Instrument personnel.

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- c) A study of materials of construction required at various points in the process is being made by the Design Division.
- d) Due to off-standard kala dissolver charge size, choice must be made between modification of the existing 3-51 dissolver, modification of the head end dissolver, or design of our intermediate size dissolver.
- e) Kala sample size requirements have recently been established by the Technical Divisions (Document HW-14861). This will now permit shielding calculations and design of sampling equipment to proceed.

234-5 Building - Phases II and III

Reported under separate cover in Document HW-15014.

PROCESS CONTROL

241-BY Tank Farm - Project C-271

As previously reported, the sub-contractor's phase of this project has been completed. With the installation of the permanent rectified on the cathodic protection system and the installation of the 3 1/2" OD stainless steel line between the 152-B and 252-B diversion boxes (staked out only) the General Electric phase of the work will be essentially complete.

First Cycle Waste Evaporation Project Proposal

The possibility of more stringent restrictions, reported last month, which would lead to the evaporation or storage of all 200 Area liquid wastes, now appears to be resolved with the decision that present cribbing practices including the cribbing of second cycle wastes are tolerable until more satisfactory methods can be placed into effect. It is expected that the installation of waste evaporators for Bismuth Phosphate Plant wastes may now be made on a purely economical basis. A study to this end is now being made and recommendations will be forthcoming during the early part of the month.

Pipe Creeping Through Concrete - Canyon Buildings

Work on methods for correction of the problem of steam pipe creeping through concrete was continued during the month. The No. 54 steam pipe in Section 16 in the 221-B Canyon has been returned 3 1/4" towards its original position in the pipe gallery by the use of a hydraulic jack in conjunction with chilling the pipe with expanded CO₂ gas. No movement of the pipe which has moved 2" into the cell has been evidenced on the cell side, however, even though impacting of

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the pipe during application of pressure with the jack has been tried. The pipe has not yet been tested. Work on the problem will be continued during the coming period.

Metal Waste Supernate Samples

Two 100-gallon samples of metal waste supernate were obtained without incident for shipment to Site K-25 at Oak Ridge on October 19, 1949 from X-103-U tank.

Agitator Shaft Seals - 224 Concentration Buildings

Sealing of agitator pedestal supports with G. E. Cocoon precoated screens for the purpose of preventing the escape of air-borne product contamination has been completed on all precipitator and solution tanks in Cells A through E in the 224-B Concentration Building. Air samples which will be obtained and which will reflect the success or failure of the work will be reported by the Operating Section.

Dissolver Off-Gas Filter Project - C-337

Based upon recent technical developments and in accordance with the letter F. C. Schlemmer to G. R. Prout, dated October 24, 1949, the project for the installation of dissolver off-gas filters (using No. 55 Fiberglas) outside the Canyon Buildings at a cost of \$337,000 is being revised to cover the installation of a filter (AA Fiberglas) on one dissolver in the 221-T Canyon and one dissolver in the 221-B Canyon.

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POWER DIVISION
OCTOBER 1949

GENERAL

The second lost time injury in the Power Division since the start of operations occurred in the 100 B Area on October 29, 1949, when an operator allowed his hand to be caught between a V-belt stoker drive belt and pulley.

Coal shipments from the mines were resumed on October 4, 1949 when Western miners returned to work. A breakdown at the coal mine interrupted coal shipments on October 27, 1949 for an estimated six day period. A stock of approximately 7,000 tons of coal was purchased from another vendor to partially offset the effect of the recent interruptions in shipments from the regular vendor.

Frostproofing of export line air trap vents is in progress on the 200 Area section of the line, and has been completed on the 100 B, D, and F sections.

A bar screen was installed in the chute to the coal crusher in the B and F Areas. This had previously been installed in the 100 D Area, and remains to be installed in the 200 Areas.

PERSONNEL AND ORGANIZATION

No of employees on payroll	October
Beginning of month	533
End of month	<u>537</u>
Net Increase	4

The indicated net increase is the result of the transfer into the Division of two engineers and three weekly roll people, the hiring of one operator, the transfer out of the Division of one operator, and the termination of one operator.

The staffing of the 100 H Area with operating personnel was completed during the month.

100 AREAS

The new low rate of coagulant feed established in September was continued in October, but an increase is indicated at an early date as water temperatures decrease.

Work on the project to remove the deaerator auxiliary piping and accessories was discontinued in the 100 F Area on October 28, 1949, and was started in the 100 D Area on October 31, 1949.

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Power Division

On October 20, 1949, normal power operations were started in the 100 H Area. Major items remaining to be completed included the following:

At the 181 River Pump House, oil leaks in the Nos. 3 and 4 pump motors and vibration in the No. 7 pump unit remained to be corrected.

At the 182 Reservoir Pump House, bearing replacements on the No. 3 filter plant supply unit, impeller repairs to the No. 9 filter plant supply unit, completion of the 2-inch sanitary water line to the inlet house and the straightening of steam line poles in the vicinity of the inlet house remained to be done.

At the 183 Filtration Plant, the replacement of the chemical feeder mixers and replacement of an end bell on the No. 1 process pump motor remain to be completed.

In the 190 Process Pump House the replacement of incoming water flow control valves, completion of instrumentation and setting of turbine controls, correction of turbine oil foaming and the placing of air conditioning and ventilating equipment in proper operating condition remain to be done.

In the 184 Boiler House, the calibration and setting of combustion controls, adjustment of Copes regulators and running boiler efficiency tests have yet to be completed.

In addition to the above, numerous items of a minor nature remain to be finished.

200 AREAS

Construction of an extended tile field for sewage disposal for the 221-271 Canyon Building was completed in the East Area during the month, while a similar extension was started in the West Area on October 6, 1949.

The installation of a stoker low speed governor alarm and replacement of a capillary tube for flue gas temperature measurement on October 17, 1949, completed all exceptions made for the final acceptance of the No. 4 boiler in the West Area.

The tube nest and expansion valve assembly were removed from the water chilling unit in the 234-5 Building on October 24, 1949 and returned to the factory, where tests are to be made to determine if this unit will meet specifications.

Minor disturbances to the 234-5 Building ventilations system occurred from 5:15 p.m. to 8:40 p.m. on October 30, 1949 when a circuit breaker opened, causing two exhaust fans to relay out. The faulty control relay which was responsible for this occurrence

DECLASSIFIED

Power Division

was repaired on October 31, 1949.

The detailed balancing of the ventilation system in the 234-5 Building has progressed throughout the month with percentages of completion in the various zones, ranging from 25 to 70 percent. Full responsibility for this work was assigned to Power Division as of October 28, 1949.

300 AREA

On October 5, the pump head of the No. 2 boiler feed pump was ruptured when the Copes regulator failed to function properly. This unit has been repaired and relief valves will be installed on the reciprocating boiler feed pumps to prevent a recurrence.

101 SEOPS

On October 12, 1949 at 6:58 p.m., a fire occurred at the No. 7 well house caused by motor overheating and badly damaging the well pump electric motor drive and burning the well house roof. The motor has been replaced and is ready for use at the month's end.

WHITE BLUFFS

Operations were normal at this location with 876,900 pounds of ice in storage on October 31, 1949.

POWER DIVISION STATISTICS

From October 1, 1949

Through October 31, 1949

A R E A S

RIVER PUMP HOUSE (Bldg. 181)

		100-B	100-D	100-F	100-H
River state Feet above sea level	(max)	386.4	378.9	365.5	370.9
	(min)	385.4	378.3	364.4	369.9
	(avg)	386.0	378.6	364.9	370.4
River temperature	avg. °F.	56.3	57.9	58.6	59.0
Water to Reservoir	gpm avg. rate	40126	42538	36252	32658

RESERVOIR (Bldg. 182)

Water to Filter Plant	gpm avg. rate	33753	37763	31860	29299
Water to Condenser System	gpm avg. rate	4292	3237	3707	3359
Water to Export System	gpm avg. rate	2081	1538	685	-
	gpm nor. rate	4304	4304	4304	-
Chlorine added #1 inlet	pounds	15815	23072	10500	5000

FILTER PLANT (Bldg. 183)

Filtered water Power House	gpm avg. rate	251	267	244	163
Filtered water to Process	gpm avg. rate	31665	33285	30675	-
Filtered water to Const.	gpm avg. rate	0	0	0	-
Filtered water Fire & San.	gpm avg. rate	117	148	180	132
Chlorine for Water Treatment	pounds	5953	1943	5500	15000
	ppm avg.	1.53	1.60	1.24	1.78
Lime for Water Treatment	pounds	17789	26096	19000	21000
	ppm avg.	1.4	1.9	1.6	1.9
Coagulant Water Treatment	pounds	67719	83718	64000	80500
	ppm avg.	5.4	5.9	5.4	7.4
Raw Water pH	pH avg.	8.03	7.96	8.10	8.0
Finished Water pH	pH avg.	7.75	7.77	7.71	7.71
Alkalinity, M.O. - Raw	ppm avg.	62	62	60	58
Finished	ppm avg.	57	55	56	56
Residual Chl. - Settled	ppm avg.	.31	.33	.21	.32
Finished	ppm avg.	.14	.13	.12	.16
Iron - Raw	ppm avg.	.07	.06	.05	.11
North Clearwell	ppm avg.	.02	.02	.02	.02
South Clearwell	ppm avg.	.02	.02	.02	.02
Hardness - Finished	ppm avg.	74	72	64	64
Turbidity - Raw	ppm avg.	2.9	2.5	1.0	3.0
Filtered	ppm avg.	No Anal.	No Anal.	0	0

Power Division

From October 1, 1949

Through October 31, 1949

<u>POWER HOUSE (Bldg. 184)</u>		100-B	100-D	100-F	100-H
Steam generated - Total	M pounds	93700	96839	93557	67760
	Avg. rate lb./hr.	125940	130160	125749	91075
225 psi Steam plant (est.)	M pounds	78853	81514	78731	56855
15 psi Steam plant (est.)	M pounds	605	605	605	605
Coal consumed	Tons	7297	7566	7087	7630
Coal in storage (est.)	Tons	21792	26656	21485	17152

DEAERATOR PLANT (Bldg. 185)
AND 190-H TANK ROOM

Water flow	gpm avg. rate	31415	33035	30425	-
Chemicals consumed:					
Dichromate	pounds	23200	23100	23100	19000
Sodium Silicate	pounds	0	0	0	0
Chemical Analysis:					
pH	pH avg.	7.65	7.66	7.65	7.60
Dichromate	ppm avg.	1.9	1.9	1.8	1.9
Silica	ppm avg.	-	-	-	-
Dissolved Iron	ppm avg.	.02	.02	.02	-
Free Chlorine	ppm avg.	.08	.16	.10	-

PROCESS PUMP ROOM (Bldg. 190)

Total water pumped	gpm avg. rate	31240	32860	30250	-
	gpm Nor. rate	32063	33180	31840	40100
Water temperature	avg. °F.	59.2	59.7	59.7	No Reading

VALVE PIT (Bldg. 105)

Chemicals consumed:							
Solids	pounds	0	2000	0	2500		
Chemical analysis:							
A, B, C, & D Headers							
Standard limits							
pH	7.5-7.8	pH	(max)	7.70	7.70	7.70	-
			(min)	7.60	7.60	7.65	-
			(avg)	7.65	7.66	7.66	-
S ₁ O ₂		ppm	(max)	-	-	-	-
			(min)	-	-	-	-
			(avg)	-	-	-	-
Na ₂ Cr ₂ O ₇	1.8-2.2	ppm	(max)	2.0	2.0	1.9	-
			(min)	1.9	1.9	1.6	-
			(avg)	2.0	1.9	1.8	-
Iron		ppm	(max)	.02	.02	.03	-
			(min)	.01	.01	.01	-
			(avg)	.02	.02	.02	-
Chlorides		ppm avg.		1.6	1.9	1.4	-

Power Division

From October 1, 1949

Through October 31, 1949

200 AREAS

RESERVOIR (Building 282)

		200-E	200-W
Raw Water Pumped	gpm avg. rate	1901	2403

FILTER PLANT (Building 283)

Filtered Water Pumped	gpm avg. rate	333	879
Chlorine Consumed	lb.	202	283
Alum Consumed	lb.	1361	4174
Chlorine Residual - Sanitary Water	ppm	.6	.3

POWER HOUSE (BUILDING 824)

Steam Generated - Total	M lb.	15032	36311
Steam Generated - Ave. Rate	lb./hr.	20204	48805
Coal Consumed (Est.)	tons	1248	2541
Coal in Storage (Est.)	tons	9561	10887

300 AREA

POWER HOUSE (BUILDING 384)

Steam Generated - Total	M lb.	12777	
Steam Generated - Avg. Rate	lb./hr.	17173	
Coal Consumed - Total (Est.)	tons	1491	
Coal in Storage (Est.)	tons	2368	

SANITARY AND FIRE SYSTEM

Sanitary Water from 3000 Area	Gal.	32,540,400	
Well Water Pumped - Total	Gal.	0	
Total Water Pumped	Gal/day	1,049,690	
Total Water	gpm avg. rate	729	
Chlorine Residual	ppm		.55

MISCELLANEOUS AREAS

WHITE BLUFFS

Ice Manufactured	lbs.		0
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101 SHOPS

Coal Consumed	tons		1031
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DECLASSIFIED

INSTRUMENT DIVISION

MONTHLY REPORT

OCTOBER, 1949

October 31, 1949

GENERAL

The start up of 100-H Area and difficulties with the vacuum systems in Building 234-5 have resulted in considerable overtime operation this month.

Additional personnel are being employed to meet manpower requirements.

100 AREAS (Reference Report No. HW-14964)

October 20, 1949 marked the start up of 100-H Area. First indication of power was picked up on the Proportional Counter at 11:31 A.M. Shortly thereafter the failure of the scaler to the P.C. set-up caused a slight interruption in operating procedure. Immediate substitution of a spare unit corrected the fault and normal operations were continued. First indication of power following interruption was at 12:06 P.M. Critical systems of instrumentation and control proved satisfactory to requirements of the Production Divisions, although it is acknowledged that further refinements in adjustment and calibration can be attained for more exactitude in continued operations.

In order to attain maximum efficiency of available forces, further increases - effective November 1, 1949 - are being made in the interim periods between scheduled routine maintenance jobs in the Power Division Specifications Nos. 100 - 01 through and including 100 - 08. In some instances it is feared that problems in delayed maintenance may be the end result, but further exploration into the limits of extension are bound to prove profitable, taking for granted the continued cooperation of the customer Division. Estimated savings for 100-B, 100-D and 100-F, assuming there develops no increase in the issuance of regular work orders for corrective purposes, will be approximately 225 man-days per year.

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Bldg. 105-DR

On two occasions, Oct. 11 and Oct. 24, 386 gauges were removed from the Pressure Monitor and returned to the factory for special alterations. All units will be returned and others sent as per factory modification program until complete systems at 105-H and 105-DR have been revised.

Shutdown Experience

On October 27, 1949, at 1:05 A.M., 100-H unit was scrambled with annunciator indicating no. 1 Beckman as the cause. Recorder revealed no high reading. Thorough inspection of the unit failed to reveal any trouble. Again at 1:55 A.M. during start up the unit was shut down with signal indicating No. 2 control unit. A check revealed no fault in the No. 2 unit. In the meantime, a voltage recorder has been put in service in the supply circuit in order to further explore the possible causes.

200 AREAS (Reference Report No. HW-14965)

Production Instruments

Metal waste storage facilities have been fully utilized in tank farms 241-U and 241-C; consequently instrument facilities for monitoring these metal waste lines have been dismantled and removed to the Instrument shops for storage until needed elsewhere.

In an effort to improve control of material balance and batch size, a 100-inch manometer has been connected in parallel with the Ring Balance Weight Factor instrument on tank 6-3 in 221-T and 221-B. Accuracy of the Ring Balance instrument has been maintained to within 1%; however, it is thought that elimination of any friction errors and use of the expanded scale of the manometer may increase the accuracy of the system. A dual tube manometer that reads both from top to bottom and bottom to top simultaneously was used to facilitate taking readings.

Inspection of the conduit trench in the canyon of Bldg. 221-T near Section 3 indicated that acid had entered the trench and attacked the conduit carrying cables to the G. E. ionization chambers for that section. The acid carried eroded metal into the chamber wells, blocking the drain. The chambers have not been removed pending drainage of the solution from the wells. It is assumed that they have been damaged beyond repair. Work is progressing in replacement of conduit and pull boxes. Upon completion, new cables and chambers will be installed.

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Eldg. 234-5

Hood 9 - A new triple beam balance has been installed on a cushion of one inch foam rubber to absorb vibration generated by the electrically operated shaker. The original balance was damaged by the vibration.

Hood 25 - Extensive leak detection has been carried on in an effort to determine the cause of vacuum loss. No significant leaks have been detected other than those caused in search for the trouble. Miller and Pirani gage tubes have been replaced to eliminate the possibility of erroneous pressure readings. The diffusion pump was replaced and satisfactory vacuum is now being maintained.

Ventilation System

Atmospheric Reference - A test is being run, recording the pressure difference between the atmospheric reference plenum and an insulated, closed tank of 30 gallons capacity. Small changes in barometric pressure result in driving the recorder off scale, necessitating equalization of the pressures with a notation of barometric pressure changes. Rapid fluctuations of pressure during windy weather as are present on zone pressure recorders are not evident in the atmospheric reference pressure.

The Instrument Division is assisting the Power Division in the ventilation system balancing preparatory to that division taking the responsibility for completion of the balancing when the Giffels & Vallet engineer leaves the project.

300 AREA (Reference Report No. HW-14966)

MANUFACTURING SECTIONS

Work load in the Electronic Shop has shown a slight increase. The Machine Shop work load continues to be sufficient only to justify a normal complement of men. Most of the machinists hired for the anticipated Technical Division work have not been gainfully utilized to date.

C-219 - Additional Health Instruments

The project is approximately 96% complete. The following work remains:

5 Hi-Range C.P. Meters

Five probes, four power supplies, and four extension handles complete with cables have been delivered to the H. I. Division. Completion of the additional extensions will be contingent upon receipt of the 7-conductor cable now on order.

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

The H. I. Division has issued instructions to proceed with additional instruments required on this project.

P-11

Instrument fabrication is in progress on several phases of this project.

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

Drawings have been prepared and the manufacture of components has been started.

OPTICAL SECTION

Work is in progress toward designing an improved borescope of lighter weight and simplified viewing heads.

A review of repairs on the crane periscopes during the past year indicates that most of the work results from shock caused by the operation of the rotary solenoids. A set of pneumatic snubbers have been fabricated which materially improve the smoothness of operation. This assembly will be installed for field test at the next routine inspection.

321 MAINTENANCE SECTION

New Work - Scale-Up

One-half ampere fuses were installed in the Brown Elektronik recorders and the Foxboro controllers to reduce the explosive hazard.

To reduce the frequency of opening an air purged electronic instrument case, the door of the OCF Foxboro controller was fitted with a spring loaded shaft and knob which can be utilized to engage the set point shaft inside the instrument.

DEVELOPMENT SECTION

The services of this group have been utilized extensively for the 100-H start-up. The importance and value of such a group of skilled instrument engineers becomes more apparent during a period of this kind.

DESIGN AND CONSTRUCTION (Reference Report No. HW-14967)

DESIGN

100-H Area

Four hundred and sixty (460) pressure gauges from the Pressure Monitors in 105-DR and 100-H have been returned to the vendor for rebuilding. A schedule is being prepared for the return of the balance of the pressure monitor gauges.

The replacement butterfly valve for 190-H tank control have been shipped and will be installed upon their arrival.

100-G Area

A summary of the work done and the status of the development on the rotary mercury-jet scheme of commutating for rapid scanning of Process Tube Exit Temperature is being made and will be ready for issuance early next month. Six of these units are required to complete a recording and scanning unit.

The instrumentation for heat transfer tests in Project #17, Small Scale Heat Transfer Tests and Project #18, Full Length Heat Transfer Tests, is about 50% complete.

100-H Area and 100-DR

Charles T. Main Company has started work on the schematics for the water plant and is scheduled to submit them on November 7th.

234-5 Building

Phase I

The barometric reference plenum tests are continuing.

A work order has been issued for the construction and testing of a new all-weather barometric pressure sensing tip.

Redox

The Instrument Engineering scope prints were approved by the Redox Committee on October 7, and reviewed with the Kellex people in New York about a week later.

CONSTRUCTION

100-H Area - 184-H Building

Difficulty has been experienced with the Copes Feed Water Regulator and work is being done which should lead to satisfactory performance of this equipment. All the other control equipment is functioning satisfactorily.

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MAINTENANCE DIVISION
OCTOBER, 1949

GENERAL:

The Maintenance Division backlog of work at the end of the month was 6078 man-days. This represents an increase of 19.8% over September.

100 AREAS:

Process tube #2282 was removed to permit inspection of the pile packing in the 105-"D" and tube #3679 was removed due to failure of the rear face Vanstone flange. In the 105-"F" pile process tubes #1431 and #4280 were replaced due to inner surface scoring by stuck process materials.

Due to excessive rusting of vertical safety rods in the "B" pile, stainless steel replacements were installed in positions #23, 29, 33, 36, 37 and 38 and chrome plated replacements in #21, 22, and 28. Standard length guides were installed in positions #21, 36, 37 and 38 but it was necessary to install short guides in positions #22, 23, 28, 29 and 33.

In the "D" pile, chrome plated vertical safety rods were installed in positions #31 and 36 with a standard length guide in #31 and a short guide in #36. Replacement of #34 rod with a chrome plated one was made because the rod was bent from rough spots in the guide. The guide bore was reground by a special tool fabricated in the shop.

In the "F" pile, air tests disclosed thimble leaks in vertical safety rod positions #26 and 32. The thimbles were replaced and special guides with knuckle jointed stainless steel rods were installed. Due to binding in the rod channel a slim rod tip was installed on #5 horizontal safety rod.

An all steel catwalk was fabricated and installed on the 100-B Power House soft water tank to replace the original wooden structure with which was no longer safe.

During this month construction of 100-H Area was completed and accepted for operation. Numerous inspections and adjustments were necessary in order to accomplish start-up. A considerable backlog of additional work of this nature exists at this time but completion was not essential for start-up.

200 AREAS:

A spare diffusion pump was bench tested and when found to operate satisfactorily, was installed in process hood #25 in 235 Building. This change produces a satisfactory vacuum.

The East Area shop completed 13 cell pipe assemblies for replacement in "B" and "U" Canyons.

Special valves with a Teflon seat were made and installed in the "B" process Area HF system.

DECLASSIFIED

Maintenance Division

300 AREA:

Major repairs were completed on the chip recovery press in Building 313. These repairs consisted of providing a new rain die, eight ram tips and three wearing plates eliminating all leaks and installing new packing.

101 SHOPS

GENERAL

Repair work on the 101 Shops roof was completed during the past month.

Buffalo Forge air conditioning units have been repaired and winterized. These units are now in good condition for the winter months and with proper operation, no serious difficulty should be encountered.

During the month the motor on the No. 7 well caught fire and extensive damage was incurred due to the loss of the motor and roof of the pump house. Another motor was obtained and revamped to meet the requirements of the No. 7 pump. This well is now back in service. During the shut-down of the No. 7 well, water service was maintained from the old Hanford No. 4 well.

A material audit of graphite materials received of the 101 Shops is being conducted. Audit results will be compared with the final material status report received from the National Carbon Co. at Morganton, N. C.

OPERATION:

Special graphite material is still being transported to the 300 Area for testing and raw material moved into color storage as soon as allocation results become available from Technical.

Machining work on the Nine-Tube Mock-Up for Technical was completed during the month and all materials delivered to the 300 Area.

Test work is still being conducted on the Ink Facility installed in the former laundry area for the 101 Shops.

Special machining work on magnesium electrodes for corrosion test has been completed.

During the month several special graphite cylinders have been machined into crucibles for the Technical Department.

Special machining work on a second order for graphite test dowels is being done for the Technical Department.

During the month a reinspection program has been completed on possible salvage graphite materials. This work has resulted in the saving of approximately 7500 pieces of graphite material ranging in length from 12 inches to 36 inches. This material can be made available for Technical exponential use or saved for use in future units.

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ELECTRICAL DIVISION

OCTOBER, 1949

GENERAL

At month end, the backlog of scheduled work for the Division was 9,710 mandays, a reduction of 1,218 from the previous month end. The reduction is accounted for by the transfer of 2,723 mandays of inside electrical, minor construction work to the new Minor Construction Division (Project Engineering Divisions) which was partially offset by a substantial increase of telephone backlog (release of telephone installation orders) and the scheduling of maintenance work for 100-H Area.

The total Divisional personnel at month end was 305, a net increase of 10. This includes the transfer of 20 telephone personnel into the Division, and the transfer of 17 inside Electricians, including supervision, to the Minor Construction Division Project Engineering Divisions.

The load chart for the peak day of the month, October 26, is attached, showing a peak of 71,400 KW for the entire system with coincidental demand of 20,200 KW for the 115 KV system (Richland, 300 Area and vicinity), and 1,200 KW for the remaining portion, 66 KV system (Hanford and White Bluffs). The combined demand is at a new all-time peak resulting from the addition of 100-H Area in normal production.

An Assistant Area Engineer, inside group, was transferred to the Minor Construction Division, Project Engineering Divisions. He was not replaced, but one Assistant Area Engineer has now been assigned to both 100-D and 100-B Areas.

Preliminary plans for power supply to the proposed Redox Plant, 222-S, have been reviewed.

A study has been prepared and sent to the Contact Engineer relative to power supply, and the need of a fourth oil circuit breaker or alternate 13.8 KV inter-area tie to the 151-D Substation to permit maintenance of all station equipment in event of simultaneous operation of two complete plants in this area.

A review of difficulties with ball bearing greases to specification A-06 has been prepared and sent to the Project Engineering Divisions for their consideration during preparation of a new specification study.

AREA ACTIVITIES

A load test was made to determine the amount of initial load on the 164-D emergency generator in event of power failure, resulting in the conclusion that the existing generator is of sufficient size to accommodate the additional emergency load of the proposed 190-DR Water Plant.

A 50 HP pump motor of the No. 7 well in the 101 Area burned out while the Operator left the clutch engaged to the standby gas engine when the motor was on automatic control. The overload relays were found to be defective.

A total of eight scrams occurred in 105-H, four during charging period and four after start-up. Those of October 6 and October 30 were due to system power

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disturbances, and that of October 25 was due to a relatively light voltage swing. Settings of relays will be checked as it appears that relay settings may be set overly sensitive in this area. The scram of October 27 was due to an Electrician's error during testing. The remainder were due to other causes, apparently non-electrical.

Blackout test of 100-H Area was made on October 25. Corrections are being made to a number of troubles. Similar blackout tests in the 200 Area were successful.

Emergency generator plants for First Aid Buildings in the 200 Areas have been removed and portable battery units substituted at an estimated savings of \$400 per area per year. This change was approved by the Medical Division.

Because of changes and additions to the building by the Technical Divisions, 292-U wiring, including service to the building, has been increased in size as necessary.

A procedure for paralleling load ratio transformers in 252-Z one and two substations has been developed to permit substation maintenance without power interruption.

TRANSMISSION AND DISTRIBUTION

Work on Project C-177 (115 KV), two substations in 300 Area, is now stopped because of over-run of approved expenditures for the project as a whole.

In 251 Substation, Dispatching Headquarters have been moved to the new portion of the building, using the old dispatching board, pending construction of the new one.

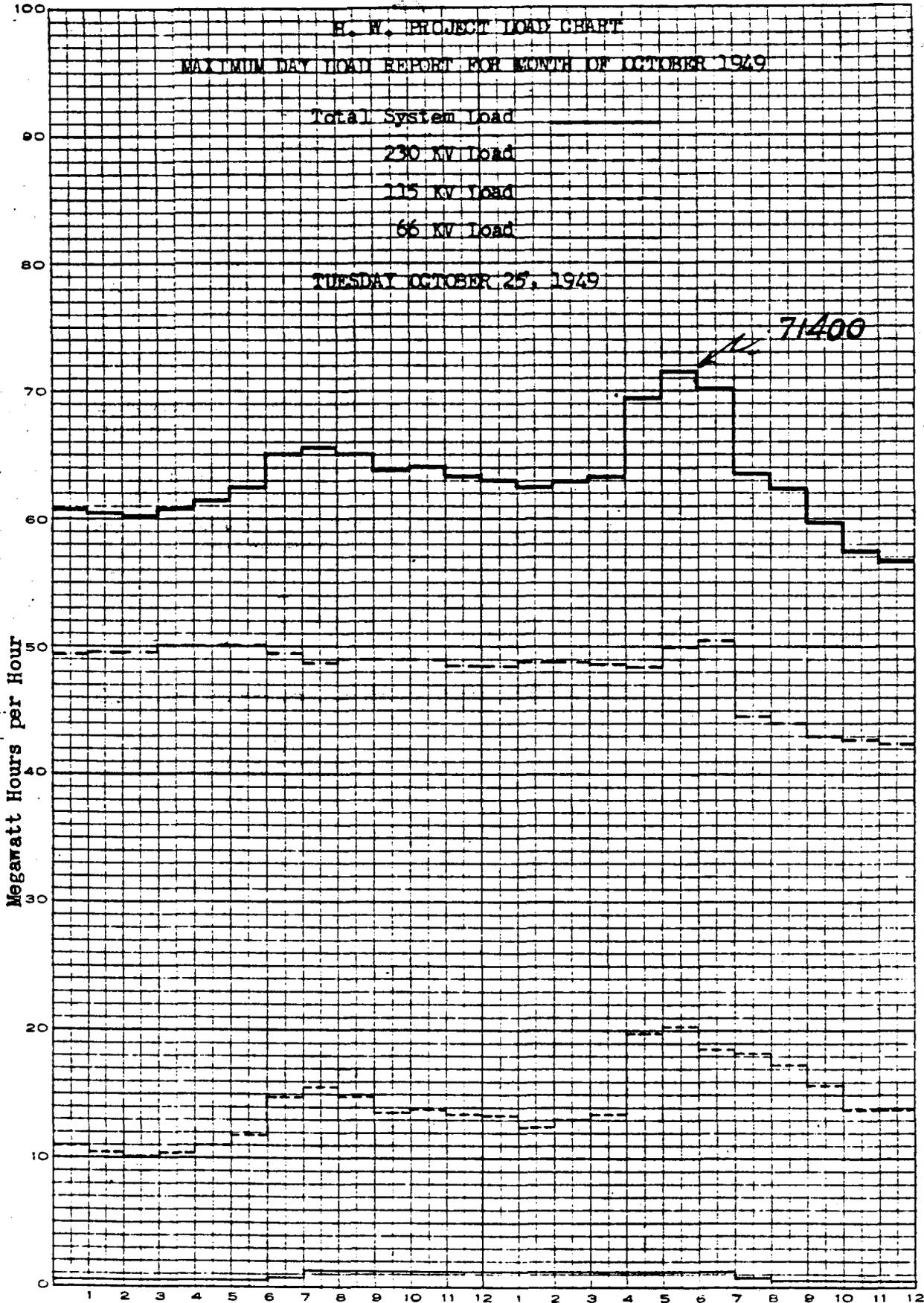
Under Project C-322, 275 poles were Osmostreated, and 45 condemned in Richland. Thirty-five poles were replaced, and 40 which were set last month were cut into service by transfer of lines and cross-arms.

Two power disturbances occurred during the month. On October 6, voltage swings resulting from storms on the Bonneville Power Administration system caused 105-H only to scram. On October 30, 105-H scrambled again due to power disturbance near Seattle. Both disturbances were of very short duration.

TELEPHONE SECTION

Responsibility for the complete operation of the telephone system has been transferred from Office Services Division (Plant Security and Services Division) to the Telephone Section, Electrical Division, simultaneously with the cut-over of the Richland exchange to dial system on October 7.

Six men have been employed on temporary three months maximum basis to assist in installing dial telephones in Richland houses which had not been previously served, especially in the new "F" ranch house area.





Classification Authority: [Redacted] to
 By Authority of: OPERATIONS
 OFFICE, NON-CONFIDENTIAL DOCUMENT DE-
 VIEW BOARD, [Redacted], Chairman
 Date: 12-2-51

TRANSPORTATION DIVISION
 MONTHLY REPORT
 OCTOBER 1949

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GENERAL

Transportation Division personnel forces were decreased by 93 employees during the month, from 714 to 621 by 5 transfers in, 1 return to work - illness, 87 transfers out, and 12 reduction of force terminations.

A total of 5 exempt and 73 non-exempt employees were transferred during the month from the Transportation Division to the newly established Minor Construction Division of the Project Engineering Divisions as a transfer function in accordance with Nucleonics Department Organization Announcement B-32, dated September 15, 1949.

Effective October 1, 1949, M. F. Rice was appointed Assistant Superintendent of the Transportation Division and A. P. Mitchell was appointed Area Engineer, Service Section of Transportation Division, succeeding Mr. Rice.

RAILROAD ACTIVITIES

Commercial inbound tonnage was somewhat below the expected volume due to the lack of coal shipments early in the month. Resumption of coal shipments during the latter part of the month brought the cars handled up to approximately the same as for September. Process service continued at a normal level with all movements being made as scheduled.

Work train service was provided to pick up scrap and salvage rail from the right-of-way between Richland and 100-D Area.

Installation of a fire alarm system between Riverland and 100-B Area has been completed, tested, and placed in service.

Railroad track maintenance on all five sections continued in a routine manner with the replacement of defective switch and cross ties; surfacing, lining, and dressing of track; completed removal of 241 BY temporary track; relaid the 221-B track with 100 pound rail; and moved replacement ties from Riverland and Edna tie yards to the low line.

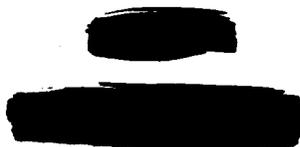
AUTOMOTIVE ACTIVITIES

Area and Village Bus Systems registered a combined increase of 10,101 passengers over September.

Passenger traffic has increased to 100-H Area and regular Shuttle Service within the Area was established October 17, 1949.

A shelter was placed at the 200-East junction for the protection of waiting area bus passengers from Benton City and Prosser.

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Classification ~~_____~~ of ~~_____~~ to

By Authority ~~_____~~ OPERATIONS
OFFICE, NO. ~~_____~~ TECHNICAL DOCUMENT RE-
VIEW BOARD ~~_____~~ H. J. Newton, Chairman

Date: 12-18-51

Transportation Division
~~_____~~

Effective October 18, 1949 a booster bus was added from the Carmichael Junior High School and continuing on the Newcomer route at 3:35 P.M. to provide service for a substantial increase in school children passenger traffic.

Transferred six pick-up trucks and three flatbed trucks to the Richland School District through the Atomic Energy Commission.

Winterizing of all Hanford Operations equipment with Prestone was completed during the month.

The Planning and Methods Section completed its phase of the study on establishing Equipment Rental Rates which has been forwarded to the Accounting Division for final disposition.

The Planning and Methods Section assembled additional data for the request for appropriation to purchase 77 sedans to replace existing 1941-1942 models.

Ten trash wagons were received from the Design and Construction Divisions, repaired, and are ready for assignment.

The Equipment Maintenance Section expended 30 man days in preparing and loading excess equipment at the 3000 Area and White Bluffs.

Tests were made with two GMC 6x6 trucks to determine their ability to travel on sandy terrain with a six ton load. One truck was equipped with regular size 7.50x20 dual tires and the other was equipped with 11.00x18 singles. The truck equipped with 11.00x18 single tires travelled over very sandy terrain with no difficulty while the other truck equipped with standard 7.50x20 dual tires would sink in and stall. It is contemplated that some fire fighting apparatus may be equipped with these new type tires to combat fires in outlying locations beyond the reach of surfaced roadways.

CONSTRUCTION AND LABOR ACTIVITIES

Partial resurfacing of 1131 Bus Terminal Area yard required 133 tons of blacktop material. Crushed and stockpiled 996 cubic yards of 5/8" chips and 548 cubic yards of 3/4" chips. Mixed 1,537 tons of blacktop material. Bladed woods from shoulders and slopes of 20 miles of area roads. Transported 200 tons of coal to the 101 Area.

Expended 3,192 manhours in handling X material in the 101 Area.

Labor and transportation facilities were supplied for Projects C-177, C-192, C-214, C-268, C-271, C-276, C-279, C-291, C-323, C-330, C-331, C-334, C-338, C-340 and Well Drilling Operations prior to the transfer of function of Minor Construction activities.

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

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PROJECT ENGINEERING DIVISIONS

MONTHLY REPORT

OCTOBER 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)	15	8-19-47	\$ 486,000
C-184	Experimental Animal Farm - Parts I & II	86	4-28-49	335,900
C-192	Biology Lab. Bldg. 108-F, Parts I & II	20	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	77	3-10-49	280,600
C-334	P-10 Alloy Facilities	98	1-28-49	242,000
C-340	P-11 Project (Parts I & II)	20	6-28-49	<u>328,000</u>
<u>TOTAL Estimated Cost Active 100 Area Projects</u>				<u>\$ 2,898,900</u>

200 AREAS

C-271	Additional Waste Storage Facilities 241-BY (G.E. portion only - subcontract not included)	85	9-29-48	\$ 50,000
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Project Engineering Divisions

DECLASSIFIED

Projects Authorized & Under Construction (Cont'd)

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	78	(Rev. Dir.) 8-17-49	\$ 91,000
C-337	Dissolver Off-Gas Filtration Facilities (Modified Project Proposal being written)	0	6-22-49	<u>337,000</u>
<u>TOTAL Estimated Cost Active 200 Area Projects</u>				<u>\$ 478,000</u>

300 AREA

C-219	Construction of Additional H. I. Instruments	98	1-27-48	\$ 97,200
C-227	Conversion of Offices to Labs Bldg. 3706 & Construction of 3707-C Change House	99	3-15-48	557,000
C-287	Experimental Metallurgy Lab. Bldg. 3730	60	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)	7	9-24-48	540,000
C-331	Rehabilitation of Bldg. 321	95	1-31-49	227,000
C-338	Nine Tube Test Unit - B, D & F Blocks	35	7-13-49	<u>25,400</u>
<u>TOTAL Estimated Cost Active 300 Area Projects</u>				<u>\$ 1,586,600</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
C-177	115 KV Power Transmission Line	95	8-14-47	1,364,000

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-276	Plant Telephone Project (Part II partially authorized for additional \$101,000)	81	(Rev. Dir.) 9-16-49	\$ 1,333,000
C-291	Security Fences - All Areas	43	10-18-48	441,800
C-279	Improvement to Area Administration Buildings	91	(Rev. Dir.) 5-18-49	167,800
C-333	H. I. Operational Survey Insts.	17	4-20-49	85,000
C-322	Osmose Treatment of Plant Elec. Poles & Replacements Where Necessary	86	2-1-49	154,000
C-341	Additions to Richland Elect. Distribution System	0	9-2-49	<u>173,000</u>
<u>TOTAL Estimated Cost Active Plant General Projects</u>				<u>\$ 4,260,100</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.	70	5-6-49	\$ 13,000
M-713	Flexible Vertical Rod Studies	10	7-19-49	18,500
Med-1	Surgical Wing Air Conditioning - Kadlec Hospital	60	5-5-49	16,100
M-715	IBM Installation for Individual Tube Accounting - 105, B, D, F and H	2	9-15-49	13,400
M-716	Preliminary Engineering & Project Preparation - Parallel Operation of 221 T&B Cells	2	6-24-49	10,000

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Project Engineering Divisions

Informal Project Requests Authorized (Cont'd)

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<u>Request Number</u>		<u>% Phys. Complete</u>	<u>Date Auth.</u>	<u>Est. Cost</u>
Serv-9	Badge House Addition 300 Area (Revised Request in Preparation)	0	12-15-48	\$ 14,500
M-721	Far Side Pile Restraining Clamps	1	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	<u>9,800</u>
<u>TOTAL</u>				<u>\$ 128,400</u>

CURRENT GRAND TOTAL OF AUTHORIZED PROJECT WORK \$ 9,352,000

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. (Held up for modification)	\$ 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	1,340,000
A-1097	C-346	Facilities for Exponential Experiments	391,000
A-1100		Galvanizing & Replacement of Process Tube Nozzles B,D,F & DR	775,000
A-546		Hot-Semi-Works - Engineering Costs	33,250
A-1110		Pile Clearance - Inner Rod Rooms - 105 B, D, F	40,600
E-413		Telemetering and Supervisory Control of Incoming Power	<u>33,700</u>

TOTAL Estimated Cost of Projects Routed for Approval And Authorization \$ 2,830,550

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Project Engineering Divisions

Project Engineering Divisions Area Reports

Status of Engineering Study & Design Work In Progress During the Month of October.

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)	80
A-1077	P-10 Alloy Facilities (Designs for Project C-334)	95
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
A-1093	P-11 Project (Parts I & II) - Designs for Project C-340	60
A-1094	Algae Pilot Filter	90
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	IBM Equipment	85
A-1104	Repairs to 107 Basin	90
A-1106	Far Side Bracing	85

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Project Engineering Divisions

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Project Engineering Divisions Area Reports (Cont'd)

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

100 AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-1110	Pile Clearance - Near Side	85
A-1111	Design 5" Single Hole Cask	100
A-1112	Record Tear - #4 Baffle 105F Downcomer	100
A-1113	Dry Air Supply - Vertical Rod Thimbles	100
A-1114	"H" Pile Survey - As Constructed	100
A-1115	Paper Cutter for P-10	100
A-1116	Health Monitoring & Storage Fac. 111-B	20
A-1117	Can Opener Improvements	15
A-1118	Reinforce 105-F Downcomer	10
A-1119	Coal Metering Eqt. 100 - 200 - 300	0
2266	As-Built Drawings <u>200 AREAS</u>	(Continuous Program)
2279	Prepare Project for Regasketing Facilities 221 T&B	85
2467	Engineering Contact on New Processes	50
2490	Prepare Project for Iodine Removal (Postponed pending results of filtration studies)	90
2491	Design Evaporation Facilities First Cycle Waste	70
2493	Check Elevation of Inlet Duct Bldg. 291-B	40
2501-R	Prepare Project for Complete Parallel Operation Bldgs. 221T-B	10
2502	Recommend Portable Ventilation Equipment for Dry Box Hoods Bldg. 234-5	60
2503	Prepare Project for Duct Level Floor Bldg. 234-5	60

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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 October.

200 AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
2509	Design a Sparger for the Reactor in Hood #5 Bldg. 234-5	100
2510	Prepare Project for Paneled Hood in Rear of Hoods 4 to 8 - Bldg. 234-5	80
2514	Make Engineering Study of "AA" Fiberglas for Project C-337	75
2515	Prepare Engineering Report on Use of New Type Steam Jet - Bldg. 221 & 224	30
2516	Design Trench Jumper From Nozzle 30 to Nozzle 70, Bldg. 221-T	100

300 AREA

A-3002	As-Built Drawings	(Continuous Program)
A-3060	Temporary Melting & Fabrication Bldg. (Designs for Project C-287)	100
A-3061	Increased Ventilation - 313 & 314 Bldgs. (Designs for Project C-330)	70
A-3062	Install Rolling Mill - 300 Area (Designs for Project C-339)	18
A-3066	Revise Maps - 300 Area Water and Sewer Systems	100
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 BDF Type Blocks. (Designs for Project C-338)	90
A-3076	Prepare Project for Chip Pickling and Metal Fines Recovery	5

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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 October.

300 AREA (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-3077	Prepare Project for Three Automatic Screw Machines 313 Building	45
A-3080	Design and Estimate Loading Platform & Acid Storage Area, Bldg. 3706	-Cancelled
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-3085	Study High Water Tank Riverland	30
A-546	Prepare Project Redox Hot Semi-Works	1

GENERAL PLANT AREAS

828-R	Designs for Telephone Bldg. 702 Alterations - Project C-138	99
972-R	Survey River Bottom - 100 B, D & F Areas	100
A-420	As-Built Drawings of Plant Railroad	98
A-452	Plant Telephone Project (Design work for Project C-276)	95
A-526	Special Field Information for 300 Area As-Builts	90
A-532	Design Work for Project C-192 - Construction of Biology Lab. - Bldg. 108-F, Parts I, II & III	70
A-533	Architectural Standards	2
A-536	Additional Capacity for Sewage Lift Pumps Riverland	60

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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 October.

GENERAL PLANT AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
A-537	Survey for Maintenance of R.R. Inside Restricted Areas	50
A-541	Design & Survey for Railroad and Spurs to Redox Plant (Revisions to be made)	50
A-542	Addition to Bldg. 622 - Meteorology Bldg.	10
A-543	Pistol Range Sanitary Facilities, Arsenals, Fire Protection, etc.	0
A-545	Design for Oil Burner for Heating Boiler - Riverland	100
A-546	Prepare Project for Engineering Costs - Hot Chemical Works 200 E Area	100
A-548	Prepare Project for Solvent Storage Facilities - 300 Area	10
A-549	Prepare Project for Cylinder Storage Dock - 300 Area	10
A-550	Design for Addition to Bldg. 3745	50
A-554	Sketch & Estimate for Moving B-Y Badge House to 222-U	10
A-555	Prepare Informal Project Request to Cover Engineering Costs for Aquatic Laboratory 100-F Area	5
A-556	Study Application of Asbestos Shakes for Bldgs. 272-E-W	10
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 BDF	20
E-403	Install Traffic Signals at Richland Railroad Crossings	75

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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 October.

GENERAL PLANT AREAS (Cont'd)

<u>E. R. No.</u>		<u>% Engineering Complete</u>
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
941	Designs for Experimental Animal Farm - Project C-184	100

ENGINEERING STUDIES

<u>WORK COMPLETED</u>		<u>DATE</u>
E. R. 4361	Chip Recovery Method	10-7-49
E. R. 4365	Evaluation of Welding Layout Proposal	10-17-49
<u>WORK ADDED</u>		<u>DATE</u>
E. R. 4365	Evaluation of Welding Layout Proposal	10-12-49
E. R. 4369	P.E.D. Safety Manual	9-29-49
<u>WORK SCHEDULED</u>		<u>% COMPLETE</u>
E. R. 4336	Review Oil Coding System	99
E. R. 4346	Welding Line Analysis - Bldg. 313	65
E. R. 4347	Frost Test Line Improvement - Bldg. 313	90
E. R. 4362	Mfg. Divisions Personnel Analysis	25
E. R. 4363	P.E.D. Personnel Analysis	75

Project Engineering Divisions

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ENGINEERING STUDIES (Cont'd)

<u>WORK SCHEDULED</u>		<u>% COMPLETE</u>
E. R. 4365	Methods Studies, "P" Division, 300 Area	
	Rod Machining	99
	Bronze Pot Cycle Changes	80
	Machining Scrap Reduction	95
	Canned Slug Reject Reduction	99
	Welding & Inspection Line Analysis	95
	Slug Canning Line Analysis	60
E. R. 4366	Welder Classification Tests	90
E. R. M714	Electrical Power Conservation	65
Poutine	Civil and Architectural Standards	-
E. R. 4368	Lubrication Specifications - Bldg. 3706	15
E. R. 4369	P.E.D. Safety Manual	0

BACKLOG SUMMARY

	<u>Work on Hand 9-30-49</u> <u>Estimated Man Days</u>	<u>Work on Hand 10-31-49</u> <u>Estimated Man Days</u>
Studies	304	312
Project & Design	<u>7,700</u>	<u>8,402</u>
TOTAL	8,004	8,714

TECHNICAL DIVISIONS

October 1949

**DECLASSIFIED
WITH DELETIONS**SUMMARY

11-10-49

Pile Technology Division

Technical tests relative to H Pile start-up were completed during the month. These tests included "flashing" of the dry pile and experimental operation at 100 MW. The flashing tests demonstrated that an increase in graphite temperature results in a decrease in pile reactivity if the pile has lost cooling water. This observation reduces the requirements of the safety control system and eliminates the need for cadmium plated splines to supplement the vertical rod system in the present piles.

The carbon dioxide in the D Pile atmosphere was increased to 43% on October 31 as the first step in a planned increase to 60%. The elevation of the top of the B Pile has decreased about 0.05 inches during eleven weeks of operation with 60% carbon dioxide.

For the first time, a core sample was mined from a process tube block. The sample was adjacent to Tube 2282-D, and had an accumulated exposure of 3300 MD/CT. X-ray studies indicate that the graphite at the bore has expanded more than twice as much as the graphite at the outer surface of the block.

Lines 3 and 4 of the P-10 Project were both in operation during the month with an average operating efficiency of Slugs with 8 months exposure were extracted without difficulty.

AEC approvals of the exponential pile project and Part II of the critical mass project were received during the month.

Separations Technology Division

Major emphasis has continued to be placed on improving Separations Plants material balance accountability. A recent Acid Wash Run at B Plant accumulated 52% of an average run through the Canyon Building and corrective measures are being applied to minimize a recurrence. The 221-T Plant has been converted to semi-parallel operation with no operating or process difficulties encountered. Plant assistance studies have helped recover an off-standard Purification batch of product in the 234-5 Building. The largest single obstacle remaining in the path of attaining successful and continuous operation in the 234-5 Building has been the coating operation, to which concentrated improvement studies are being applied.

In Redox development, twenty-six additional column runs were completed during the month, involving studies of a 5-inch pulse column, uranium stand-in behavior for plutonium and fission products, and raw vs. pretreated hexono. A trial run of the tentative flow sheet for Redox feed preparation from

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WITH DELETIONS**

1212976

79

Technical Divisions

simulated metal waste was carried out in the newly completed "cold" pilot line. The G.E. & C. I. Submerged Pump No. 2 has successfully passed four months of continuous operation in aluminum nitrate solution and several other pumps are progressing through shorter testing. Concrete blocks flame-sprayed with polyethylene have thus far shown high-resistance promise on corrosion tests now in progress.

In the research laboratory, trial runs on the simulated recycling of meta-thesis caustic in the preparation of Redex feeds from metal waste have given phosphate purifications identical with no recycling. A satisfactory point of return for recycled uranyl phosphate has also been developed. Scouting studies of product behavior and stability in the Tributyl Phosphate System have been continued. A method has been developed for reducing chromium interference in proposed plutonium rework methods. A number of alternate catalysts and operating conditions for ruthenium volatilization has been investigated. Continued studies of Redex 234-5 coupling methods have indicated potential plutonium losses as low as 0.1% in the phenylarsenate method.

In the 234-5 process development laboratory, study of the preparation of sulfate-free peroxide has been extended to include the effects of acid and peroxide concentration, as well as washing methods, on plutonium peroxide yield. Scouting studies have been initiated on the recovery of plutonium from reduction slag and crucibles.

Stack gas treatment studies have demonstrated the necessity of preventing condensation in the proposed "Fiberglas" dissolver off-gas filter. A series of silver reactor iodine-removal runs has demonstrated at least 99.5% iodine removal efficiency throughout five consecutive dissolvings. New test data are being obtained on the pilot model electrical precipitator. A study of the off-gas flow rates has been initiated at D Plant.

Metallurgy & Control Division

Experimental equipment for bronze dipping four slugs at a time instead of in pairs was reconditioned and made ready for extensive trial. The successful use of this equipment will increase the certainty of complete transformation of the uranium structure, and simultaneously allow reductions in net time cycle and temperature of the bronze bath. Metallographic studies indicate insignificant grain growth in doubling immersion time at the present bronze bath temperature of

P-10 alloy production continued, with two significant developments: (1) Exposure of the bare slugs to atmospheric moisture is being minimized by inserting the freshly machined slugs immediately into previously etched, freshly desiccated process cans which are immediately closed with welding discs; and (2) slug reactivity measurements in the Test Pile are giving a valuable cross-check on lithium content, and disclose inconsistencies in analytical results.

Battelle made good progress on their study of low temperature rolling of uranium, and it is expected that reliable data for use in connection with the 300 Area Rolling Mill Project (C-339) can be furnished the Project Engineering Division in November.

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Technical Divisions

HW-14916

Analytical control personnel in the 100 Areas were moved from 100-D to the new laboratory in 100-H. The improved convenience and facilities of this new laboratory will allow the increased work load attending start-up of the new area to be handled without additional analytical personnel.

Preliminary estimates of the quantities of process material necessary for each of the Rala control analyses were supplied the Design Division for use in determining shielding requirements of the Rala laboratory facilities.

Completion of investigations of the carrier concentration method for the spectrographic determination of impurities in 234-5 Process materials has provided an independent procedure for checking certain results from the cup-ferron-copper spark method. Preliminary evidence indicates that the carrier concentration method is more reliable, and thus provides an improved means for the determination of several elements.

A standardized printed cover, binding, and inside format for research and development reports issued by the Technical Divisions was adopted and placed in use. The Information Group also participated in project-wide planning to achieve further standardization and improvement in procedures for dispensing classified and unclassified technical information. Consultations with Kellogg were directed toward correlated control over classified document issuance and inventory in all sub-contractor relationships.

ABG

ABG:ncs

DECLASSIFIED

November 10, 1949

PILE TECHNOLOGY DIVISIONOCTOBER, 1949VISITORS AND BUSINESS TRIPS

Miles A. Libby, Atomic Energy Commission, Washington, D. C. , was here October 31, 1949 to discuss shielding.

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

F. E. Kruesi was in Bremerton, Washington on October 5, 1949 for consultation on P-11 equipment fabrication.

R. L. Dickeman was in Washington, D. C. October 12 through 15, 1949 to attend meeting of the A.E.C. Shielding Group. He visited Argonne National Laboratory, Chicago, Ill. October 17, 1949 to discuss shielding.

D. F. Snoeberger, E. A. Eschbach, P. F. Gast, and D. E. Davenport visited Oak Ridge National Laboratory, Oak Ridge, Tenn. October 23 through 26, 1949 to attend the Information Meeting.

P. F. Gast visited Oak Ridge National Laboratory, Oak Ridge, Tenn. October 27 and 28, 1949 for technical consultation on the K-25 critical mass experiments.

D. E. Davenport visited Argonne National Laboratory, Chicago, Ill. October 27 and 28, 1949 and Brookhaven National Laboratory October 31 and November 1, 1949, to discuss standardization between other standard piles and the standard pile proposed for the exponential pile program. He also visited the A.E.C. Operations Office in New York City October 31 and November 1, 1949 to discuss procurement of sources.

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Pile Technology Division

ORGANIZATION AND PERSONNEL

	<u>September</u>	<u>October</u>
Pile Physics Section	35	34
Pile Engineering	32	33
P-10 Project	7	7
Administrative	<u>3</u>	<u>3</u>
	77	77

One Lab Assistant D was terminated during the month and one Lab Assistant D was hired.

PILE ENGINEERINGGraphite Expansion

The elevation of the center of the Top of the B Pile has decreased 0.04 to 0.06 inches since reaching 60% carbon dioxide on August 15, 1949. The Far Side also moved inward slightly during the same period.

The carbon dioxide in the D Pile atmosphere was increased from 40% to 43% on October 31 as the first step in a planned increase to 60%. Measurements of expansion at the D and F Piles show no change from previously described trends within limits of precision of the data.

Graphite Monitoring

A graphite core sample about 7/16 inches in diameter was cut from tube 2282-D over the A test hole. This tube has been a metal tube since startup and has an accumulated exposure of approximately 3300 MD/CT.

X-ray measurements of the Co-spacing were made along the length of this sample with the following results.

<u>Distance from bore (inches)</u>	<u>Co-spacing (\AA)</u>	<u>X-ray Expansion (%)</u>	<u>Equivalent physical Expansion (%)</u>
0	7.67	14.5	1.87
0.35	7.43	10.9	1.34
0.8	7.26	8.35	1.00
1.2*	7.12	6.26	0.85

* surface of tube block

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Pile Technology Division

The equivalent physical expansion was calculated from the relationship between X-ray and physical expansion previously obtained on test hole and capsule samples.

It is believed that about 50% of the difference in expansion from the bore to the surface is caused by the difference in flux and the remainder by the difference in temperature at the two points.

The importance of higher temperatures in reducing damage is also illustrated by the fact that the graphite at the bore has expanded in 3300 MD/CT no more than capsule samples did in about 1400 MD/CT. The flux is about the same in the two locations. Similarly the graphite at the surface of the block expanded in 3300 MD/CT no more than test hole samples did in 1000 MD/CT. The test hole samples are exposed at a slightly lower flux and at about 25°C.

H Pile Tests

Two special thermocouple slug assemblies were charged into the center of Tubes 2674-H and 2680-H after completion of charging H Pile to dry critical. These assemblies were used to measure the temperature of the slugs during dry pile temperature coefficient tests. After the tests the thermocouple slug assemblies were discharged and are being held for possible future use.

Thermocouple slug data together with the standard graphite-thermocouple data were used to calculate heat transfer coefficients between uranium and graphite and between filler blocks and tube blocks. Using these heat transfer coefficients the calculated maximum graphite temperature at 400 MW is about 220°C. A decrease in the thermal conductivity of the tube blocks by a factor of ten with irradiation will increase this temperature by 90°C.

Vertical Thimble Temperature

A thermocouple was installed in the No. 26 vertical thimble of the F Pile for a two week period. The temperature of the aluminum was 15 to 20°C above the graphite temperature as measured by 13 G thermocouple. The maximum aluminum temperature reached was 296°C.

Previous estimates of maximum pile power level when thimble temperature is limiting were based on the thimble being at the same temperature as 13G. These higher measured temperatures will, therefore, necessitate a reduction of 5 to 10% in the estimated maximum power levels, however, this will have little effect at present operating conditions.

Preliminary creep data from Battelle has shown that the creep rate of 2S aluminum at 450°C and 60 psi is 0.0001% per hour for the first 500 hours. This result is very encouraging because the rate is somewhat lower than expected from the extrapolation of data at higher stresses. However, additional data under these conditions and at other temperatures from 350°C to 450°C must be obtained before the present operating limitations can be revised upward.

Pile Technology Division

DECLASSIFIEDProcess Tube Corrosion

Further metallurgical examination of the corroded process tube, 0574-B, described last month has shown that in no place has the corrosion proceeded beyond the 72S cladding. This finding indicates that this type of corrosion which has been observed in many tubes by borescoping is not as serious as feared.

About thirty 2S tubes which have no 72S cladding were installed during the past. The corrosion in these tubes is now being investigated. Borescopic examination of one of these tubes, 3867-D which has been in service for 25 months, has shown corrosion product deposition similar to that observed on cladded tubes.

Induction Heated Transformed Metal-Production Test 105-277-P

All the slugs for this test have been charged.

Irradiation of High Nickel Metal-Production Test 103-224-P

The last tube of metal exposed under this test has been discharged at an exposure of 400 MD/T. The behaviour of this metal has been similar to that of other Group V metal and it, therefore, appears that nickel in the range of 27 to 175 ppm does not affect pile performance of uranium slugs.

Corrosion Rate at Elevated Temperatures - Production Test 105-103-P, Suppl. A

This test, which is designed to provide information on corrosion rates at outlet water temperatures as high as 90°C, has been approved and started at the F Pile. All the orifices have been changed and the Van Stone flanges have been examined.

Van Stone Inspection on H Pile

A complete inspection has been made on 52 Van Stone flanges on the H Pile. A series of 16 measurements were made on each control flange for reference use on future inspections.

Additional Pile Control

Tests with the mock-up facility for gaining additional pile control have been completed. Consideration is being given to installation of a similar system on ten fringe tubes of the D Pile.

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HW-14916

Pile Technology Division

Vertical Thimble Corrosion

A more extensive and detailed examination of the nature of the corrosion observed in vertical thimbles has shown that the corroded area extends from about one foot above to four inches below the end of the rod guide. A qualitative test has shown that the corrosion products are partially soluble which indicates that not all of the corrosion is galvanic in nature. These findings indicate that the corrosion can be eliminated only by preventing the condensation of water in the annulus between the rod guide and thimble. The design of equipment to accomplish this by supplying dry air to the thimble is about 75% complete.

F-10 Project

Tritium extraction has proceeded on Lines 3 and 4. During October the operating efficiency on two lines has been

In these extraction runs major attention has been given to developing a furnace heating cycle which will permit efficient outgassing of all of the slugs at low temperatures and smooth release of tritium at higher temperatures. The last eleven runs in which a tentative procedure was followed have given excellent results. The average tritium purity obtained in these runs was above Studies on hydrogen removal from unirradiated slugs indicate that it should be possible by careful outgassing to remove all but a few of the hydrogen from irradiated slugs without excessive loss of tritium.

Slugs with 8 months exposure were extracted without difficulty. All slugs will be irradiated for 8 months in the future and pilot tubes will be irradiated 9 and 10 months.

PHYSICS

H Pile Start-up

A large part of the effort of the Physics Section was diverted to shift coverage of the H Pile during start-up. This coverage involved about seven man months spent in the area.

The dry pile first became critical on October 6 with 308 tubes loaded in a rectangular pattern 20 tubes wide with an effective height of 15.76 layers. For comparison, the B Pile required 400 tubes to become critical with no water in the tubes. A quantitative comparison of the reactivity of the H Pile with that of previous piles is in progress.

Following the attainment of a chain reaction, a test was run to determine the reactivity temperature coefficients of the dry lattice. Results were: a graphite coefficient of $-0.8 \text{ ih}/^\circ\text{C}$ and a metal coefficient of $-0.4 \text{ ih}/^\circ\text{C}$. The negative graphite coefficient is in contrast to the positive coefficient which exists in the piles when the process tubes contain water. The existence

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File Technology Division

of a negative coefficient, in agreement with pre-test expectations, reduces the requirements on the safety control system and will eliminate the need for cadmium plated splines to supplement the vertical rod system in the present piles.

The strength of a single vertical rod was determined by finding the number of additional layers of loaded tubes necessary to again bring the pile to the critical condition after lowering of one rod through the center of the dry pile. It was found that approximately 63 additional tubes were required to compensate for the one vertical rod.

It was found that 23 vertical rods, or 20 vertical rods plus all 15 horizontal rods, were sufficient to control the fully loaded dry pile, and that 12 vertical rods or all 15 horizontal rods were sufficient to control the fully loaded pile after water had been admitted to the tubes.

A test to determine xenon transient characteristics was begun on October 21. The pile was operated at 100 MW until October 27, with occasional undesirable scrams, and was then shutdown to a very low level and the critical condition was followed. At month-end the xenon decay test had been concluded, and the pile was shut down for poison adjustments prior to operation at 275 MW.

Additional data were obtained on dry augmentation distance (using copper foils) and brief periods of operation at 3 MW and 10 MW were conducted. The data obtained are being analyzed and will be reported separately.

IBM Activity

The system for punching outlet tube temperatures directly on IBM cards, to permit tube-by-tube product accounting in the H Pile, is nearing completion. Meanwhile, chart records of tube temperature traverses are being obtained at frequent intervals and are being retained for subsequent transposition to IBM cards.

IBM card tables, involving 36,900 cards and comprising various Bessel functions, exponential functions, and a square root function, have been completed. These cards will facilitate subsequent mathematical handling of data and problems by use of IBM machines.

Critical Mass

Authorization was received on October 12 to proceed with Part II of the P-11 project, covering fabrication of the first Test Unit. Site preparation continues. The design of the No. 1 Test Unit is virtually complete and fabrication of the cylindrical reactors is nearing completion. Neutron sources have been ordered, and foils of U-235 for use in a fission counter have been received.

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A detailed study of the hazards involved in an uncontrolled super-critical P-11 reaction has been conducted and will be reported separately.

305 Test Pile Activity

Unsuccessful efforts have been made to improve the somewhat scattered correlation between reported chemical analysis of lithium-aluminum alloy slugs and test pile reactivity effects.

Testing of heats of graphite from regular production has been completed, though small lots of special material remain to be tested.

The control effectiveness of aqueous potassium borate solutions proposed for additional control of production piles was tested over a concentration range from 0.5% to 10% salt.

Shielding

Measurements of the attenuation in the Hanford shield have been completed. Results will be reported separately.

Consideration is being given to the use of solutions, circulating through a pile, to provide nearly monochromatic sources of gamma radiation at high intensity.

Lattice Design Program

Approval of the exponential pile project was obtained on October 31. Neutron sources are being procured, procurement lists have been prepared, instrument development is progressing satisfactorily, and work is progressing on standardization of Geiger counters and fabrication of a proportional counter amplifier.

Reactivity

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

	<u>B Pile</u>	<u>D Pile</u>	<u>F Pile</u>
In rods	55	79	49
In Special Requests	399	372	413
In Plant Assistance Irradiations	0	20	0
In Lead-Cadmium Columns	0	0	0
In Bismuth Columns	117	109	114
In dummy columns	0	3	32
In xenon	474	504	462
In overall coefficient	<u>-200</u>	<u>-200</u>	<u>-235</u>
Total cold, clean reactivity	845	887	835

Pile Technology Division

The B Pile lost 6 inhours during the month. The D Pile lost 9 inhours during the month, though a change in the reported contribution of the overall coefficient in conformance with recent experience results in an apparent gain of 26 inhours. The F Pile lost an apparent 35 inhours during the month; this is close to the true reactivity loss caused by metal discharges, for re-evaluation of the effect of some of the special loadings introduced an apparent loss of 9 inhours which was offset by a 10 inhour gain resulting from draining water from the test facility in the B Hole.

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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November 10, 1949

SEPARATIONS TECHNOLOGY DIVISIONOCTOBER, 1949VISITORS AND BUSINESS TRIPS

Prof. M. R. Fenske, Consultant from the Pennsylvania State College, visited the Hanford Works from October 11 through 13 for Redox consultations.

Prof. G. W. Watt, Consultant from the University of Texas, visited this site for inspection and consultation on the Separations problems from October 20 through 24.

Prof. M. Calvin of the Radiation Laboratory, University of California, visited the Hanford Works on October 13 and 14 for inspection of research and development facilities.

Visitors from the General Engineering & Consulting Laboratory, Schenectady, included D. H. Marquis from October 12 through 14 and D. E. Garr from October 12 through 17 for 234-5 consultations.

D. A. Brown from the Los Alamos Scientific Laboratory visited this site from October 24 through 28 for 234-5 consultations.

C. A. Rohrman and R. E. Smith visited the Mallinckrodt Chemical Works, St. Louis, Mo., on October 17 and 18 for consultations on uranium oxide manufacture.

F. J. Leitz and F. W. Woodfield visited the Oak Ridge National Laboratory from October 18 through 20 for Metal Recovery conferences.

Members of this division who attended the Oak Ridge Information Meeting from October 24 through 26 were: K. M. Harmon, W. E. Roake, W. A. Burns, A. G. Blasewitz, R. E. Burns, J. L. Schwenneson, and M. H. Curtis.

Visitors to the Argonne National Laboratory included W. E. Roake and W. A. Burns on October 27 and K. M. Harmon on October 27 and 28 for consultation and inspection of the Redox operations.

ORGANIZATION AND PERSONNEL

Personnel totals in the Separations Technology Division are as follows:

	<u>September</u>	<u>October</u>
Administration	2	2
Special Assignment	3	3
Process Section	25	25
Development Section	93	95
Research Section	<u>31</u>	<u>33</u>
	154	158

Development Section: One Chemical Engineer was transferred from the Design Division and a Steno-Typist B was added as a new employee.

Research Section: Two new hires were a Chemist and a Steno-Typist B.

PLANT ASSISTANCE

Canyon Buildings

The accountability run basis solution tank (6-3) at B Plant was recalibrated October 17, 1949. The calibration slope (pounds per inch), as determined by the recently installed manometer, checked that of a water-filled manometer to 0.16%. The slope determined by the ring balance checked that of the water manometer to 0.36%. The new slope (water manometer standard) was 1.34% lower than that of the original calibration. The use of the new calibration and the correction of the dip-tube heel for the specific gravity of the 6-3MR solution will lower the B Plant material balance by approximately 0.7% at the present weight level of the 6-3 MR solution at the time of sampling.

Piping changes were made at T Plant to convert the Canyon Building to semi-parallel operation. Under this plan, Sections 7, 13, and 14 will be in parallel with Sections 8, 16, and 17 for extraction and the first decontamination cycle. The second decontamination cycle will be performed in Sections 18 and 19 with reduction in the 18-3 Tank prior to the product precipitation in the 19-1 Tank. No operating or process difficulties have been encountered in processing subsequent runs. An effective time cycle of 12 to 12-1/2 hours is now being realized for the longest step in the process.

A recent Acid Wash Run at B Plant accumulated 52% of an average run through the Canyon Building. The first-cycle product precipitator spray was replaced and a portion of the metal waste solution is being recycled, following the extraction centrifugation, in Section 8 in an attempt to lower the hold-up at these points. The success of these measures has not yet been determined.

Concentration Buildings

Harshaw Specification 102 single-distilled anhydrous hydrofluoric acid of analysis approximating that guaranteed has been used in runs under Production Test 224-T-12. No significant difference in plant performance was observed between runs made with the test or double-distilled acid. Data from forty runs made with Specification 102 acid selected for high purity, blended with

Separations Technology Division

22% double-distilled acid, confirmed earlier Production Test runs in that plant performance was not significantly different from that of runs made with double-distilled acid.

The Acid Wash Run, received from the B Plant Canyon Building containing 52% of an average run, was processed through the Concentration Building with an additional accumulation of only 2%. An F-Cell (Metathesis) acid flush made earlier in the month contained 10% of an average run.

234-5 Building

The average conversion in Hood 8 was greater than 95% for the month. Four batches have required refluorination; none of the refluorinations have increased the conversion by more than 2%. Since the purge air has been shut off in the fluorination cycle, the process air rotameters have become slightly etched. Means of eliminating this etching are currently being investigated.

The strike of X-9-10-39 was inadvertently drawn into the filter head tank of Hood 7. By flushing back into the reactor, 41 units of material were recovered; 16 units were recovered by processing the filter paper. The filter head tank and supernate storage tank were flushed with a potassium permanganate-nitric acid solution, followed by hydrogen peroxide-nitric acid solution, 60% nitric acid, and two distilled water washes. The washes recovered a total of 131.3 units of material. Total material recovered from Hood 7 was 188.3, of which 160 units came from X-9-10-39. The washes from Hood 7 were sent to Hood 30 for recovery. After evaporation of the solution, a back-up of caustic from the scrubber entered the evaporator. The reason for the back-up is not known. The caustic has been neutralized with nitric acid, the scrubber system flushed with water, and evaporation of the solution in the evaporator started. The concentrate will be returned to the 224 Building. An investigation is being made to determine, and eliminate, the cause of the back-up.

A series of tests were conducted in Hood 10 using segregated and unsegregated material from Hood 17. There was no significant difference in the results of the 12 tests. Conditions of the test are not sufficient to resolve the question of segregation and more work is indicated.

Better results are being obtained in the Hood 18 operation, resulting in a fair degree of correlation of operations in Hoods 19 and 20. Bromobenzene density determinations are being made twice weekly until the rate of the change is known.

No dimensional rejections were made during the month, but faulty jacketing continued to be a major problem.

The electrolytic test has been very efficient in locating defects which poppy survey and smears did not disclose. T. K. Seaman of Los Alamos spent a week at Hanford assisting in coating operations.

The neutron counting apparatus has been assembled, calibrated, and used for one preliminary count with the help of D. A. Brown of Los Alamos.

Shielding has been installed around the radiography source to bring the radiation level in the adjacent rooms down to a maximum of 10 mr/hr. Exposure times have been established for this work by radiographing shapes and evaluating the resolution by penetrameter shadows.

FEDOX DEVELOPMENT

Solvent Extraction Studies

Twenty-six solvent-extraction studies were completed during October, including 12 studies in a 5-in. i.d. 28-tray pulse column. In addition, the first study to prepare solvent-extraction feed from simulated underground waste (supernate) was carried out on a semiworks scale, processing 12 lb. of U Metal/26-in. centrifuge-day. New information resulting from these studies is summarized below:

- 1) Shakedown runs in a 5-in. diameter pulse column operating as a IA simple extraction section (HW #1 Flowsheet) have demonstrated the following (using 28 perforated plates spaced 2-in. apart, organic feed stream pulsed):
 - a) H.E.T.S. values in the range from 0.6 to 0.8 ft.
 - b) H.T.U. ("overall water-film") values in the range from 0.35 to 0.55 ft.
 - c) Overall plate efficiencies of approximately 22%, corresponding to Murphree plate efficiencies (water film basis) of approximately 30%.
 - d) IAW uranium losses ranging from 0.02 to 0.7% of the feed uranium, for a 4.7 ft. "packed height".
 - e) Uranium processing rates from approximately 0.4 to 1.5 short tons/24 hr.

- 2) Shakedown runs using the above unit as a IC pulse column have demonstrated the following:
 - a) H.E.T.S. values in the range from 1.8 to 2.2 ft.
 - b) E.T.U. ("overall hexone-film") values in the range from approximately 0.5 to 0.7 ft.
 - c) Overall plate efficiencies of approximately 9%, corresponding to Murphree plate efficiencies (hexone-film basis) of approximately 25%.
 - d) ICW uranium losses ranging from 0.02 to 0.13% of the feed uranium.
 - e) Uranium processing rates from approximately 0.4 to 1.0 short tons/24 hr.

- 3) The above H.E.T.S. and H.T.U. values for both the IA extraction section and the IC Column are approximately one-third of the corresponding values for 1/2-in. by 1/2-in. stainless-steel Raschig rings.

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- 4) For the IA Pulse Column, the lowest H.E.T.S. and H.T.U. values occurred at a volume velocity (sum of both phases) of approximately 800 to 1000 gal./ (hr.)(sq.ft.), as reported previously by the Chemical Research Section for a 1-in. diameter pulse column, but the minimum H.E.T.S. in the 5-in. column was 0.6 ft. compared to approximately 0.3 ft. in the 1-in. column. Although further studies in the 5-in. column may arrive at conditions giving a lower minimum H.E.T.S., the above data point to a scale-up factor and indicate that pulse columns larger than 5-in. diameter may have to be tested before firm specifications can be written for plant-scale units.
- 5) Flooding capacity in the 5-in. pulse column is a function of both pulse frequency and amplitude, but flooding capacities of 1500 gal./ (hr.)(sq.ft.) for IA and 1400 gal./ (hr.)(sq.ft.) for IC have been demonstrated at a frequency of 50 cycles/minute and an amplitude of approximately 0.4 in. movement in the column. Within several-fold ranges of amplitude and frequency it appears that a pulse column will flood when the volume being pulsed per unit of time (sum of the upward and downward pulses in the column) does not equal or exceed the volume of the influent streams (sum of both phases) to the column.
- 6) Using uranium as a stand-in for plutonium in IIA and IIB Column runs (5-in. diameter column packed with 1/2-in. Raschig rings), H.T.U. values of 2.6 to 3.3 ft. in IIA extraction section operation ("overall water-film" basis), and 2.4 to 2.6 ft. in IIB operation ("overall hexone-film" basis) have been demonstrated. Flooding capacities were, respectively, 1800 and 1550 gal./ (hr.)(sq.ft.), sum of both phases, for IIA and IIB operation.
- 7) Using uranium as a stand-in for fission products with distribution ratios (E_D^h) of approximately 0.07 and 0.25, respectively, H.T.U. ("overall hexone-film") values of 2.0 and 1.7 ft. were demonstrated for 13.7 ft. of 1-in. by 1-in. Raschig rings in an 8.42-in. diameter column. These data help to confirm the expected decontamination performance of the plant columns.
- 8) From two studies in a 3-in. glass IA Column packed with 1/2-in. by 1/2-in. stainless-steel Raschig rings, the H.T.U. using pretreated hexone was only 0.1 ft. higher than when raw hexone (washed with 2 to 5 wt. % aqueous soda ash solution) was used. Although this difference is not considered significant it confirms a similar small difference noted previously using the A.N.L. June 1, 1948, Redox Flowsheet.
- 9) Two studies in the above 3-in. glass column at IS Column rework conditions indicated smooth operation but resulted in uranium waste losses of approximately 20%. Additional studies may demonstrate that this loss can be decreased by increasing the extractant/aqueous flow ratio. The flooding capacity for 1/2-in. Raschig rings was 2450 gal./ (hr.)(sq.ft.), sum of both phases.

Waste Metal Recovery Studies

Removal of PO_4 from simulated waste supernate using the sodium uranate precipitation process was satisfactorily demonstrated during the first semi-works run, with a final U/ PO_4 mole ratio in the ISF of 300. However, recycle uranium phosphate was excessive (28% of the feed uranium), as was uranium loss in centrifuge supernates and washes (13%). Further work is required to improve centrifugation and cake removal.

Separations Technology Division

DECLASSIFIEDConstruction and Maintenance

Completion of Project C-331-C, 321 Building Ventilation Revisions continues to be held up by a delay in the arrival of the main blower motor starter. The atmosphere Gas Converter for the Scale-Up Inert Gas Generator, Project C-331-D, has arrived and installation is in progress. It is estimated that this project is 60-65% complete. Remaining work consists of minor piping and electrical work.

The revisions to Cell "B" equipment to permit studies on the recovery of uranium (diuranate precipitation method) from simulated metal waste solutions were completed during the month and the equipment was activated. Three shake-down runs made to test general operability indicated the need for improved cake removal facilities. Additional sprays and a high pressure (300 psi) pump are being installed to improve cake removal. Mechanical functioning and flow control in general were satisfactory.

The pulsing mechanism was readied for operation and tied in to the 5-inch column during the month. A new 300 gallon per hour steam condenser for producing Scale-Up distilled water was completed and put into operation. Preliminary tests indicate a 180-200 gallons per hour rate, but maximum capacity has not yet been tested. The 26-inch Bird Centrifuge which was decontaminated for use at SPRU was crated and shipped on October 14, 1949. Auxiliary centrifuge equipment, including a thermohm, tachometer, vibration meter and microphone speaker, were shipped with the machine. Agitation difficulties initially experienced in revised Demonstration Unit solvent tanks have been overcome by changes in location and type of agitator.

Operation

Waste metal recovery studies were initiated during the month. Three shake-down runs were made to test mechanical operability, flow control, and skimmer settings. One flowsheet run on waste supernate was completed. The shake-down runs and flow sheet run indicated satisfactory diuranate precipitation, digestion, and rate control during centrifugation. There was evidence of a small amount of carry-over of solids into the effluent during centrifugation. Considerable difficulty has been experienced with cake removal, and steps are under way to correct this condition, as mentioned above. Metathesis digestion and centrifugation were satisfactory. Some difficulty has also been experienced with removal of metathesis cake by use of acid. Acid digestion of the metathesis cake proceeded satisfactorily, but pointed out the need for some revision in the digestion tank vent system. Over-all processing rate of the uranium was low.

Demonstration Unit columns continue to perform satisfactorily in cascade operation. On runs during the month, rate control was excellent at normal rates. Wide rate deviations from flow sheet rates during Rework Studies required tie-in of Scale-Up pumps to Demonstration columns for aqueous feed and waste streams. Results were satisfactory. One run was interrupted temporarily by appearance of precipitate in the aqueous feed. Formation of the precipitate was traced to use of an old supply of ANN which had become excessively acid-deficient in storage. The situation was remedied by adjusting the solution acidity.

Although two 8-in. column Scale-Up runs were completed without operating difficulty, the balance of the month on Scale-Up Equipment was devoted to 5-in. pulse column and packed column studies. Operation of this column as a pulse column has been satisfactory, and the following operating highlights are cited. Rate control of either the pulsed or normal streams is apparently unaffected by the pulsing when rates are within the normal range of the instruments. There is no apparent effect on the operation of the pumps. Two of the pulsing bellows failed in service due to leakage, but were replaced without any adverse effect on the operation. Bellows failure was traced to a minor mechanical defect in the pulsing mechanism design. Special attention must be paid to start-up technique to prevent air binding in the column. Interface control remained as satisfactory during pulsing as it has been during normal packed column runs. Performance of the pulsing mechanism was satisfactory over a wide range of pulsing rate and amplitude. Failure of a filter plate in an aqueous feed filter during one run permitted some solids to enter the column, but resulted in no adverse effect on throughput due to hole-plugging of the pierced-plates on either the run concerned or on subsequent runs after the filter was repaired.

Equipment Development

Submerged Pump No. 2 (carbon-filled fluorothene bearings lubricated by process fluid) has completed four (4) months of continuous operation in 2.0 M $Al(NO_3)_3$ at 1750 RPM, discharge pressure 10 psig. and discharge rate 0.9 gal./min.

Fabrication of Submerged Pump No. 3 (10'-6"-long drive shaft driving a Model 147 Roth turbine pump) is proceeding satisfactorily with the exception of the Graphitar bearings, which are behind schedule and will probably delay completion of the pump until mid-November.

The Peerless Model 4ⁿ-LA has completed 10 days operation in water and 32 days in 1.8 M $Al(NO_3)_3$. During the month the seal fluid was changed from oil (SAE No. 10) to water in accordance with anticipated plant procedure. The seal leakage rate with water was 160 ml./day for a period of 45 days. The rate increased to 912 ml./day during the last five hours prior to shutdown and process fluid entered the seal fluid chamber. The unit was dismantled and inspected. Comments for revisions to the seal will be forwarded to Peerless Pump Division of Food Machinery Corporation.

The Moyno Model IB2 was placed in test. Because of mechanical difficulties in the drive-shaft and torque-tube system, the pump was removed and returned to the Robbins and Myers Company for modification.

The submerged G.E. & C.L. motor (1/3 H.P., 1750 RPM 220 Volt, 3 phase) has completed a total of 32 days operation (10 days in water-22 days in 1.3 M $Al(NO_3)_3$) coupled to a G.E. & C.L. turbine pump discharging 0.2 gl./min. at 10 psig. The in-leakage of process fluid has not reoccurred during this interval and the operation is trouble-free and vibrationless.

The Fischer and Porter automatic flow measuring and controlling test installation employing an all-stainless steel electrical transmitter has completed four months of continuous operation on 2.0 M $Al(NO_3)_3$. Operation has been satisfactory.

Comparative performance of a Shutte & Koerting glass tube rotameter-transmitter coupled with a Foxboro recorder-controller vs. the Fischer & Porter system described in previous paragraphs has been satisfactory for the elapsed 184-hour period completed.

Clarification of dissolver metal solution by centrifugation with 1.67 wt. percent of Super Filtrol FO appears to be optimum at 2000 x gravity, 20-minute hold-up time, Super Filtrol classified to pass 100-mesh and retain on 200-mesh. The resulting clarities of 88.9% are not completely satisfactory, since it is observed that finely divided material settles from the clarified solution on standing (24 hours). This is not anticipated to have any effect on mechanical auxiliaries (valves, rotameters, etc.) but may effect the collection of foreign material at the interface. The disengaging times are improved by the scavenger treatment as follows:

IAFS 27 secs. (untreated vs. 19.7 secs. (treated), IAF 52.6 secs. (untreated) vs. 22.3 secs. (treated)

Concrete test blocks (3" x 5" x 8") coated by Schori Company with flame-sprayed polyethylene have been immersed in 10% HNO₃ for 20 days, 60% HNO₃ for 14 days and IAX (0.5 M HNO₃, hexone) without apparent effect. Amercoated (No. 1528E) concrete blocks failed after 6 days in IAX and 2 days in 60% HNO₃.

Process Chemistry

The report on IA-E-27, equilibrium study simulating IA system per HW-2 Redox flow sheet, has been prepared.

Hexone recovery procedures employed in the Demonstration Unit have been reviewed and a modified procedure to approach more nearly Production Plant proposed operations has been prepared, together with a sampling program to observe performance.

Hexone from the Scale-Up unit hexone stripper has been examined. It is yellow and contains 0.3 g./l. methyl isopropyl diketone, and .05 g./l. dinitroisobutane. This material will have to be processed through the D.U. hexone treatment system before re-use.

Laboratory runs on C.M.W. (Current Metal Waste) per HW-14470 have been carried through to yield a ISF stream of the composition:

UNH 1.24 M, HNO₃ - 0.2 M, UNH/PO₄ mol. ratio 370.

The effects of acidity and uranium concentration of possible flow sheet range in synthetic ISF solutions have been found to limit the phosphate to a range of 0.20 to 2.72 g./l. Due to the long time required for establishment of equilibrium, closer limits cannot be set reliably at this time.

Separations Technology Division

DECLASSIFIEDFEDOX RESEARCHPreparation of Solvent Extraction Feed from Metal Wastes

Precipitation of sodium uranate from synthetic 103-T supernate and current metal waste with 2 M NaOH containing sodium phosphate yielded washed precipitates having U/PO_4 mole ratios of 3.2 and 4.0, respectively. The phosphate content of the caustic precipitant corresponded to that which would result from metathesis of a precipitate having a U/PO_4 of 4. As the U/PO_4 values of these precipitates were substantially the same as those previously obtained with phosphate-free caustic, phosphate build-up apparently would not occur on recycle of metathesis centrifugate to precipitation. Metathesis of the precipitate obtained from the current metal waste gave U/PO_4 values of 30 after four hours and 50 after 24 hours, again identical within experimental variation with results achieved with precipitates prepared using phosphate-free caustic.

Methods for converting uranyl phosphate (U_3P_2) to sodium uranate which have been investigated include (1) caustic precipitation of a sodium carbonate or bicarbonate solution of the phosphate, (2) caustic precipitation of a nitric acid solution of the phosphate, and (3) direct metathesis. Carbonate and bicarbonate dissolution proceeded slowly and required excessive amounts of reagents. Nitric acid dissolution proceeded more rapidly but the requirement for complete solution was ca. 300% of the stoichiometric amount. Caustic precipitation of the resulting acid solution yielded precipitates having U/PO_4 values ranging from 2 to 6, as the molar concentration of excess hydroxide increased from 0.2 to 2.4. Metathesis of U_3P_2 at 90°C. with 4-6 M NaOH gave U/PO_4 values of 13 after 1 1/2 hours and 26 after 25 hours. Accordingly, return of uranyl phosphate to the sodium uranate digestion operation preceding metathesis is recommended for routine recycling to process, with nitric acid dissolution held in reserve when required for removal of solid impurities from the system.

Phosphate solubilities in ISF and ISFS solutions in contact with U_3P_2 were investigated as a function of acidity and UNH concentration. Solubilities in 1.4-1.8 M UNH containing equimolar sodium nitrate corresponded to U/PO_4 values of 220-245 and 75-100 in ISF solutions -0.2 and +0.3 M in HNO_3 , respectively. With increasing UNH concentration, ISF phosphate solubilities increased in -0.2 M HNO_3 and decreased in +0.3 M HNO_3 . Phosphate solubility versus UNH concentration was determined for ISFS solutions 0.7 M in $NaNO_3$ and containing 1.0, 1.0, 0.65, and 0.65 M $Al(NO_3)_3$ at HNO_3 concentrations of -0.2, 0, +0.2, and +0.4, respectively. The solubility minima observed corresponded to required U/PO_4 values in 1.4 M UNH ISF of 310, ca. 1000, 130, and 35 for -0.20, 0, +0.2, and +0.4 M HNO_3 ISFS solutions.

Tributyl Phosphate Solvent Extraction Studies

Plutonium distribution ratios in 5 M HNO_3 , 15% TBP-85% Deco-base systems were found to be < 0.015 for Pu(III) and 10.4 for Pu(IV) (consistent with, but observed prior to knowledge of ORNL-479). The E_c^0 for Pu(IV) was constant with time, equilibrium being achieved in < 5 minutes. The apparent E_a^0 for Pu(III) increased with time even in the presence of 0.05 molar ferrous sulfamate as a holding reductant. Analytical evidence confirmed the interpretation that this was due to oxidation to Pu(IV) by the nitric acid.

Addition of ca. 0.2% by weight ammonium fluosilicate to the aqueous phase of the Pu(IV) distribution system decreased the E_a^0 to 0.4. The effect of fluosilicate ion will be investigated in the presence of uranium as it may prove useful for plutonium and zirconium decontamination in metal recovery using TBP.

Stability of Tributyl Phosphate

A 15% solution of tributyl phosphate in Deo-base (a kerosene-like hydrocarbon) was tested for chemical stability in the presence of various aqueous solutions at room temperature and at 100°C. The solution was entirely stable to 1 M HNO_3 solution at 100°C. over a two hour test period and to 6 M HNO_3 solution at 25°C. for 72 hours. When treated with 1 M HNO_3 , 0.2 M $Na_2Cr_2O_7$ solution, the 15% TBP solution turned a dark amber color, due in part to dissolved dichromate. Vacuum-distilled TBP developed slightly less color than "as received" TBP under these conditions because of the absence of butyl alcohol impurity. With either grade of TBP the color was completely removed by washing with aqueous sodium carbonate solution.

Pulse Column Application to TBP-Deo-Base Extraction

The one-inch diameter x 69-inch pulse column was found to operate satisfactorily on a synthetic 103-U waste supernatant and a 15% solution of tributyl phosphate in Deo-base. With 56 inches of plates spaced at one inch and throughputs of 800 to 1250 gal./sq.ft./hr., the uranium loss in IAW was 0.2% for flow ratios of 1.5/1 (aqueous/organic). Satisfactory behavior was also observed in the stripping step.

Further work on composite and supernatant feeds, both hot and cold, is under way.

Plutonium and Uranium Recovery from Off-Standard Aqueous Redox Wastes

Coagulation of colloidal hydrous chromium oxide by heating following caustic precipitation of simulated off-standard pooled waste was found to reduce the Cr(III) interference which heretofore had led to inadequate plutonium recovery. Over the entire range of possible Cr(III) concentrations, heating for one hour at 90°C. reduced the plutonium content of the alkaline supernate to the equivalent of a net loss of < 0.2% from a waste having an initial plutonium concentration equivalent to a 10% Redox loss.

Complexing of Plutonium and Uranium

The complexing action of decomposition products of hexone was studied by observing the effects of these products on the distribution of UO_2^{++} , Pu(IV), and Pu(VI) between hexone and 1 M $Al(NO_3)_3$ solution. Acetic acid (0.6 M) had no effect on UNE distribution, but noticeably increased the extraction of Pu(VI) into hexone. Dinitroisobutane and isopropylnitrolic acid (stand-in for isobutylnitrolic acid) increased the extraction of UNE, Pu(VI) and Pu(IV) into hexone in the region of low UNE concentration. The effects of methylisopropyldiketone and its oxime derivative were negligible.

Separations Technology Division

DECLASSIFIEDRuthenium Tetroxide Distillation

During the past month a study of alternate catalysts has been made with the goal of eliminating the use of silver nitrate catalyst because of its expense and the desirability of avoiding silver chloride precipitation. A number of observations and conclusions have been made:

- (1) In the absence of any catalyst, ozonization is initially slow due to a slow rate of removal of Species A. After five hours ozonization, however, the percent of ruthenium left in the residue was found to be about the same as when 0.03 M AgNO_3 catalyst was present, suggesting that the use of a catalyst may perhaps be omitted, providing the time cycle remains of the order of five or six hours.
- (2) When 0.03 M $\text{Co}(\text{NO}_3)_2$ was used as the catalyst, rates of removal of Species A intermediate between those found with no catalyst and with 0.03 M AgNO_3 were obtained. Furthermore, after two to three hours ozonization, the ruthenium removal was essentially as complete as with silver.
- (3) When 0.03 M KMnO_4 was used as an aid to ozone in the distillation, removal of Species B was improved. Thus, after four to five hours of ozonization, more complete removal of ruthenium was achieved than when silver or cobalt was employed with ozone, although the opposite was true after one to two hours. Use of permanganate is, however, objectionable on the basis of insoluble MnO_2 formation and deposition of activity on process vessel walls.

When air was used as the parent gas in the synthesis of ozone, results comparable to those with oxygen were obtained, provided the ozone concentration was around 1.5%. With only 0.5% ozone, however, removal of ruthenium was much slower, primarily due to the slower rate of removal of Species A. The dependency of Species A removal on ozone concentration in the range of 0.5 to 1.5% is being investigated.

New data support previous conclusions that Species B is less extractable than the initial mixture of A and B and that satisfactory decontamination (10^5 - 10^6) can be obtained in Column IA, provided Species A is adequately removed on ozonization. However, the improved decontamination is due to the ozonization and extraction steps only, since the distribution on scrubbing is essentially the same, whether ozonization had been used or not.

Head-End Scavenging

No unusual adsorption behavior was observed with (a) a special Filtrol treated by the manufacturer to reduce the acidity, or (b) Filtrol which had been pre-treated with dichromate. Furthermore, larger particle sizes appear to adsorb as completely as the mixture of smaller particle sizes.

There still remains some question about the optimum pH for Filtrol scavenging from dissolver solution. These data are being checked with a new supply of dissolver solution.

Coupling of Separation Processes with 234-5 Operations

A study of the solubility of plutonium(IV) phenylarsonate indicates that 0.1 M phenylarsonic acid should give plutonium losses of around 0.1% when precipitated from Redox IIIIBP solutions, assuming a concentration of one gram of plutonium per liter of IIIIBP.

Plutonium(IV) phenylarsonate was precipitated from a simulated F-10 solution diluted by a factor of two. Extensive washing to remove lanthanum due to liquid hold-up yielded a precipitate containing only 0.66% of the lanthanum initially present. Plutonium losses in the supernatant were about 0.5 to 0.7%.

Equilibrium constants calculated from data available in the project literature have indicated that plutonium(III) oxalate should be precipitable from Redox IIIIBP solutions with only a small loss, provided that plutonium is completely reduced to the (III) oxidation state. In two experiments tried, plutonium reduction was accomplished with hydroxylamine hydrochloride. High losses were obtained because the precipitate stood in contact with its supernatant for about 24 hours, resulting in some reoxidation of the plutonium to the (IV) oxidation state with the formation of the soluble plutonium(IV) oxalate complexes.

234-5 PROCESS DEVELOPMENT

Studies of the precipitation of sulfate-free plutonium peroxide from P-1 solutions on a 200-milligram scale were continued in the direction of finding optimum final hydrogen peroxide and hydrogen ion concentrations to strike the precipitate. The following experimental procedure was used:

- a. Adjust initial acidity of the P-1 solution to give desired final acid strength.
- b. Add hydrogen peroxide to the solution at a uniform rate in 20 ± 2 minutes.
- c. Digest the slurry at 26°C . for one hour.
- d. Allow the precipitate to settle for ten minutes.
- e. Wash the precipitate twice with 2 N nitric acid. Each wash consists of a two-minute contacting period and a ten-minute settling period.

The final acid strength was varied from 1.2 to 2.4 normal and final hydrogen peroxide concentrations of 1% and 20% were used. The plutonium peroxide yields obtained ranged from 77.2 to 86.4% for the 1% hydrogen peroxide runs and from 91.5 to 97.2% for the 20% hydrogen peroxide runs, increasing with increasing acid strength.

It was readily apparent from the color of the supernatant mother solution and the wash solutions that the larger part of the loss was occurring during the washing of the precipitate with 2 N nitric acid. In one case, where the supernatant and wash solutions were analyzed separately, the loss in the supernatant was found to be 2.3% and in the combined two washes, 20.5%.

The experiments were repeated, therefore, with a wash solution of 1 N nitric acid instead of the 2 N acid used previously. In this series of runs supernatants and combined washes were analyzed separately. The plutonium peroxide yield data obtained ranged from 95.9 to 97.6%, measured on the supernatant removal before washing, and from 93.3 to 94.3%, measured after washing.

On the basis of the data at hand it also appears that the yield of plutonium peroxide is not affected significantly by increasing the peroxide concentration above 12%.

Studies of the recovery of plutonium from reduction slag and crucibles have been started with a method similar to that tested at Los Alamos. Residues from five small-scale laboratory reduction runs were pulverized in an iron mortar, so that all material passed through a 10-mesh screen. The batch of ground material was calculated to have the following composition:

<u>Constituent</u>	<u>Grams</u>	<u>Moles</u>
Pu	1.707	0.007
MgO	220	5.45
CaF ₂	25	0.32
CaI ₂	12	0.041
Ca	3	0.075
Fe,Al,Si	Undetermined	

The batch was treated with water and then with nitric acid. Iodine was evolved rapidly from the resultant vigorous reaction; the reaction mixture was refluxed for twenty hours; at this time, approximately 10-20% of the original charge was still undissolved. Precipitation occurred on cooling, so it was necessary to add additional water. The plutonium in the dissolver solution was precipitated as hydroxide by the slow addition of ammonium hydroxide to the stirred solution, previously buffered with ammonium nitrate. Test paper indicated that the faintly blue supernatant above the greenish brown precipitate had a pH of 5 to 6. The blue color of the supernatant was probably due to the presence of copper from the gasket used in reduction. The supernatant solution was decanted through a filter; the precipitate was then water washed three times to remove magnesium and calcium.

It is planned to make a second hydroxide precipitation with sodium hydroxide to separate aluminum from the plutonium. Analysis of the solutions after first-cycle and second-cycle precipitation and dissolution of the precipitate will determine the amount of purification required for recycling of slag and crucibles.

Recovery of plutonium metal produced in the first eleven runs in the laboratory small-scale line has been started. The metal and the greenish black precipitate formed from air oxidation were treated with 6 N hydrochloric acid. Prolonged refluxing with this strength acid failed to dissolve approximately 20% of the material, which remained as a fine black powder. Successive treatment with aqua regia and 58% hydriodic acid failed to dissolve the residue. The solutions were filtered to remove the insoluble material in each instance. The filtrates will be converted to plutonium nitrate for return to the 231 Building and the insoluble residue will be retained for further study.

A filter reactor for use in the small-scale processing of plutonium peroxide has been designed. The equipment will consist of a two-inch sintered platinum filter contained in an Hastelloy C tube. After the assembly is used to filter the plutonium peroxide, the tube with the precipitate on the filter will be transferred to a vertical resistance tube furnace for the dry chemistry operation.

STACK GAS DISPOSAL

The routine monitoring measurements obtained at both plant sand filters during the month indicated the continuance of normal operation. An activity traverse, employing the lead-shielded "Totem Pole", was made at the B Plant filter. The results confirm previous readings and reveal that the fraction of the total contamination removed in the coarse sand strata is greater than that filtered in the Type G layer.

A study of the filtration efficiency and pressure drop characteristics of the No. 55 and "AA" Fiberglas at high linear velocities has been initiated. It is planned to investigate the range of 10 to 125 ft./min.

The binder was removed from two "AA" pads by heat cleaning at 400°C. Tests conducted with this material revealed that loss of the binder had no effect on the filtration efficiency of the "AA" Fiber. The binder was removed from the filtration bed of a unit containing 9 inches of No. 55 Fiberglas (at a density of 6 lbs./cu.ft.) and four one-half inch "AA" pads, compressed to a one-inch thickness. An air stream, containing approximately three times the quantity of steam necessary for saturation, was passed through this unit for 13 hours. The pressure drop across the bed increased from the initial value of 3.2 to 5.6 inches of water. Room air was then drawn through the unit for 2-1/2 hours. The pressure drop decreased to 4.3 inches of water. The results emphasize the necessity for preventing condensation in the proposed dissolver off-gas filter.

The silver reactor phase of the extended pilot plant operation performed at B Plant last month was repeated. This was done to determine whether or not the low I¹³¹ removal efficiencies (85 and 80%) obtained during the fourth and fifth dissolvings were due to monitoring difficulties or a failure of the equipment under continued operation. A more concentrated silver nitrate solution was used to coat the Berl saddles and the basicity of the monitoring scrubbers was maintained by more frequent solution changes. The I¹³¹ removal efficiency of the unit remained unchanged during the course of five dissolvings. The values ranged from 99.50 to 99.82%. Additional determinations will be made with this apparatus.

The installation of the new high-tension line from the rectifier to the precipitator has been completed. The replacement has corrected the major electrical difficulty and has made continuous operation of the equipment possible. Six runs were made wherein Canyon ventilation air was passed through the unit at a rate of 20 cfm. A water flow of 1 gpm was maintained over the surface of the collecting tube. Secondary voltages of 44,500 to 51,000 and efficiencies ranging from 94.8 to 99.63% were obtained. Minor electrical adjustments will be made in an attempt to achieve higher operating voltages.

A study of the gas flow rates in the B Plant dissolver off-gas lines has been initiated. It has been determined that the flow rate in each line is dependent upon the dissolver operation--with high flow values during charging and jetting and low values during coating removal and metal dissolution. Maximum and minimum values of 160 and 10 cfm have been recorded. It has been established that the flow through the 4-5L line is consistently lower than that in the 3-5R line. Since the flow rate would greatly influence the power requirement for a silver reactor and the pressure drop across the cell Fiber-glas filter, this investigation will be continued.

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>
C. F. Callis	The Use of Cobalt(II) Nitrate as a Catalyst During Ozonization to Remove Ruthenium as the Tetroxide.
W. H. Reas	Precipitation of Plutonium(III) Oxalate as a Method of Separation of Plutonium from Aluminum in Redox IIIIBP Streams.
R. L. Moore	The Use of Carbon Tetrachloride Tributyl Phosphate Mixture for Solvent Extraction Recovery of Heavy Metal.

R. H. Beaton

 R. H. Beaton, Head
 Separations Technology Division

Date: November 1, 1949

METALLURGY & CONTROL DIVISION

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OCTOBER 1949

VISITORS & BUSINESS TRIPS

11-10-49

B. F. Rider, of the Knolls Atomic Power Laboratory, spent October 17-20 with the Analytical Section in consultation on analytical techniques.

Business trips of personnel in this Division were as follows:

T. W. Hauff spent October 17 at Argonne National Laboratory, inspecting and discussing metallurgical facilities and programs. He visited Simonds Saw & Steel Co., Lockport, N. Y. on October 17-18 inspecting and discussing uranium rolling operations. He also visited Knolls Atomic Power Laboratory on October 19-21, Oak Ridge National Laboratory on October 24-26, Battelle Memorial Institute on October 27 and Mallinckrodt Chemical Works, St. Louis, Mo. on October 28, inspecting and discussing metallurgical facilities and programs. While at Oak Ridge, he attended the Project Information Meeting held at Y-12. At all sites except St. Louis, he investigated also budget control, and design and shops services.

R. B. Socky attended the Metals Congress in Cleveland, Ohio, on October 17-18. He visited the Ford Motor Co., Detroit, Mich. on October 19 to investigate cathodic vacuum etching procedures. He spent October 20 at Battelle Memorial Institute discussing project metallurgy. He attended the Project Information Meeting at Oak Ridge on October 24-27, where he presented a paper entitled "A Recording Dilatometer and Its Use in the Study of Uranium."

E. M. Kinderman, W. N. Carson, Jr., and R. H. Moore attended the Project Information Meeting at Oak Ridge on October 24-26 where all three presented papers as follows: Kinderman - "Behavior of Electrodes in a High Intensity Radiation Field," Carson - "An Auto-titrator," and Moore - "Investigation of Redox Systems With Infra-Red Absorption." While in Oak Ridge, they discussed analytical problems at the K-25 and X-10 sites.

C. G. Stevenson visited the Kellogg Corporation, New York City, on October 25 to inspect their classified files and discuss procedures. He attended an Atomic Energy Commission library conference at Oak Ridge National Laboratory on October 26-29. He spent October 31 at Los Alamos Scientific Laboratory attending a meeting of the Technical Information Panel.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized below:

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Metallurgy & Control Division

	<u>September 30</u>	<u>October 31</u>
Metallurgy Section	35	37
Analytical Section	316	331
Statistics Group	13	13
Information Group	56	57
Administrative	<u>3</u>	<u>3</u>
Totals	423	441

The Analytical Section employed two non-exempt chemists and thirteen laboratory assistants, as required for the control of expanded 200 Area operations. One shift supervisor was transferred from this section to the P Division, and one laboratory assistant transferred into Analytical from the H.I. Divisions. The Metallurgy Section added one engineer on assignment for radio-metallurgical equipment design, by transfer from Schenectady, and one stenotypist by transfer from the Construction Division. The Information Group employed one chemist for technical abstracting and one files clerk. Also, the Information Group had one files clerk go on leave of absence. There was only one termination, a non-exempt chemist.

METALLURGY

Uranium Billet Casting

Results of previous experimental trials of a meehanite mold were inconclusive due to unfavorable test conditions. Accordingly one more meehanite and two cast iron molds have been fabricated and annealed for trial use.

The electronic "sniffer" leak detector for furnace use was put into satisfactory operating condition, and has been employed in locating and eliminating several leaks from the casting furnace vacuum system. However, efforts to produce furnace atmospheres of less than 100 microns pressure are still unsuccessful, and it has not been possible to collect the nine additional billets cast from pickled chips at less than 100 microns pressure (as required to complete PT 313-59-M).

An apparent improvement in Hanford cast uranium billet density attributed to increased care in analytical sample preparation has proved statistically non-significant. Continued investigation into the causes for these low densities indicate increased carbide and oxide content as the most likely, the latter presumably due to the difficulty in maintaining low furnace pressure during casting. Insufficient vacuum may also be a contributing cause for the higher carbon content. Remedial measures now being applied in melt plant practice include painting the crucibles with MgO mold wash, and renewed efforts to improve furnace vacuum.

The average silicon content of Hanford cast billets continues higher than virgin metal received from off-site. Every conceivable source of silicon in the Hanford billets has now been investigated, with instances of high silicon as follows: (1) Contents averaging 124 ppm were found in 15 billets cast from charges containing over 60% remelt scrap (spillage from former castings) bearing flakes of mica picked up from the furnace turntable; and (2) a sample

Metallurgy & Control Division

from a barrel of chips processed and ready for briquetting contained 159 ppm silicon. Previously reported instances included dusty chips from the charging buggy, and incompletely rinsed chips from the chip wash. Since the occurrence of high silicon billets is sporadic, it has been concluded that the causes for the high average silicon content are a variety of unusual conditions, all of which require specific operational control.

Uranium Rolling

The program at Battelle for determining the deformation strength of uranium at 300° C is continuing. Tests in the high alpha temperature range are complete, and those in the lower temperature range are underway. The results of these tests have not been received.

Slug Canning

Owing to an unusual condition of the bronze bath on October 5, 6, and 7, the tin concentration of the Al-Si canning bath exceeded the specified Sn limit. Approximately 1500 slugs were produced during this off-standard condition. A test was designed to compare the total tin of these slugs with that of standard slugs to determine if the doubtful slugs might be accepted for pile use. In this test, the jacket and bonding layers were chemically stripped from the test slugs and the resulting solutions were submitted to the Analytical Section for analysis. The results have not yet been obtained.

The appearance of a milky film on regularly processed cans and caps was traced to incorrect composition of the alkaline cleaning solution. A faulty Solubridge conductance cell used to control the composition of this bath was chiefly responsible. Steps to prevent recurrence were recommended.

Experimental equipment for bronze-dipping four slugs at a time was modified as indicated by earlier tests and is now ready for another trial. Arrangements are being made for a thorough test of a canning system employing this equipment. Principal objectives of this test include (a) time in the bronze bath beyond the minimum required to insure complete transformation of the uranium; (b) a reduction of the net bronze cycle; and (c) reduction of the bronze bath temperature, to reduce furnace maintenance cost.

Metallographic examination of alpha rolled uranium slugs heated four-at-a-time in the bronze bath indicated that these slugs were completely transformed and had a grain size comparable to that of the present production slugs. Slugs heated four-at-a-time are in the bronze bath as compared with the two-at-a-time used with the present two-slug dipping.

Continued laboratory work on the problem of removing tin from scrap Al-Si has involved treatment of the molten Al-Si at different temperatures with various fluxes and gases, including chlorine. A literature survey suggested several ways of removing tin from lead, but nothing regarding removal of tin from aluminum. Some of the more promising lead treatment methods were tried on the Al-Si with poor success. The only experiments which have effected significant tin removal are those employing a lead layer with aeration and vigorous stirring to effect maximum contacting between the two liquid phases.

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While the results obtained by this treatment have not been consistent, three samples showed a reduction in tin content from 1% to less than 0.1%.

Induction Heating Experiments (PT 313-109-M)

Bond strength measurements on the lead-dipped slugs for P.T. 313-109-M showed that the bond strength in the induction heat treated gamma extruded and alpha rolled rods is equal to that of the present triple-dip bond. Similar measurements on canned slugs made with uranium induction heat treated in machined slug form, and with regular untransformed rolled slugs produced for ORNL, showed a bond strength inferior to that of the slugs produced by either the present triple-dip method or by lead-dipping slugs from induction heat treated rods.

Metallographic work on six canned slugs produced for this production test, and on alpha rolled uranium which was induction heated in slug form, revealed that these slugs had an outer layer of radial grains. The thickness of this layer varied, and in one slug it occupied 60 percent of the cross-sectional area.

Six canned slugs produced from alpha rolled metal induction heated in rod form were examined. Five of these taken from the center portion of the rods had a satisfactory structure, but one taken from the butt end of a rod contained some untransformed metal.

Five canned slugs produced from gamma extruded uranium induction heated in rod form all had a satisfactory structure. The apparent grain size of these slugs varied from 0.090 mm on the surface to 0.200 mm in the center, but on the average it was somewhat smaller than that of the alpha rolled slugs.

X-ray diffraction data showed that all of the above slugs (except the one from the butt end of the alpha rolled rod) had a random orientation. Results on the butt end slug confirmed the metallographic data showing incomplete transformation. Such slugs presumably would be unstable under pile irradiation.

Design of a spray type quenching fixture for use in further induction heat treatment studies was completed and has been submitted to the shop for fabrication.

Uranium Alloys

A time-temperature curve was run on a 0.4 atomic percent chromium-uranium alloy to determine transformation temperatures. The alpha-beta transformation and the beta-gamma transformation occurred at 660°-661° C and 768-774° C, respectively, on heating, and at 584-585° C and 756-757° C on cooling. The rate of heating and cooling was approximately 8.5° C per minute.

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Alpha Annealing Uranium to Stabilize Grain Structure

Work was initiated to determine the time and temperature required for an alpha phase anneal to stabilize the grain structure of uranium quenched from the beta phase. Argonne data indicate that a stabilizing anneal increases dimensional stability during thermal cycling, and possibly such an anneal might increase the pile stability of beta quenched uranium. On gamma extruded and alpha rolled material which had been induction heated and water quenched from the beta phase, a four-hour anneal at 600° C did not produce stabilization. A four-hour and a sixteen-hour treatment at 640° C gave stabilization in both types of uranium, but with some grain growth occurring in the sixteen-hour samples.

Dilatometry

A preliminary test of the slug dilatometer was made using six canned slugs, of which half were transformed and half were not. On heating to approximately 150° C, the transformed slugs expanded 0.19 percent, while the untransformed slugs expanded 0.13 percent.

Radio-Metallurgy

The Project Engineering Division has started preliminary design on modifications to the 111-B Building to accommodate the increasing number of radioactive samples and to provide the required health monitoring system.

The Universal Model Rockwell hardness tester has been installed and several tests have been made. Hardness values obtained by using a test block were consistently two hardness numbers low, but it is believed that this condition can be corrected.

The reciprocating grinding machine used for metallographic samples began producing unsatisfactory surfaces because of the formation of a saucer-like depression in the back-up plate. This plate was replaced with one of hardened tool steel; however, initial use of the new plate indicates that the problem is not completely solved.

A method for electrolytically polishing irradiated samples has been developed that involves the principle of jetting the electrolyte onto the sample. With this method, the sample is held in place by the same vacuum that causes the electrolyte to impinge on the sample.

P-10 Alloy

Alloy production figures for October may be summarized as follow:

	<u>Number</u>	<u>Approx. Wt. (lbs.)</u>
Total billets cast	15	535
Acceptable billets produced	12	414
Acceptable billets extruded	0	-
Slugs machined	235	120
Slugs canned 121300b	223	113

The canned pieces were undergoing inspection at month-end. Plans for another extrusion run at Detroit early in November were completed.

Test Pile reactivity results have been plotted against careful analytical results on lithium-aluminum alloy slugs covering the specified composition range, in order to furnish a chart from which the composition of an individual slug may be non-destructively determined from its Test Pile reading. By this means it was determined that all the slugs which were suspected as off-specification were of satisfactory lithium content. However, 53 slugs from two separate heats were withheld from pile loading because of unfavorable hydrogen content.

Using a 25% sample of each heat, the slugs obtained from six heats of the September 30 extrusion were checked in the Test Pile. All heats were acceptable, though two (satisfactory according to billet analysis) were lower in lithium content than desirable, and most of the slugs were on the low side of the specified lithium content range. Accordingly, the casting makeup charge has been increased from 3.65% to 3.8% lithium. These tests indicate that billet sample analyses do not furnish a reliable index to the over-all composition of the alloy.

Exposure of the bare alloy slugs to atmospheric moisture has been minimized by inserting the freshly machined slugs immediately into previously etched, freshly desiccated process cans. The cans then are immediately closed with the welding discs, and welding is completed as soon thereafter as possible. This procedure is now standard practice.

In order to improve billet homogeneity and to increase crucible and mold life, a rotary lithium feed magazine has been designed for attachment to the casting furnace lid. With this design the lithium blocks may be added to the aluminum after the latter has been melted and degassed.

Graphite molds of 1" wall thickness were satisfactory in several trial castings. Heavy cast iron molds have been found difficult to outgas and have produced billets with poor surfaces.

Redox Corrosion Testing

An interim inspection of the pipe pots in tests to determine the value of coating for the storage of concentrated aqueous wastes (HW-13462) was made after 34 to 37 days exposure. It was found that the slurry, consisting of most of the solutions, made it impracticable to clean the interior of the pots without damage to the coating. In general, the performance of the protective coatings is similar to their performance on the coated rectangular coupons. Seachrome and Prufcoat have become badly blistered on exposure to both concentrated still bottoms and concentrated IAW - IDW. Ucilon blistered on exposure to concentrated still bottoms, but shows some promise against concentrated IAW - IDW. Amercoat shows promise against both concentrated still bottoms and concentrated IAW - IDW.

All unpainted pots showed considerable uniform rusting on portions that were

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visible. By probing the walls below the solution level, some roughness of the wall surface could be detected in the case of samples exposed to concentrated still bottoms. No roughness could be detected in those exposed to concentrated IAW - IDW. Surface roughness was considered to indicate scaling and/or pitting of the wall. However, these interim inspections cannot be considered conclusive as the solutions were not removed.

A concrete lid, coated with Lapidolith and exposed to the vapor of concentrated still bottoms at 170° F, developed three very fine cracks. The piece shows a slight white discoloration but otherwise appears to be in good condition. A similar lid, exposed to vapors of concentrated IAW - IDW at 170° F, developed a cream colored discoloration but has otherwise suffered little effect.

Stressed samples of SAE 1010 steel in waste and recovery solutions were inspected after the first 3 months exposure period. Samples exposed to ORNL - IAW solution of pH 10.75, 12.1, and 13.0 have each developed a white film on the areas of the metal in contact with the supernate. Those areas which were in contact with the sludge on the bottom of the jar do not have such a coating. All samples which were checked increased slightly in weight.

Room temperature, static immersion tests of C-2 carbon, Kel F (plasticized), T-302 stainless spring steel and T-303 stainless-nitrided, in ISS (HW-2), IAF (ANL) and IAX (ANL) Redox solutions were begun during the month. Inasmuch as only one sample each of C-2 carbon and T-303 stainless-nitrided is available, these materials will be tested in the various solutions consecutively while the others will be tested concurrently in all three solutions.

Miscellaneous

Reactivity measurements on slugs made from depleted metal (U-238 from Oak Ridge) for P.T. 313-110-M show a loss of 7.5 inhours per slug. The slugs were tested separately and found to be quite uniform. Samples of the depleted uranium were examined metallographically in the "as rolled," alpha annealed, beta quenched, and gamma annealed conditions. All samples except the one in the beta quenched condition had a structure similar to that of natural uranium having normal U-235 content. The beta quenched sample had an area containing needle-like grains, but this was traced to nickel and chromium present in the sample.

The second capsule containing the beryllium creep specimens and the aluminum-10 percent magnesium hardness specimens was discharged from D Pile on October 12, after a three month irradiation. No detectable change in hardness occurred in the aluminum-magnesium alloy samples.

The damping factor was determined at several temperatures on a beta quenched uranium wire. This factor is related to primary creep in metals, and hence is related to the relief of thermal stresses set up in uranium during pile irradiation. Values of the damping factor of uranium determined thus far are comparable to those of aluminum in the 25 to 150° C temperature range.

Metallurgy & Control Division

To date, four of the proposed 18 potential corrosion tests involving aluminum and 18-8 stainless steel have been completed for the Design Division. These tests were performed with the following couples: 18-8 stainless steel anode versus 2S aluminum cathode, 30 volts applied; 2S aluminum anode versus 2S aluminum cathode, 30 volts applied; 2S aluminum anode versus 72S aluminum cladding cathode, 30 volts applied; 2S aluminum anode versus 2S aluminum cathode, 15 volts applied. Anodized samples are currently being prepared for testing. Results of the completed tests indicate that corrosion rates are severe; weight losses ranged from 0.03 to 1.24 grams on 24 hours exposure. Except when the 18-8 stainless steel was the anode, the attack was always more severe at the anodes than the cathodes. However, the cathodes suffered a greater weight loss than had been anticipated.

Testing of sections of aluminum thimbles and drop rod guides in a humid atmosphere have been started. Initial tests of the difference in potential between the aluminum and steel indicated that with a water film between the two metals, no potential difference could be detected. A Leeds and Northrup millivoltmeter was used to make the measurements.

The external enclosure of Bldg. 3730 with corrugated sheathing was completed and installation of the heating and ventilation system was begun.

ANALYTICAL CONTROL

Work Volume Statistics

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

	<u>September</u>		<u>October</u>	
	<u>Samples</u>	<u>Determinations</u>	<u>Samples</u>	<u>Determinations</u>
Routine Control - 200	2656	7528	3178	7806
Routine Control - 300	307	948	674	1403
Water Control - 100, 700	960	2807	916	2567
Redox Program Analyses	2036	4840	2707	6140
Process Reagents	941	1696	1182	2147
Essential Materials	104	529	94	459
Special Samples	3016	6393	2404	6055
Stack Gas Filters	<u>174</u>	<u>250</u>	<u>39</u>	<u>153</u>
Totals	10194	24991	11194	26730

100 Areas Water Control

Control personnel responsible for routine analysis of P Division and River Water Program analyses were moved from the 100-D Area laboratories to the new quarters in Bldg. 190 of the 100-H Area. Because of the convenient layout and additional facilities in this new laboratory, no additional personnel will be required to handle the increased work load resulting from the start-up of 100-H.

Metallurgy & Control Division

One Technologist from the 100 Areas Control group has been assigned to the Methods Adaptation group in the 300 Area. He will act in a liaison capacity in the adaptation of analytical procedures required for the pile coolant water recirculation program now under study by the Pile Technology Division.

200 Areas Control

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

<u>Sample</u>	<u>Precision - %</u>		
	<u>Expected</u>	<u>September Average</u>	<u>October Average</u>
6-3-MR	1.58	1.50	1.51
P-1	2.39	2.16	2.37
AT	1.98	1.73	1.70

Accumulation of data intended for the recalculation of the isotope correction factor was continued by the Isolation Building control laboratory. Results obtained at the 300-360 G/T level were more precise than similar data obtained at lower concentrations.

Analyses for plutonium were completed on samples of fifteen runs in each operating canyon at tanks A-3-OS, C-4-0, and D-3-OS. These analyses were made at the request of the Plant Assistance group as part of an integrated program for study of material balance.

The 234-5 Control Laboratory was placed on a three-shift basis, effective October 31. This change will expedite completion of the present backlog of samples. Additional advantage will be gained by making the spectrographic equipment available for training purposes over the twenty-four hour period.

300 Area and Essential Material Control

A comprehensive study of the problem of sampling uranium oxides was completed. The results have led to a new procedure for sampling such finely divided material.

On October 5th and 7th the tin content of an Al-Si canning pot exceeded the process specification limit. The initial spectrochemical results were verified by wet chemical analysis. An accelerated sampling schedule has been initiated and will remain in effect until normal operation is assured.

Methods Adaptation

Improved analytical procedures were outlined for the macro determination of nitric acid in Redox samples. These methods employ potassium fluoride as the complexing agent and require a preliminary titration to establish the approximate acid concentration so that the complexing agent may be added at or near the equivalence point. The amount of excess complexing agent must be held to

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a minimum in order to realize the maximum sensitivity of the method. Experimental evidence indicates that this required excess depends upon the metallic ions present and increases in the following order: aluminum, iron (III), chromium (III), iron (II) and uranium (VI).

Alpha iodonaphthalene was found to be a reliable reference solution for the determination of the specific gravity of IAF solutions by the falling drop technique.

Modification of the dithizone method for the determination of lead in Rala solutions increased its sensitivity by a factor of 2.5. The analytical procedure and the detailed description of the apparatus required were submitted as a basis for the design of equipment.

A method was devised and tested for the determination of free hydroxide and carbonate in solutions containing Na_3PO_4 , Na_2SO_4 and NaNO_3 . The sample is titrated with standard acid until two potentiometric breaks are obtained and phosphate is determined independently. The hydroxide and carbonate concentrations are obtained from these data by calculation.

It has been previously reported (Doc. HW-14596-I), that the lanthanum fluoride method for the determination of plutonium gave anomalous results when applied to solutions of plutonium in phenylarsonic acid. Further investigation has revealed that these errors resulted from sampling difficulties and were not assignable to the analytical method.

The 3706 Building standard ASVP instruments have been brought into closer agreement. Calibration of ASP geometry standards was commenced. Experimental evidence indicates that IDL instruments are affected by the positioning of the sample with respect to the electrode, but that this is not the case with the ASP instruments.

Further alpha coincidence studies, while not yet conclusive, indicate losses exceeding 1% at counting rates of less than 1,000 counts per minute.

Theoretical calculations for the determination of alpha-beta ratios in radium D & E standards of various ages were made for use as a basis in establishing absolute beta standards.

Laboratory Equipment Design

Four work requests were received and a total of five requests was completed by the design group. Special effort is being made to complete the requests most urgently needed and those which can be applied to the largest number of problems. The present actual backlog of incomplete requests is sixteen, which represents an estimated 1,500 man hours.

Equipment for use in gloved boxes continued to be of major interest. Designs of a miniature drying lamp and a miniature hot plate were completed. A major portion of the design time on the gloved box program has been utilized in developing a unit for the Bldg. 234-5 Laboratory cupferron procedure. Further work on this unit has been suspended until contemplated revisions in the

procedure are completed.

Sketches for two new types of micro-burets were completed and sent to the shop for fabrication of trial units. One will be controlled electrolytically and one by means of a metal bellows. These units are under consideration as replacements for the present micro-burets which are expensive and difficult to maintain. Either unit would have many advantages in connection with the gloved-box, junior cave, and cubicle design effort.

Design of the gloved box to be incorporated in the first junior cave unit designed by Turnbull, just received, and revisions of the Turnbull cave canopy were completed during the month and sent to shops for fabrication. This work has been carried on in cooperation with the Chemical Research Section by two engineers temporarily assigned to the problems of that section.

Machine Shop

The shop group received a total of 51 requests for fabrication of experimental units during October; 38 of these requests and 6 requests submitted during September have been completed. Those remaining represent an estimated 180 man hours. This figure is low due to the current practice of referring as much fabrication work as possible to the 300 Area Instrument Shop.

Units of special interest which were completed during the month include a traveling tube furnace, a fluorothene still chamber, an electrolytically-controlled micro-buret, a miniature stirrer for gloved-box application and a waste evaporator. Two scale models of gloved-boxes were fabricated from lucite for use in demonstrating the applications of this type of unit to laboratory requirements.

Glass Shop

A total of 93 requests was completed by the glass shop during the month. This included a large amount of quartz equipment fabricated for various development groups. A backlog of approximately 240 man hours accumulated. Priority scheduling has been re-employed to insure early completion of the more urgent requirements.

Hydrogen and oxygen gas manifolds from the Harris Calorific Company have been received. The Project Engineering Division has also completed the drawings for installation of a gas mixing system to provide a supply of gas consisting of 60% hydrogen and 40% propane.

Special Hazards Control

An evacuation procedure for the Bldg. 234-5 Analytical Laboratory was issued during the month. This plan is a supplement to the regular 200 West Area Evacuation Plan.

Construction of the waste disposal transfer box and trays for transfer of analytical wastes from the 300 Area to the 200 Area has been completed by 200-W Maintenance Shops; these units will be affixed to a truck, assignment of which has been requested. Complete procedures for collection, pick up, transfer, and disposal have also been completed as recommended in Special Hazards Investigation #125.

ANALYTICAL RESEARCH

Rala

An estimate of the quantity of process material necessary for each of the analyses required for Rala Process Control was prepared and issued under the title, "Rala Sample Sizes," document HW-14861. These estimates were made on the best available information from completed research work, and were submitted in order that preliminary shielding requirements could be evaluated. The volumes actually required for the analyses are considered to be less than those required for adequate sampling.

Previous research has shown that a polarographic method is suitable for the determination of lead in Rala samples. Micro cells have been prepared for testing with micro samples in an effort to decrease the radiation hazard in this procedure.

Redox and Metal Recovery

A more rapid method for the determination of ruthenium in dissolver solutions has been tested and found to give satisfactory results. This method avoids the time-consuming distillation step previously employed and substitutes a direct reduction of ruthenium plus carrier to the metal with subsequent separation and counting. It was noted that high results are obtained with ozonized dissolver solutions, and that this results from the presence of active cerium on the counting disks. Since cerium does not interfere in the analysis of normal dissolver solutions, this suggests a peculiar behavior of that element during ozonolysis.

In order to establish a method for the determination of silica in phosphate-containing metal waste solution, it was proposed that the silica be separated by distillation with hydrofluoric acid. A fluorothene still has been constructed as a temporary substitute for one of platinum; it was found to withstand the necessary temperature and is being tested with synthetic solutions.

234-5 Process

Research has been completed on a method for the determination of macro concentrations of oxalate in 234-5 Process materials. The method involves precipitation of lanthanum oxalate and titration of the dissolved precipitate and provides satisfactory accuracy and precision. A suitable method for the determination of small concentrations of oxalate appears to be one in which the oxalate is reduced with metallic magnesium and treated with 2, 7 dihydroxynaphthalene to produce a color that is subject to photometric measurement.

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Completion of investigations of the carrier concentration method for the spectrographic determination of impurities in 234-5 Process materials has provided an independent procedure for checking certain results from the cupferron-copper spark method. Preliminary evidence indicates that the carrier concentration method is more reliable and thus provides an improved means for the determination of several elements.

Miscellaneous Analytical Research

A method has been requested by the Pile Engineering Section for automatically monitoring the boron content of a solution that is to be used in experiments directed toward increased pile control. The most promising approach to this problem appears to be one in which a measured quantity of a colored material is added to the solution so as to provide photometric means for continuously determining the extent of dilution of the solution. Concentration curves have been prepared for several such colored substances and suitable optical filters have been recommended.

The Pile Physics Section has requested that consideration be given to methods for determining the content of certain impurities in carbon dioxide that is to be used for pile atmosphere. Several brief tests have shown that infrared absorption may provide a rapid and convenient technique for such analyses. Considerable thought was given to the question of obtaining a representative sample of carbon dioxide from the cylinder, and arrangements were made for a chemist from the Analytical Research Groups to consult with personnel of the Air Reduction Corporation on this problem.

A request from the Design Division for a review of methods for the quantitative determination of gadolinium in steel and in titanium metal has been met, and several promising methods have been selected for trial.

STATISTICAL STUDIES

300 Area Operations

Statistical analysis of data submitted by the General Chemical Laboratory revealed that sampling and analytical errors are small compared to day-to-day differences in the copper content of the bronze baths in Bldg. 313. A statistical study of BFC-6 oxide analyses showed that recent precision has improved.

The Bldg. 313 test of tool breakage using 3/16" and 5/16" cut-off tools alternately was completed. A substantial reduction in TX scrap from slug machining has been noticed in the statistical control charts during the running of this test.

The test designed for the P Division to determine the precision of weighing SF material for accountability purposes has been completed. Statistical analysis revealed that differences in reading between men are negligible compared to the systematic error of the scale.

Metallurgy & Control Division

Correlations run between the silicon content of Hanford billets and the constituents of the melt plant charge used to produce these billets revealed no significant relationships. A "t" test between the average silicon content of Hanford recast billets produced from November 1948 to March 1949, and those produced from March 1949 to August 1949, revealed no significant difference. "T" tests between average silicon content of Electro-Metallurgical and Mallinckrodt virgin billets for the same periods revealed significantly higher averages for the latter period. Data submitted by the 300 Area Plant Assistance Group on the silicon content of TX scrap during briquetting were analyzed statistically. It was found that Hanford TX scrap has on an average 30 ppm more silicon content than Electro-Metallurgical or Mallinckrodt TX scrap.

100 Area Operations

Study of the xenon equation for the Pile Physics Section has been continued. More exact data have been obtained for a special B pile shutdown during 1944, and the problem adapted for IBM computation.

An investigation has been made of the precision of the Test Pile in graphite testing by an analysis of routine determinations of the reactivity of "S" and "F" standards.

Several numerical solutions of systems of equations have been obtained for the Pile Physics Section. The numerical solution of a boundary value problem has been investigated for the Design and Construction Divisions.

200 Area Operations

A study of the correlation between the total count reported transferred to the 6-3 tank and the total count reported from the first 6-3 tank sample indicated the presence of a random measurement error of about 6% in 6-3-MR results. This is a confirmation of the estimate obtained in the prior study of 6-3 and 8-1 total counts. (Doc. HW-14691) Results of the recent test to determine the error associated with the operation of a typical sampling system in the 200 Area Canyon Buildings, through the sampling of acid solutions in the 19-4 tank, gave a sampling error estimate of $\pm 1.30\%$. This estimate agrees with that obtained from the 6-3-MR Duplicate Sampling Test (Doc. HW-14284).

Statistical control of within-chemist precisions was extended to include the analyses of all samples from the extraction and decontamination cycles in the 200 Area separations process, and results are now reported in the 200 Area Statistical Quality Report of Analytical Precision. Continuing studies of coincidence losses provided further evidence of unexplained significant losses at low counting levels.

Statistical analysis of differences between the AT chemical assay and the AT chemical assay and the AT assay predicted from specific gravity showed that the variation of the differences has not been random during the past three months. The trends which are apparent indicate the presence of factors

systematically influencing results. Efforts to establish a possible connection between Hanford-Los Alamos product differences and the purity and decontamination of AT solution failed to disclose any relationship.

At the request of the Chemical Research Section, a review was made of several statistically derived equations relating density to composition of Redox solutions, to determine for each particular type of Redox sample the most suitable equation for predicting the UNH content.

LIBRARY AND FILES

General

Consultations were held with the Kellex Corporation in New York City regarding disposition of the Job 11 classified records following termination of that contract by the New York Office of the AEC. The records will be inventoried and document accountability transferred to General Electric at Hanford. In addition, discussions were held pointing toward correlation of the Classified Files procedures at Kellex with those in use at Hanford Works, in order that the essential document requirements of the prime contractor may be met.

Plant Library

To acquaint Plant personnel more fully with the reference facilities available through the Technical Library, a weekly column has been started in the Works News. This will list a selection of interesting reference questions in the unclassified field which were answered during the week by the reference staff of the Library.

A fine run of the "Zeitschrift fur Angewandte Chemie," complete to 1945, the last year of publication of this famous German periodical, was received.

Library statistics were as follows:

	<u>September</u>	<u>October</u>
Number of books on order received	224	165
Number of books fully cataloged	192	223
Number of bound periodicals processed but not fully cataloged	5	33
Pamphlets added to pamphlet file	74	15
Miscellaneous material received, processed, and routed (Included maps, photostats, patents, etc.)	23	15
Books and periodicals circulated	1265	1507
Unclassified reports processed	116	202
Unclassified reports circulated	133	116
Reference services rendered	853	796

	<u>Main Library</u>	<u>W-10 Branch</u>	<u>Total</u>
Number of books	5051	1976	7027
Number of bound periodicals	3489	100	3589

Classified Files

Furthering a continued effort to simplify Files procedures, three new office forms were developed: (1) A Certificate of Destruction for Classified Material, which will find increasing usefulness in plans to decrease substantially the volume of classified documents presently carried on inventory; (2) a Certificate of Destruction for Deleted Pages, which will eliminate the necessity of having classified documents returned to the files for deletion and destruction of incorrect pages (this destruction will be carried out by the offsite recipient of the document, and confirmed by the use of this form); and (3) a gummed Red Label sticker was mimeographed in quantity, using a perforated mimeograph sheet; use of this inexpensive label will save considerable Files time, since they were previously typed as needed.

A list of UAP Process subject headings was received from the Technical Information Branch of the AEC at Oak Ridge for review. These were discussed and confirmed with the technical personnel involved. Similarly, a series of trial form sheets suggested for the fourth revision of CA-1927 were received and reported on by the Technical Abstracting Unit.

A memorandum outlining the standardization of the printed cover and the inside format of research and development reports issued by the Technical Divisions, and setting forth the responsibilities of the Information Group in this program, was prepared and distributed. Approximately ten reports are in process of issuance using the improved format.

A fifth edition of the Standard Distribution List (M-3679) was received. This latest issue deletes a number of subject categories, adds a few new ones, and re-defines others, in accordance with a number of suggestions made to the Division of Research by the Hanford Works Information Group.

Work statistics for the Classified Files were as follows:

	<u>September</u>	<u>October</u>
Documents routed	13,019	12,117
Documents issued	4,699	5,212
Reference services rendered	3,313	3,204
Reports abstracted	745	755
Registered packages prepared for offsite	321	314
Inter-area mail sent via transmittal	12,615	13,010

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Files Assistance Unit statistics were as follows:

Ditto masters run	686	711
Mincograph stencils run	436	1,248
Ditto master copies prepared	26,369	26,939
Mineographed copies prepared	28,482	42,858
Volume of mail handled	18,190	19,303

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.

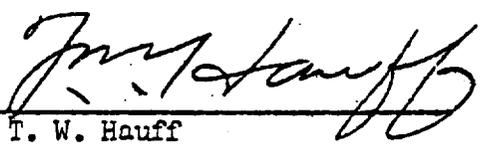
Inventor

Item

G. J. Alkire

A Micro Polarographic Cell

Signed


 T. W. Hauff
 Division Head

MEDICAL DIVISIONS

OCTOBER 1949

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Summary

The Medical Divisions' roll decreased by 12 from 394 to 382.

The following meetings were attended:

A. E. C. meeting for Directors of Medicine & Biology - University of California - Berkeley, by P. A. Fuqua, M. D.

Washington & Oregon Hospital Association meeting - Portland, Oregon, by L. C. Pullen and W. T. Pope.

American Dental Association annual meeting - San Francisco, by Dr. H. H. Pitluck.

American Board of Surgery examinations, Seattle, by Drs. R. R. De Niccla and B. Lih.

American Board of Internal Medicine examinations - Chicago, by Dr. A. G. Corrado.

Academy of Ophthalmology annual meeting - Chicago, by Dr. L. L. Davis.

State Public Health meeting - Spokane, one day, by Dr. R. R. Sachs and several members of his staff.

F. B. I. School for Crime Prevention & Juvenile Delinquency - Spokane, by three social service workers.

American Dietetic Association annual meeting - Denver, by Miss E. Fariss.

Educational child health clinics - University of Washington, by Miss O. Alderin.

Industrial

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

Employee physical examinations decreased by 18% to 2424, while first aid treatments remained about the same, 6108, due to an increase in non-occupational treatments.

Two major and twelve sub-major injuries were treated. One of the major and four of the sub-major injuries were sustained by G. E. employees. By an unusual coincidence, the injury statistics were an exact duplication of those for September.

Sickness absenteeism dropped slightly to 1.26%, while total absenteeism increased slightly to 2.08%. The latter reflects a trend of slightly increased absenteeism during the past several months, as compared with corresponding months of the previous two years.

The health topic for November stresses the value of the company's overall health program to the employee.

Six positive tests for urine sugar were obtained in the survey covering 918 members of employee families.

Communities - Hospital and Clinics

The average daily hospital census decreased from 64.8 to 59.5. This is 47% less than for October, 1948, and is a greater decrease than the 35% decrease in population served.

MEDICAL DIVISIONS

OCTOBER 1949

Summary (continued)

A new employee insurance plan giving much greater benefits is to be effective in December. It is felt that many elective cases are being postponed until that date. This would account for the relatively low census.

Clinic visits decreased by 9% to 6222. This is 25% below the twelve months' previous figure. Dental visits decreased 20% over the previous month to 2088.

Kadlec Hospital Women's Auxiliary was organized during the month.

Public Health

"Polio" incidence has decreased to about one a month, with the total being eleven to date this year.

Costs (September)

The net cost of operating the Medical Divisions (before assessments of workman's compensation costs to other divisions) was \$107,177., a decrease of \$7,006. compared to the previous month, and \$12,460. under the budget estimate. The improvement resulted from decreased direct and transferred expense which more than compensated for decreased revenue.

The net cost of the Richland community medical program was \$19,656., a decrease of \$8,672. but \$1,238. above the budgeted estimate. The improvement resulted from decreased direct and transferred expense, more than compensating for decreased revenue. Kadlec Hospital cost was \$13,905., a decrease of \$8,114. While revenue was off by \$3,147., expenses were cut by \$11,129. Hospital cost was below the budgeted figure by \$2,868. Clinic cost was \$5731. a decrease of \$557. due to decreased direct and transferred expense.

MEDICAL DIVISIONS

OCTOBER 1949

Plant Medical Division

General

The total number of industrial examinations continued to decrease from 2863 in September to 2424 in October. First aid treatments remained about the same, 6108 as compared to 6354. There were two major injuries and twelve sub-major injuries treated during the month.

The North Richland Industrial Division closed on October 7th. Industrial medical service for construction employees continued through Kadlec Hospital.

One Washington State Dept. of Labor hearing was attended during the month, and one physician attended the A. E. C. meeting in Berkeley, California for Directors of Medicine and Biology.

The subject of the industrial physicians' scientific meeting was a "summary of the metabolism of fission products".

The Health Activities Committee met on October 20th. A member of the Employee & Community Relations Division was present to discuss their responsibilities in regard to the absent employee. The coming month health topic "Health Education" was discussed from the standpoint of value in industry. Material on this subject was prepared for general discussion and distribution throughout the plant. The Diabetes Detection Survey for employees' families was patronized by 918 people. There were six positive tests and these cases are now under investigation. The September absenteeism percentage for all reasons was reported as 2.08%, but for sickness only 1.26%.

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

<u>Physical Examinations</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Pre-employment (G.E.).....	149	93	1336
Annual.....	482	492	4672
Food Handlers.....	56	58	596
Sub-contractors.....	1339	910	18201
Rechecks.....	133	147	2281
Interval Rechecks (Area).....	560	567	5473
Terminations & Transfers (G.E.).....	133	93	2095
Government.....	11	64	145
Total.....	<u>2863</u>	<u>2424</u>	<u>34799</u>

MEDICAL DIVISIONS

OCTOBER 1949

<u>Clinical Laboratory Examinations</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Government.....	224	548	1128
Pre-employment, terminations, transfers.	2322	1429	37977
Annual.....	2764	2851	28219
Rechecks (Area).....	2722	2925	27952
First Aid.....	33	10	440
Plant Visitors.....	0	0	4
Clinic.....	3079	2807	35051
Hospital.....	2248	1897	28929
Public Health (Inc. food handlers).....	105	1002	3747
Total.....	<u>13497</u>	<u>13469</u>	<u>163447</u>

X-Ray Examinations

Government.....	7	64	122
Pre-employment, terminations, transfers.	313	188	5135
Annual.....	494	482	4809
First Aid.....	129	93	2148
Clinic.....	321	251	3292
Hospital.....	103	107	1997
Public Health (Inc. food handlers).....	41	52	677
Total.....	<u>1408</u>	<u>1237</u>	<u>18180</u>

Electrocardiographs

Industrial.....	55	63	1340
Clinic.....	9	7	126
Hospital.....	12	13	247
Total.....	<u>76</u>	<u>83</u>	<u>1713</u>

Allergy

Skin Tests.....	22	6	415
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First Aid Treatments

Occupational Treatments.....	549	506	12560
Occupational Retreatments.....	2312	1792	47152
Non-occupational Treatments.....	3493	3810	45819
Total.....	<u>6354</u>	<u>6108</u>	<u>105531</u>

Major Injuries

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

Sub-major Injuries

General Electric.....	4	4	40
Sub-contractors.....	8	8	232
Total.....	<u>12</u>	<u>12</u>	<u>272</u>

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MEDICAL DIVISIONS

OCTOBER 1949

<u>Absenteeism</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Weekly employees, all causes.....	1.92%	2.08%	2.29%
Weekly employees, sickness only.....	1.29%	1.26%	1.53%
Total days lost by males due to sickness..	855	1157	12724
Total days lost by females due to sickness	654	699	8738
Total days lost due to sickness.....	1509	1856	21461
Investigation:			
Total calls requested.....	16	15	188
Total calls made.....	16	15	188
No. absent due to illness in family....	0	0	2
No. not at home when call was made.....	1	3	22

Village Medical Division

General

Medical Divisions' roll decreased from 394 to 382, a reduction of 12.

The average daily census was 59.5 as compared to 64.8 for September, and 87.7 for October a year ago.

Clinic visits decreased from 6912 to 6222, which is a 9% decrease as compared to the previous month, and 25% below a year ago. North Richland Medical Center accounted for 3% of the total.

The net expense of the Richland community medical program for September was \$19,656. as compared to \$28,328. for August. Breakdown is as follows:

Kadlec Hospital expense	\$ 13,905.
This is a decrease of \$8,114. due primarily to increase in fee schedules.	
Richland clinic expense	5,751.
This is a decrease of \$557. due to decreased direct and transferred expense.	

Hospital occupancy is still running much lower than our original estimates. This is reflected in decreased revenue. For example, the budgeted revenue for September was \$50,132. and actual revenue was \$33,725.

The new G. E. health and accident insurance, which should become available in December, will undoubtedly increase our revenue since elective surgery is being postponed by many patients until the new insurance is in effect.

An organizational meeting of the proposed Kadlec Hospital women's auxiliary was held and 71 women attended. This was an encouraging turnout, and we are optimistic that this group will become organized and serve the hospital.

MEDICAL DIVISIONS

OCTOBER 1949

<u>Clinic Visits</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Medical.....	1177	1072	14480
Pediatrics.....	774	650	7520
Well Babies.....	107	90	1683
Surgical.....	635	518	7768
Gynecological.....	464	519	5789
Obstetrical (new).....	78	67	889
Obstetrical (recheck).....	863	759	8598
Venereal Disease.....	16	16	1430
Ear, Nose & Throat.....	369	414	4606
Eye.....	288	102	2580
Visits handled by nurses.....	1278	1333	15336
Night clinic visits.....	863	682	8248
Total.....	<u>6912</u>	<u>6222</u>	<u>78927</u>
Average clinic visits per day.....	266	240	304
<u>Source of Richland Clinic Visits</u>			
Richland.....	90.0%	91.0%	
North Richland.....	4.0%	3.5%	
Other.....	6.0%	5.5%	
<u>Home Visits (Pay Cases)</u>			
Doctors.....	116	226	2323
Nurses.....	130	130	3152
Total.....	<u>246</u>	<u>356</u>	<u>5475</u>
<u>Kadlec Hospital</u>			
<u>Census</u>			
Admissions.....	389	343	4874
Discharges:			
Surgical.....	74	70	1007
Medical.....	38	63	902
Obstetric & Gynecologic.....	128	108	1134
Eye, Ear, Nose, Throat.....	42	22	586
Pediatrics: Children.....	31	26	407
Newborn.....	82	75	789
Total Discharges.....	395	364	4925
Patient Days.....	1946	1847	25144
Average Stay.....	5.0	5.3	4.9
Average Daily Census: Adults.....	52.2	45.3	
Infants.....	12.6	14.2	
Total Average Daily Census.....	64.8	59.5	82.9
Discharged against advice.....	2	0	20
One-day Cases.....	59	37	840
Occupancy Percentage: Adults.....	58.6%	45.3%	77.8%
Infants.....	157.5%	177.0%	169.8%
Admission Source: Richland.....	76.9%	78.4%	67.5%
North Richland.....	8.0%	7.8%	14.4%
Other.....	15.1%	13.8%	18.0%

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MEDICAL DIVISIONS

OCTOBER 1949

<u>Operations</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Transfusions.....	72	39	486
Eye, Ear, Nose, Throat.....	26	16	491
Dental.....	0	2	15
Casts.....	24	15	208
Minors.....	56	40	641
Majors.....	36	21	528
 <u>Pathological Slides</u>			
Hospital.....	0	0	747
 <u>Vital Statistics</u>			
Deaths.....	7	5	57
Deliveries.....	79	73	779
Stillborn.....	2	1	6
 <u>Physiotherapy Treatments</u>			
Clinic.....	95	121	1088
Hospital.....	91	152	622
Industrial: Plant.....	141	197	2287
Personal.....	28	20	537
Total.....	<u>355</u>	<u>490</u>	<u>4534</u>
 <u>Pharmacy</u>			
No. of prescriptions filled.....	2482	2419	31583
 <u>Patient Meals</u>			
Regulars.....	2738	2487	33738
Lights.....	41	30	1226
Softs.....	719	707	11580
Surgical Liquids.....	67	73	915
Tonsils & Adenoids.....	67	0	1129
Specials.....	678	625	10071
Liquids.....	126	94	1960
Total.....	<u>4436</u>	<u>4016</u>	<u>60619</u>
 <u>Cafeteria Meals</u>			
Noon.....	2060	2006	23421
Night.....	224	258	3004
Total.....	<u>2284</u>	<u>2264</u>	<u>26425</u>

MEDICAL DIVISIONS

OCTOBER 1949

<u>Nursing Personnel</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>
First Aid Nurses.....	36	33
Clinic Nurses.....	15	14
Public Health Nurses.....	12	11
Hospital General Nurses.....	60	63
Aides and Orderlies.....	36	36
Total.....	<u>159</u>	<u>157</u>

Public Health Division

General

Two cases of poliomyelitis, one a sub-clinical case and one a respiratory case charged to Yakima County, were reported. One case reported last month remains in the hospital for physical therapy. Two others were sent outside of the area for special physical therapy, braces, and ultimately orthopedic surgery. All other cases have made a good recovery except for the one death reported previously. A special orthopedic clinic was held by an orthopedist to review all former poliomyelitis cases.

The other communicable disease of significance was chickenpox, which increased in incidence by four times. This reflects the incidence of disease throughout the state. Nursing home visits increased 12%, due chiefly to the increase of communicable disease.

Diabetes check week was completed with 918 persons submitting urino specimens for examination for sugar. Five were positive for sugar.

The mosquito control program for the season came to a close with the treating of 10,000 acres at a cost of approximately \$10,000., which was the budget figure for the year.

<u>Administration</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Newspaper Articles.....	15	20	178
Committee Meetings.....	5	2	68
Attendance.....	20	15	750
Staff Meetings.....	3	4	25
Lectures & Talks.....	12	2	43
Attendance.....	232	100	3171
Conferences.....	25	25	287
Attendance.....	200	100	1295
Radio Broadcasts.....	0	0	3

MEDICAL DIVISIONS

OCTOBER 1949

	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
<u>Immunizations</u>			
Cholera	0	0	3
Diphtheria	350	277	2353
Influenza	21	136	162
Rocky Mt. Spotted Fever.....	0	0	86
Smallpox	102	72	931
Tetanus	69	64	189
Typhoid	3	2	35
Whooping Cough	2	0	4
Vollmer Patch Test.....	7	0	14
Total.....	<u>554</u>	<u>551</u>	<u>3777</u>
<u>Social Service</u>			
Cases carried over.....	86	80	857
Cases admitted.....	23	10	202
Total.....	<u>109</u>	<u>90</u>	<u>1059</u>
Cases closed.....	29	7	198
Remaining case load.....	<u>80</u>	<u>83</u>	<u>861</u>
Sources of referral:			
Public Health.....	4	4	37
Doctors.....	11	4	87
Hospital.....	0	2	4
Interested person.....	2	0	17
School.....	0	0	5
Personnel Office.....	0	0	1
Personal application	1	0	18
Housing.....	0	0	2
Other agency.....	4	0	18
Miscellaneous.....	1	0	14
Total.....	<u>23</u>	<u>10</u>	<u>203</u>
<u>Sanitation</u>			
Inspections made.....	159	191	2660
<u>Bacteriological Laboratory</u>			
Treated Water Samples.....	153	158	1920
Milk Samples (Inc. cream & ice cream)	146	113	1219
Other bacteriological tests.....	186	160	2481
Total.....	<u>485</u>	<u>431</u>	<u>5620</u>

MEDICAL DIVISIONS

OCTOBER 1949

<u>Communicable Diseases</u>	<u>Sept. 1949</u>	<u>Oct. 1949</u>	<u>Year to date</u>
Amoebic Dysentery.....	0	0	3
Chickenpox	17	65	645
German Measles.....	4	2	191
Gonorrhoea.....	1	0	30
Impetigo.....	1	1	8
Influenza.....	0	0	9
Measles.....	0	1	375
Meningococcic Meningitis.....	0	0	3
Mumps.....	2	0	28
Pediculosis.....	0	0	12
Pinkeye.....	0	0	33
Poliomyelitis.....	9	1	11
Ringworm.....	1	7	25
Scabies.....	0	1	9
Scarlet Fever.....	0	1	13
Syphilis.....	3	0	81
Tuberculosis.....	0	1	9
Vincent's Infection.....	1	0	3
Whooping Cough.....	0	1	6
Total.....	<u>39</u>	<u>81</u>	<u>1494</u>
Total No. Nursing Field Visits.....	685	761	11657

Dental Division

General

Dental visits decreased 20% over the previous month, and approximately 39% over a year ago.

Patients treated.....	2616	2088	27911
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MEDICAL DIVISIONS

Personnel Summary

October 31, 1949

	T O T A L	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	32	2	5.8	18.6	1	1	1.4		.3	.3	.3	.2	.2	.5	.4
Dentists	10			9			1								
Nurses	121	2	12	13	61	9	1	2	1	1	4	4	4	5	2
Nurse Aides	29		1	2	25	1									
Orderlies	7				7										
Tech.-Dent. Hyg.	1			1											
Tech.-Clin. Lab.	16				12.8				.4	.4	.4	.4	.8	.8	
Tech.-X-Ray Lab.	5				5										
Tech.-Bact. Lab.	1				1										
Tech.-Phy. Ther.	2				2										
Accountant	1	1													
Secretary	2	2													
Cler. Wk Leader	2	1			1										
Steno-Typist	10	3	2		3	2									
Off.Mch.& Tel.Opr	7	6	1												
General Clerk	60	21	15	9	9	1		1	.5	.5	1	.5	.5	1	
Pharmacist	4				4										
Dietitian	2				2										
Cook	6				6										
Kitchen Worker	10				10										
Soc. Serv. Coun.	3					3									
Sanitarian	3					3									
Health Educator	1					1									
Dental Asst.	9			8			1								
Janitor	19	1	5.3	3	9	.7									
Bacteriologist	2				2										
Records Supv.	2	2													
Acctg. Supv.	3	3													
Admin. & Assts.	3	3													
Others	9			3	6										
Total	382	47	42.1	66.6	166.8	21.7	4.4	2	2.3	2.2	5.2	5.6	5.1	6.8	4.2

(One technician - Phys. Ther. working half-days only.)

Number of employees on payroll:

Beginning of month	394
End of month	382
Net decrease	12

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DECLASSIFIEDHEALTH INSTRUMENT DIVISIONSOCTOBER, 1949Summary

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

The Operational Division report indicates the need for improved hazard control in the 200 Areas, especially in the 234-5 Building. In the 200 Areas, pocket ion chamber coverage was limited to employees having access to the T, U, and B Exclusion Areas, as an economy measure, consistent with proper radiation protection.

In the Development Division, atmospheric monitoring and land and vegetation contamination results were at normal levels. The increase in active particle deposition, reported last month, has definitely been attributed to a foreign source.

In biological monitoring, animals collected within a thirty mile radius of the 200 Area stacks showed slight but definite thyroid activity. Other programs in biology proceeded without incident.

Conclusions drawn from the Chalk River conference on permissible exposures will force even more conservatism in radiation management.

Health Instrument Divisions

DECLASSIFIED

HEALTH INSTRUMENT DIVISIONS

OCTOBER 1949

Organization

The composition and distribution of the force as of 10/31/49 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	9	4	14	6	0	39
Engineers	4	3	12	3	21	11	8	2	0	64
Clerical	0	0	1	1	1	2	3	2	0	10
Others	9	12	26	12	62	29	50	10	8	218
Total	14	16	41	18	93	46	75	20	8	331

<u>Number of Employees on Payroll</u>	<u>October 1949</u>
Beginning of month	314
End of month	<u>331</u>
Net change	plus 17

Added to the roll were 5 engineers, 2 technical graduates, an inspector, and a technologist for expanded survey work, and 8 general clerks and 2 badge workers for personnel monitoring. The biology and development divisions added 2 engineers, a laboratory assistant, and a secretary. Deleted from the roll were an engineer, a laboratory assistant, a general clerk, a technical graduate, and three technologists.

General

A meeting was held with Mr. A.M. Piper, October 27, to resolve the immediate course of action on waste disposal by cribs, and to plan necessary hydrological studies. A reasonable conclusion is that cribbing may continue on a temporary basis, provided that alternate disposal methods are diligently sought, and the hydrology and soil science studies amplified.

The main conclusions of the Chalk River conference on permissible exposures were detailed to the Special Hazards Committee, and to all members of the H.I. Divisions in two meetings. All evidence continues to force an even more conservative position on exposure, which will ultimately be reflected in higher budgets for the divisions.

The field reports continue to show incomplete management of radiation hazards especially in the 200 Areas. Those operations involving potential exposure to plutonium in particular will clearly fail to meet the new long-term standards.

Health Instrument Divisions

DECLASSIFIED

The increase in the number of active particles reported last month has been unequivocally ascribed to a foreign source. Through the cooperation of the AEC, Dr. W.D. Urry visited the site to confirm the local conclusions.

Three Class I Special Hazards Incidents were investigated. One involved a possibly contaminated minor injury; one skin contamination from an undetermined source; and one when a contaminated water line was broken without proper protective measures.

The following trips were reported:

L.K. Bustad - Deaconess Hospital, Boston; Brookhaven National Laboratory; Naval Medical Research Inst., Bethesda; and Argonne National Laboratory.

R.J. Gandy - Disaster stockpile conference, Chicago.

G.E. Whipple, Jr. - University of Rochester; Oak Ridge National Laboratories; and Schenectady.

H.A. Kornberg - Berkeley - Laboratory directors meeting.

Visitors included Dr. W.D. Urry, Mr. A.M. Piper, L. Gemmel (Brookhaven), and T.H. Thomas and W.H. Jordan (Oak Ridge).

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>
none	none

Health Instrument Divisions

DECLASSIFIED

OPERATIONAL DIVISION

100 Areas

General Statistics

	<u>September</u>				<u>October</u>					1949 to Date
	<u>B</u>	<u>D</u>	<u>F</u>	<u>Total</u>	<u>B</u>	<u>D</u>	<u>F</u>	<u>H*</u>	<u>Total</u>	
Special Work Permits	655	539	708	1,902	563	690	469	705	2,427	20,267
Routine & Spec. Surveys	464	431	769	1,664	432	392	469	225	1,518	16,060
107 Effluent Surveys	94	90	87	371	91	93	45	35	264	2,808
Air Monitoring Samples	101	104	114	319	92	96	106	25	319	3,166

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	0-100
Average beta dosage-rate (mrep/hr)	1.	0.8	1.0	.17
Average gamma dosage-rate (mr/hr)	2.1	2.2	2.7	.38
Average total dosage-rate (mrep/hr)	3.1	3.0	3.7	.55
Average integrated dose in 24 hrs. (mrep)	74	72.0	89	13.2
Maximum integrated dose in 24 hrs. (mrep)	84	108.0	103	26
Maximum integrated dose in 24 hrs. (mrep) (1949)	108	132	106	26

*100-H Area's average activity since October 21, 1949.

100-B Area

Pile and Associated Buildings

Following start-up on October 19, 1949, high air-borne contamination was observed in the storage and transfer area resulting from failure to replace the plug in the #4 drain. This same condition occurred previously in January, March, and August of this year. Several cases of personnel contamination occurred before the condition was corrected. This contamination decayed with the usual short half-life of about 35 minutes.

Gas activity up to 500 mrep/hour was observed in the #3 drier room during work on the condensate line and necessitated immediate evacuation of personnel from the room. Investigation revealed that the equalizer valves had not been closed. No over-exposures were indicated and respiratory protection was worn at all times. The incident was caused by failure to follow the lock and tag procedure which was instituted following a similar incident on June 1, 1949. A formal investigation of the earlier incident was suggested, but only an informal investigation was held. It is evident that more publicity should have been given to this condition.

Health Instrument Divisions

DECLASSIFIED

Maintenance work to the vertical safety rod system resulted in exposure rates as high as 500 mr/hour. Clean-up work in the "B" experimental hole resulted in hand exposure at the rate of 150 mrep/hour and air contamination to the extent of 2.7×10^{-5} $\mu\text{c}/\text{liter}$; assault masks were worn.

The radiation beam at the top far edge of the pile showed no appreciable increase in intensity. The γ dosage-rate is about 12 mr/hour.

P-10 Operations - 108 Building

Contamination surveys in the can-opening room revealed a maximum concentration of 80,000 c/m in the hood and 600 c/m on the floor outside of the hood.

Containers of calcium chloride were placed in the Operating Gallery, Hood Room and Can-Opening Room and later analyzed for tritium oxide. The results are tabulated below:

<u>Location</u>	<u>Maximum Concentration</u>
Operating Gallery	Approximately 1 $\mu\text{c}/\text{liter}$ of sample
Hood Room (Third floor)	Approximately 7.5 $\mu\text{c}/\text{liter}$ of sample
Can-Opening Room	Approximately 4.4 $\mu\text{c}/\text{liter}$ of sample

100-D Area

Activity in the stack air increased to two and one-half times the normal activity following the pile start-up on October 13, 1949. The increase resulted from failure to close the vent valves in the headers of the third safety system. The activity returned to normal after the valves were closed.

Following the removal of a process tube, active gas was observed emanating from the open channel. Investigation revealed that the division valves had leaked during pressure testing of the gas lines in the tunnel. The condition was easily corrected.

Personnel were exposed momentarily to a maximum dosage-rate of 1 rep/hour during the removal of graphite samples from a process tube channel. In the subsequent broaching of this channel several persons had their wrists contaminated, a maximum count of 2,000 c/m at one inch was reported. The contamination was removed by washing.

Health Instrument Divisions

DECLASSIFIED

The beam at the top far edge of the pile showed a gamma intensity of about 2 roentgens per hour. This represents an increase over the intensity for the previous month, but is about the same as recorded in August. Neutron readings were also a little higher than in September. Total dosage-rate in the beam was about 3 rem per hour.

Neutrons of energies between the thermal and fast levels are being observed in the beam at the top far edge of the pile and at the instrument cubicles on the minus nine foot level far. Evaluation of the health hazard of such neutrons is still inadequate.

100-H Area

Charging of the pile was started on October 4, 1949, and completed on October 13, 1949. When the charging was about one-fifth complete, the pile was operated dry at a power level of 40 KW. At this level, some slow and intermediate neutrons were observed at the front of open process tubes and a gamma intensity of 800 mr/hr was observed from the open "B" experimental hole. After shutdown from this level, Technical Division personnel removed foils from this hole and were exposed to high dosage-rates. The tip of the foil rod showed a dosage-rate greater than 35 rep/hr at $\frac{1}{2}$ inch including 5 roentgens per hour at two inches. Individual foils gave up to 300 mr/hr at two inches. A Health Instrument representative did not arrive until after the foils were removed, due to a misunderstanding as to the nature of the job. Several cases of hand contamination resulted from the incident but were easily reduced. No overexposure to personnel was indicated.

The pile was operated at 5, 10, 25, and then at 100 MW. Almost all of the openings on the far side of the pile were found inadequately shielded. The maximum activity was obtained at the "C" experimental hole, and the dosage-rates here were 40 mr/hr for gamma and 25 mrem/hr for slow neutrons. No attempt was made to determine the presumably high fast neutron flux because this necessitated unnecessary exposure to a beam which obviously had to be eliminated. Very high fluxes of intermediate neutrons were observed.

At 100 MW a dosage-rate of 15 mr/hr was observed on the concrete pad just outside the pile building and adjacent to the storage area where the effluent water line leaves the building. Lead shielding was added at this location before the power was raised above 100 MW. Air filter samples taken on top of the pile, in the Rear Elevator Machinery Room, the Storage Area, and the Sample Rooms indicate backup of airborne contamination from the effluent line. This condition is common in the other pile areas.

The #3 pump in the Gas Instrument Room leaked and radio-argon escaped into the room. The activity at one of the drier towers in the Gas Purification Wing was 400 mr/hr at two inches.

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Health Instrument Divisions

DECLASSIFIED

Following several scrams of the pile at 100 MW, active gas was spread throughout most of the building. Proper air balance in the building may remedy this condition. Gamma radiation from the vertical rods following the scrams was observed in the work area.

Contamination of Maintenance Division personnel occurred on two different occasions while working on the "B" experimental hole water line. On the first occasion, the contamination was attributed to poor handling of rubber surgical gloves. The contamination was removed with some difficulty. In the second case, maintenance personnel broke into the contaminated portion of the water line and drained the active water from the line into a bucket. Some of the water spilled onto the experimental level floor and to the zero level decontamination room below. Dosage-rates on floor and other surfaces were as high as 1 rep/hour at $\frac{1}{2}$ inch. Two Maintenance Division employees working on another job on the experimental level received contamination to their persons and clothing. The permit for the job was for work on uncontaminated portions of the water line. A formal investigation of the incident has been requested. Personnel contamination was satisfactorily removed.

100-F Area

Maintenance work during this period included the replacement of the #5 horizontal shim rod, two vertical safety rod thimbles and two process tubes. Contamination was spread to the minus nine foot level (near) when water from the #5 rod leaked through the floor of the inner rod room. Dosage-rates as high as 600 mrep/hour at surface were observed on the white powder which was the residue of this contaminated water. A significant decrease in exposure rates during thimble removal was brought about by a 24-hour waiting period after pile shutdown. However, air contamination was considerable and one air sample showed 1.3×10^{-4} $\mu\text{c/liter}$. Small pieces of radioactive aluminum* were found on the work area floor after one of the cans containing a thimble section was dropped.

Rear face contamination was unusually high and tip-offs gave surface dosage-rates up to 20 rep/hour including 100 mr/hour at 2 inches. Positive indications of alpha-emitting contamination was observed in water samples from two process tubes and was tentatively identified by the Methods Laboratory as Polonium. Neither tube had been loaded with bismuth pieces, so the source of the contamination is not known.

Experimental level work continued to result in high exposure rates, individual samples giving intensities as high as 3.5 roentgens/hour through 4 inches of lead.

The installation of an experimental algae filter is almost complete. The tie-in with the retention basin effluent lines was completed without incident.

The beam at the top far edge of the pile showed little change in intensity. The gamma dosage-rate is about 3 roentgens/hour.

8 * Activity due to trace elements in the aluminum.

Health Instrument Divisions

DECLASSIFIED200 Areas, T and B PlantsGeneral Statistics

	<u>September</u>			<u>October</u>			<u>1949</u>
	<u>T</u>	<u>B</u>	<u>Total</u>	<u>T</u>	<u>B</u>	<u>Total</u>	<u>To Date</u>
Special Work Permits	265	310	575	290	354	644	7,431
Routine & Special Surveys	477	450	927	451	498	949	10,319
Air Monitoring Samples	418	828	1246	489	836	1325	11,961
Thyroid Checks	132	79	211	171	99	270	2,139

Canyon Buildings

In the T Plant, cells 18 and 19 were operated in the "semi-parallel" operation of the canyon process. The maintenance work to ready the cells resulted in widespread canyon deck contamination, with approximately 4.5 milligrams of product involved, and surface dosage-rates as high as 12 rep/hr reported. Decontamination of the deck removed a considerable amount of this contamination, and further efforts are in progress. Decontamination of sample equipment, work on the conductivity meter, and the interchange of jet assemblies, was done with a maximum exposure-rate of 750 mrep/hr reported. H.I. monitoring assistance was required while taking eleven samples; five of these were 8-4P samples. General contamination of up to 10,000 c/m was reported over a large area of the railroad tunnel and the craneway. Contamination in the range of 40,000 to 50,000 c/m was reported on the 75-ton crane bridge; and a dosage-rate of 60 mrep/hr at the surface including 6 mr/hr at 2 inches was found on the inlet air filter of the crane-cab. An air sample filter taken at section 12 during jett-ing in cells 8 and 9, with the blocks removed, gave a surface dosage-rate of 140 mrep/hr which represented air contamination of about 10^{-4} μ c/liter. Twelve other air sample filters taken while blocks were off, or immediately after re-placement of blocks, gave surface dosage-rates of from 6 mrep/hr to 100 mrep/hr, about 5×10^{-6} μ c/liter to about 5×10^{-4} μ c/liter. Fifty-six other canyon air samples indicated a fission product concentration above 10^{-6} μ c/liter. Four of the 38 air samples taken in the R-13 change house showed product concentrations above 10^{-11} μ g Pu/cc. The need to eliminate the possibility of canyon air back-ing up into the R-13 change house is clearly indicated.

In the B Plant, the interchange of the 13-1 and the 19-3 tanks resulted in considerable canyon deck contamination. The maximum exposure-rate of 6 rep/hr was recorded during deck decontamination and paper pickup. Dirt samples taken in the R-3 Danger Zone "ruptured waste line-June 1946" showed less than 500 c/m at a depth of 3 feet, 20,000 c/m at a depth of $3\frac{1}{2}$ feet, and 1.6 rep/hr includ-ing 100 mr/hr at 2 inches at a depth of 4 feet. General surface contamination of from 1500 to 40,000 c/m was reported from one end to the other of the crane-way and around the corners of all entry passages. This condition was attribut-ed to high airborne contamination in the canyon. Forty significant air sample results were obtained in the canyon, the maximum concentration reported was about 10^{-3} μ c f.p./liter which was obtained after jett-ing from 4-R to 6 cell with blocks removed from both cells. An air sample taken in the operating gallery during this condition showed 1.7×10^{-7} μ c f.p./liter. The craneway contamination reported above probably occurred during this period also.

Health Instrument Divisions

DECLASSIFIEDControl Laboratories

In the T Plant, a total of 146 items, not regulated with respect to handling, was found contaminated on surveys by H.I. and Technical personnel. Two spots of floor contamination with surface dosage-rates of 45 mrep/hr and several other lower-level spots were found in room 9; ten contaminated spots were found near the desk at the entrance to room 7. This contamination was attributed to a dropped sample disc in room 9. Floor contamination with a surface dosage-rate of 850 mrep/hr was discovered in room 7 as a result of finding a contaminated shoe. In addition, twenty-six other incidents of floor contamination were reported. One instance of skin contamination occurred as a result of contaminated rubber gloves used in the removal of a grossly contaminated rubber apron. Decontamination was successful. Of 90 air samples taken in room 7, six showed product concentrations above 10^{-11} μg Pu/cc, and seventeen indicated fission product concentrations above 10^{-7} μc /liter.

In the B Plant, 179 items, not regulated with respect to handling, were found contaminated by H.I. and Technical personnel. In addition, 39 contaminated floor locations were reported and successfully cleaned. Three instances of beta and one instance of alpha hand contamination occurred, and were successfully reduced.

Concentration Buildings

In the T Plant, approximately 850 μg of product was reported on and around the C-4 tank. The cause was assigned to the use of jets with greater capacity from cell 19 than were used from cell 17 in the 221-T Building. This condition was corrected. Smears of the cell roof fans showed a maximum of 750 d/m on the A-cell fan. Of 112 air samples taken, three were above 10^{-11} μg Pu/cc with a maximum concentration of 1.7×10^{-11} μg Pu/cc obtained in the F-10 room. Maintenance work included inspection of the E-4 dip leg and the F-22 centrifuge, and repairs to the E-2 centrifuge; all done without contamination spread.

In the B Plant, with the GE Cocoon placed on all tanks equipped with a shaft, the following table shows the estimated Pu discharge from roof vents per 24 hours:-

<u>10-1-49 to 10-10-49</u> (Before Cocooning)	<u>10-10-49 to 10-25-49</u> (After Cocooning)
A-cell vent 19 μg Pu/24 hrs.	7 μg Pu/24 hrs.
B-cell vent 52 μg Pu/24 hrs.	7.5 μg Pu/24 hrs.
D-cell vent 28 μg Pu/24 hrs.	8 μg Pu/24 hrs.

All samples taken at the Water Tower on 224-B roof were less than 1.0×10^{-11} μg Pu/cc.

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DECLASSIFIEDStack Area

In the B Plant, the dosage-rate on the elbow of the inlet duct to the sand filter increased from 700 mr/hr at 2 inches to 1.1 roentgens per hour at 2 inches during the month. A maximum surface exposure-rate of 20 rep/hr including 750 mr/hr at 2 inches was reported during the replacement of the 3-5R and the 4-5L orifices. The silver reactor, with surface dosage-rates up to 8 rep/hr reported on the inlet union, was changed with a maximum exposure-rate of 200 mr/hr.

Waste Disposal Areas

In the T Plant, the maximum dosage-rate on the outside of the casks was 4 mr/hr at 2 inches. As a result of face and neck contamination, sandblasting of the casks in the Industrial Burial Ground was postponed until adequate protective clothing for the job is obtained.

In the B Plant, Retention Basin samples taken by the Site Survey group indicated a 20 fold increase in activity. Investigation indicated contamination in the mud in the Retention Basin up to 20,000 c/m, and increased water flow may have stirred this up and accounted for the high result. Samples of individual tank jacket water showed no indication of a jacket leak.

Plant Laundry

A total of 108 spot and continuous air samples was taken with a maximum of 1.4×10^{-11} μg Pu/cc taken in the monitor room during the surveying and testing of the clothes from 224-T and 224-B. An air concentration of 9.2×10^{-6} μg U/cc occurred during the washing of clothing from the 300 Area. Fission product results of the samples taken were less than 1×10^{-7} μc /liter.

General

All thyroid checks were below the warning level.

The Isolation Building

<u>General Statistics</u>	<u>September</u>	<u>October</u>	<u>1949 to Date</u>
Special Work Permits	32	12	304
Routine & Special Surveys	218	320	2982
Air Monitoring Samples	432	424	4710

Operating Cells

Eighteen items, not regulated with respect to handling, were found contaminated by H.I. personnel. Two of these items were above 20,000 d/m; one a Poppy probe which had a total of approximately 10 μg of product on the bottom surface.

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There were no cases of hand contamination, nor were there any incidents of floor contamination. A total of 224 spot and continuous air samples was taken in the operating cells with a maximum of 3.4×10^{-11} $\mu\text{g Pu/cc}$ obtained during SWP work in the cell greenhouse. Twelve samples of the 903 exhaust air system indicated a maximum concentration of 5.5×10^{-12} $\mu\text{g Pu/cc}$. The maximum levels of gamma radiation encountered were 28 mr/hr on PR containers, 2 mr/hr at the process hoods, and 5 mr/hr on SC.

Control Laboratories

A total of 207 items, not regulated with respect to handling, was found contaminated on surveys by Technical and H.I. personnel. Ten of these items were above 20,000 d/m including three above 80,000 d/m. There were no cases of skin contamination reported. A total of 186 spot and continuous air samples was taken with a maximum concentration of 2.2×10^{-11} $\mu\text{g Pu/cc}$ obtained in room 6C during the slurping of an RC; masks are worn during this operation. There were 12 contaminated floor incidents, with one in room 36 involving about 9.5 $\mu\text{g Pu}$. This is the eighth instance of contamination spread in room 36 since 9/1/49, and all are attributed to handling and counting of special radioassay samples.

Technical Development Laboratories

No item, not regulated with respect to handling, was found contaminated by H.I. and Technical personnel. One contaminated floor location of 800 d/m was reported in the corridor outside of room 43. Two continuous air samples were taken, both of which were below 1×10^{-11} $\mu\text{g Pu/cc}$. Only one of the small laboratories is being operated at the present time.

234-5 Building

General Statistics

	<u>September</u>	<u>October</u>	<u>1949 to Date</u>
Special Work Permits	247	161	771
Routine & Special Surveys	374	397	1406
Air Monitoring Samples	1500	1386	6674

234 Building - Operating Section

A total of 343 air samples was taken, 85 of which showed positive results. Of the 85 positive samples obtained, 33 were above 10^{-11} $\mu\text{g Pu/cc}$ with a maximum of 1.8×10^{-9} $\mu\text{g Pu/cc}$ during sampling in room 228 at hood 7. Also, 16 of the 85 positive samples were obtained when no respiratory protection was used, but all samples showed concentrations less than 1×10^{-11} $\mu\text{g Pu/cc}$. In addition, 13 cases of hand contamination occurred with a maximum of 2 $\mu\text{g Pu}$ involved. Decontamination was successful in all cases. A total of 7 incidents of protective apparel contamination occurred with a maximum of 1,000 d/m found on coveralls. A total of 26 contaminated floor locations was found with a maximum

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of approximately 40,000 d/m Pu involved. Gross spread of product contamination resulted from a visibly ruptured glove in a hood in room 229 and lack of personnel surveys. The contamination from the glove was not detected until it had spread to the following locations:

Room 229: Levels of 40,000 d/m or greater were found on gloves, floor, and a stool, with an estimated 10 μg Pu involved.

Corridor 2: Twelve spots of floor contamination were found between Room 229 and the 1-2 locker room, with a maximum of 50,000 d/m.

1-2 Locker Room: One floor spot of 1500 d/m.

Personnel: Two operators received skin contamination, one with approximately 2 μg Pu on his hands, and the other with face contamination of 500 to 2000 d/m.

An almost identical incident (Special Hazards Incident #124) occurred in August.

Spread of contamination occurred in room 223 involving approximately 5 to 25 μg Pu when the H.I. ten-inch air sampling vacuum line was used in an attempt to remove process material from a tank in hood 30 to a container outside of the hood. Assault masks were worn during the work. One case of skin contamination resulted (approx. 1,000 d/m) and was successfully reduced. The use of the special 10-inch vacuum line for this work is absurd, and could lead to loss of the entire facility as an air monitoring tool.

235 Building - Operating Section

A total of 157 air samples was taken, 18 of which gave positive results. Of the 18 positive results, 2 showed concentration greater than 1×10^{-11} μg Pu/cc with a maximum of 2.5×10^{-11} μg Pu/cc obtained during the removal of contaminated material from hood 19. Also, 11 of the 18 positive air samples were obtained when no respiratory protection was used, with all samples showing concentrations less than 1×10^{-11} μg Pu/cc. In addition, 3 incidents of skin contamination occurred with a maximum of 0.28 μg Pu involved. Decontamination was successful in all cases. Approximately 10 μg Pu were found on the floor in room 230 from hood 9 to hood 25. Contamination was confined to this area, and decontamination was successful. Dosage-rates on the duct level were reduced to less than 6 mr/hr as a result of the additional shielding to the source in room 172. Further investigation by the H.I. Physics group, using an extrapolation chamber, verified the 200 mr/hr dosage-rate used from hood #10 on.

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A total of 426 items, not regulated with respect to handling, was found contaminated and outside of hoods, 98 of which were greater than 20,000 d/m, including 71 which were greater than 40,000 d/m. In addition, 327 floor locations were found contaminated in rooms and corridors with a maximum of about 33 μg Pu found in room 156. A total of 134 incidents of contaminated protective apparel occurred with a maximum of 25,000 d/m. Eight cases of skin contamination were reported with a maximum of approximately 60,000 d/m involved. Decontamination was successful in all cases.

A total of 283 air samples was taken, 83 showed positive results. Of the 83 positive results, 9 were greater than 1×10^{-11} μg Pu/cc, and 29 were obtained when respiratory protection was not used, with a maximum in this case of 2.6×10^{-11} μg Pu/cc obtained in room 135.

A minor injury occurred when an attempt to remove a stuck contaminated glass stopper resulted in the breaking of a volumetric flask and a cut through the rubber glove to the thumb. Although contamination was detected on the outside of the glove, none was found on the inside of the glove nor on the injury itself.

Reversal of the air in hood #2 in room 135 occurred when a damper on a shaft slipped and remained closed. Resultant air contamination of 1.6×10^{-10} μg Pu/cc was reported. Investigation showed that the damper was held by a set screw against a smooth shaft; this may be the case in all such installations. If true, further air reversals are suggested. Contamination was found up to approximately 15 μg Pu on the vacuum line nozzle in room 149 with a maximum of 1,800,000 d/m. This nozzle is outside the hoods and therefore has no primary filter to the 26-inch vacuum system. No positive air sample was obtained in the room during this condition.

Building General

A total of 603 air samples, 248 in rooms and 355 in ducts, was obtained with all results less than 1×10^{-11} μg Pu/cc. A total of 14 positive air samples was obtained when no respiratory protection was used, and all concentrations were below 1×10^{-11} μg Pu/cc. There has been a definite increase in the air borne Pu concentration of the building exhaust system from the 26-inch vacuum discharge line as shown in the following table:

<u>Period</u>	<u>Average Pu/cc of samples taken</u>
7/5 - 7/31/49	Less than 1×10^{-12} μg
8/1 - 8/31/49	1.1×10^{-11} μg
9/1 - 9/30/49	2.4×10^{-11} μg
10/1 - 10/31/49	2×10^{-10} μg

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The maximum sample obtained for any 24 hour period was 8.5×10^{-10} $\mu\text{g Pu/cc}$. Air samples obtained for the exhaust duct of hood 6 showed concentrations up to 5×10^{-10} $\mu\text{g Pu/cc}$, indicating a mechanical breakdown of the primary filter of this hood.

Slight evidence of product contamination detected with smears was found on the tables, chairs, and cupboards of the lunch room with a maximum of 40 \pm 4 d/m reported. Also, by the same method, contamination was detected on the floors, phones, desk tops, and other miscellaneous equipment in office room 217 with a maximum of 265 d/m reported. The practice of wearing some protective apparel into Zone I of the building should be critically reviewed.

The 300 Area

General Statistics

	<u>September</u>	<u>October</u>	<u>1949 To Date</u>
Special Work Permits	292	158	2032
Routine & Special Surveys	216	179	1756
Air Monitoring Samples	234	153	1419

Metal Fabrication Plant

Twelve of thirteen 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	9	8	6.4×10^{-4}	Press Operating
Machining	3	3	9.2×10^{-5}	By turning lathes
314 Main Room	1	1	1.5×10^{-4}	Oxide Cooling

Since January 1, 1949, 189 out of 354 air samples (54%) taken in this location were above the recommended permissible exposure limit of 5×10^{-5} $\mu\text{g U/cc}$.

Investigation of a significant badge reading led to the rearrangement of temporarily stored slugs near a cut-off lathe operator's position.

Metal Fabrication Laboratories

An irradiated silver wire was measured and cut and irradiated samples were machined with no unusual conditions noted. Remote handling and short time limits prevented undue exposure.

Technical Building

A total of 81 air samples was taken, one was above 2×10^{-11} $\mu\text{g Pu/cc}$ and

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two were above 5×10^{-5} $\mu\text{g U/cc}$. The latter two samples were taken in Room 30, a uranium laboratory, and showed a maximum concentration of 2×10^{-4} $\mu\text{g U/cc}$. These high samples were attributed to transfers performed outside of the laboratory hoods. This process was discontinued.

In Room 98, a follow-up survey to determine a source of hand contamination revealed a dosage-rate of 600 mrep per hour at the southwest hood. The source of this radiation field was a sample solution holder with a surface dosage-rate of 6 rep per hour, including 200 mr per hour at 2 inches. In the same hood, 5 ml of dissolver solution were inadvertently spilled into a beaker of water and "slurping" to waste containers was done behind the hood shielding.

In Room 19, continuous monitoring was provided during the transfer of dissolver solution. All work was performed behind hood shielding but a dosage-rate of 75 mrep/hr was obtained at head level.

In Room 21, a dosage-rate of 5,200 mrep/hour at surface including 200 mr/hr at 2 inches was obtained on dry waste. It was remotely transferred to a lead cask for burial.

Cold Semi-Works Building

A total of fifty-seven air samples was taken in Building 321 all below 5×10^{-5} $\mu\text{g U/cc}$.

A final survey of a process centrifuge shipped off-site revealed no external contamination. A letter preceded the shipment and advised the consignee as to possible internal Pu contamination.

A total of about 1,272 pounds of uranium has been discharged to the waste pond. The total uranium in the 300 N crib remained at about 63 pounds.

Hand Score Summary

A total of 46,517 alpha and 45,501 beta hand scores were reported. About 0.16% of the alpha and about 0.12% of the beta scores were high. No attempted reduction was indicated for 3 high alpha and 4 high beta scores.

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PERSONNEL METERS

Pencils

	<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	9,694	9,070	14,483	10,919	18,671	27,926	35,843	126,606	1,458,952
Single readings (100 to 280 mr)	10	17	7	23	14	60	43	174	2,362
Paired readings (100 to 280 mr)	0	0	0	0	0	0	0	0	18
Single readings (Over 280 mr)	13	19	23	32	24	50	74	235	2,913
Paired readings (Over 280 mr)	1	0	0	0	0	0	0	1	32
Paired readings Lost	0	0	0	1	1	2	0	4	53

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

Badge Resume, Construction Areas

	<u>105-DR</u>	<u>Total</u>	<u>1949 To Date</u>
Badges Processed	79	79	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

Badges

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>200-E</u>	<u>200-N</u>	<u>200-W</u>	<u>300</u>	<u>Total</u>	<u>1949 To Date</u>
Badges Processed	1,749	1,857	3,692	1,830	2,159	477	3,433	5,726	20,923	199,102
Number readings (100 to 500 mrep)	5	6	21	0	44	0	27	147	250	2,356
Number readings (Over 500 mrep)	0	0	0	0	0	0	0	6	6	27
Lost Readings:	0	1	2	1	1	0	2	1	8	156

Results of over 500 mrep as well as 11 of the results 100 to 500 mrep were attributed to defective film.

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Lost readings were occasioned as follows:

Badges lost in area	4
Light leak	1
Lost in processing	2
Packet lost from badge	1

Investigation of lost readings showed no possibility of an overexposure.

Badges processed, 1949	Operations	199,102
	Construction	<u>63,186</u>
	Total	262,288

In addition, 1,789 items of non-routine nature were processed. The 1949 total to date is 23,301.

On October 1, 1949, pencil coverage in the 200 Areas was limited to employees with access to or working in the T, B and U Plant Areas and the 234-5 Building. Pencil post boxes are distributed to each of these buildings to provide coverage for employees entering on the red tag procedure or working on S.W.P. outside of these buildings.

On October 15, 1949, the 100-H Area became a restricted area and the regular H. I. badge was required for all personnel entering the area.

Health Instrument Divisions

DECLASSIFIEDCONTROL AND DEVELOPMENT DIVISIONSite Survey

Water samples were taken from all scheduled locations. The alpha activity of 300 Area sanitary water dropped to just above the detectable limit of 6 dis/min/liter.

There was a slight increase in the iodine activity in vegetation near the 200 Areas, presumably due to weather conditions. The particle collection data indicate a sharp decrease in the number of particles for the week ending September 30, 1949. The results of this work will be issued as a separate report as soon as all tests are completed.

Geology

The activity in the water from wells 361-B-1 and 361-B-9 continues at higher levels than would be expected on the basis of the previously established trond curves. These higher levels may possibly be due to activity reaching the water table from the 5-6 crib and tile field. However, the other wells in this area have shown no increase.

Activity levels in water from well 241-T-361 have increased steadily since completion of the well. The first samples obtained after the well was extended to the water table had about 500 micro-microcuries/liter. The latest values seem to be leveling off at a maximum of about 4000 micro-microcuries/liter. This rise in activity seems to indicate that the contamination in the ground water is confined to the uppermost layers. The lower values perhaps occurred after mixing with the other lesser contaminated ground waters at the time of drilling. Samples from greater depths are now being checked.

A sediment sample from test hole 5-6 No.2 was analyzed, and was found to have beta activity of about 150 microcuries/liter. Normal waste liquids here have on the order of 2 microcuries/liter so the concentration factor is about 75. The corresponding concentration factor for plutonium is 250.

One of the early contaminated samples from well 361-T-6 has been followed for a period of 834 days. The effective half-life of the activity for this sample is about 400 days.

The ground water mound under the 200-E Area has been observed to increase somewhat in a northerly direction. At the present time, the mounds under both 200-East and West are increasing laterally. A slight earthquake tremor was noted on five of the ground water level records at 12:00 noon on October 5, 1949.

Health Instrument Division

DECLASSIFIEDMeteorology

October, 1949, was both cooler and drier than normal. Temperatures averaged 50.3, or 2.7 degrees below the October normal. The extremes were from a high of 74 on the 11th to a low of 23 on the 20th. There were 10 days during the month on which temperatures of 32 or lower were recorded, and this is the greatest number of such days yet to occur at the station during an October month. The first date of freezing temperature was on the 8th, and this is the earliest date of a freeze yet to occur at the station.

As has been the case in every month since March this year, precipitation was well below the normal amount. The total of 0.10 inch was only one-sixth the October normal. Measurable precipitation occurred on four days, and the greatest amount in a 24-hour period was only 0.06 inch on the 27th and 28th.

One unusual phenomenon of the past month was the snowfall which occurred on the 18th. Although there was only a trace at the station, fine flakes fell steadily for one-half hour during the early morning. This marked the third time in 36 years of record in the Hanford area that snow occurred in October, and on both former occasions (1935 and 1946) the snow came much later in the month than this year. At Walla Walla, the snowfall on October 18, this year amounted to 0.3 inch, and this was the earliest date of measurable snowfall since the station was established in 1872.

<u>Forecasts</u>	<u>Number</u>	<u>Percent Reliability</u>
8-hr. Production	93	83.7
24-hr. General	62	84.2
Special	3	66.7

Bioassay

Five hundred and eighty-nine samples were analyzed for plutonium during the month. The blank samples and samples averaged 0.03 d/m with an average yield of 91% on the spiked samples. There were four samples with an activity slightly greater than the resampling limit of 0.33 d/m. Eight resamples from previous months have given less than 0.33 d/m.

One hundred and twenty-nine urine samples were analyzed for uranium on the fluorophotometer. The maximum individual result was 180 $\mu\text{g/liter}$.

Forty urine samples were analyzed for tritium oxide. All results indicated less than 1.2 $\mu\text{c/liter}$. This is provisionally assumed to be "safe" by a factor of about 8.

Methods Development

Yields of 70-80% are being obtained with extraction and electro-plating of a spike from TTA solution. This yield drops to 30-50% when the entire TTA procedure is run on a water sample. Overall material balances have given

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99-100% of the spike added with 1-4% remaining in the beaker after transfer to the plating bath and 10-30% remaining in the electrolyte after plating.

Absorption curves on RaE beta particles with gold, silver, brass, stainless steel, mica, tin, copper, and aluminum have indicated no significant differences for the same mass per unit area at the upper end of the absorption curve. This result is significant in extrapolating the counting rate of a sample through the air and window of a counter.

The soil columns being tested for the washing effect of distilled water and a magnesium-calcium carbonate solution show little difference up to 50 liters of wash. The elutriate from the water wash column is being passed through a second column. These results indicate about 10-30% of the activity transmitted with an apparent correlation between flow rate through the column and amount transmitted.

The diffusion experiments with a mock waste solution on top of a soil bed indicated complete mixing over a 15 centimeter length within two hours. Curves of concentration versus distance are available for a 45 cm column for times of 0.25, 0.50, 1, 2, and 4 hours.

Several new types of extractors for use in the ether-extraction of water were tried with promising results. Yields on several samples of uranium approached 100%. These units have been turned over the Control group for further testing.

A resin column for the purification of lanthanum was installed in the 706 building, and one ten-gram batch purified with a yield of 92%.

Tests conducted on a 91% carbonate-9% fluoride flux for the fluorophotometer indicated possible gains in lower melting temperatures over the standard 90% carbonate-10% fluoride flux.

A series of tests on the Nuclear Instrument Decade scaler indicated good performance except for some difficulties with scaling due to the 12AU7 tubes. It is believed that this may be due to overvoltage of the tubes during testing of the line voltage sensitivity.

Tests have been started on a mica-window tube from Nuclear Instruments.

Methods Control

The operation of the counters has improved considerably the past month. Reasons for the low yields obtained in the ether-extraction procedures are being investigated and further training of the personnel carried out to improve the handling of the samples.

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The number of analyses performed this month were:

<u>Laboratory</u>	<u>Number</u>
Vegetation	787
Water	1,013
Solids	303
Fluorophotometer	479
Miscellaneous	14
Total	<u>2,596</u>

<u>Counting Room</u>	
Beta measurements	5,151
Alpha measurements	3,985
Control points	2,092
Decay curve points	905
Total	<u>12,133</u>

Physics

Measurements of surface dosage-rates with the extrapolation chamber are continuing on samples of uranium and thorium. A comparison has been made of ionization currents collected using collecting electrodes of solid graphite, solid aluminum, and lucite coated with aquadag. The graphite and lucite aquadag give nearly identical results while aluminum gives a value about 23% greater.

The new hydrogen recoil counter for fast neutrons has been given further testing. This counter is about six times as sensitive as the previous models evidently due to an improved electric field inside the chamber. However, it is also sensitive to high fluxes of slow neutrons. This sensitivity is probably caused by a neutron-alpha reaction with the boron in the Kovar seal.

Measurements are being made with the series of nesting lucite cylinders to determine the shape of the distribution curve for low energy neutron fluxes. The discrepancy in distribution curve for fast neutrons from the Po-Be sources is also being rechecked.

Industrial Hygiene

The study of atmospheric contamination in the 314 Building, 300 Area, has progressed during October with the particle size investigation of the airborne contamination being nearly completed. Preliminary appraisal of the findings of this work indicate that the preponderance of airborne particulate matter is extremely small; the largest percentage, by number, being in the range of 0.01 to 0.025 microns.

Some work has been started on evaluating the workers' exposures in the 314

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Building. This is being accomplished by means of a high volume air sampling instrument which permits a sampling rate in the range of 60-70 cfm, thus affording an opportunity to determine exposures of short duration.

A study of atmospheric contamination and health hazards in the 706 Building was started this month. A survey of the operations indicated that potential problems existed from benzene, toluene, nitric acid mist, and oxides of nitrogen. Preliminary findings indicate possible excessive exposures of the operators to benzene. However, initial sampling procedures showed that the laboratory atmosphere contained some liquid aerosol, possibly acid mist, which interfered with the sampling methods being employed. A more extensive investigation is indicated.

The general atmospheric pollution study has been continued. The procedure for collecting settled dust has been modified to permit the use of a collecting liquid which would not freeze and would permit the desired analyses. Glycerin was finally chosen from several liquids tested. Dust concentrations, wind velocity, and soil moisture tests are proceeding as formerly.

Tests were made for the Medical Division to determine the solvent content of a assault mask canister. Results were given in a special report.

Instrument Development

Further experimentation with various gases in the Neut ionization chambers has shown that carbondioxide has nearly the same gamma energy dependence as methane, and that it is to be preferred over argon for use in measuring neutrons in the presence of low energy gamma radiation. Ionization currents in methane and carbondioxide can be made to be nearly identical in the range from radium gammas down to 150 KVP X-rays. At 60 KVP, the carbondioxide ionization current is about 50% greater than the methane current. Thermal neutron exposure induces the 2.3 minute half-life activity in the aluminum walls of the chambers. This undesirable effect can be controlled in the field by use of a shield of boron or cadmium over the chambers.

The G.E. alpha scintillation counter has been proven to be unsuitable for low-level alpha counting because of a low geometry and a relatively high background. It is currently being tested by the H.I. Operational Division in the 200-West Area where freedom from microphonics is more important than a low background. Geometries up to 40% are obtainable with a background on the order of 10 counts per hour.

Experimental sheep thyroid counting indicates that reasonable position independence is attainable if the counter array is carefully attached to the sheep. Copper wall G.M. counters gave a counting rate of 2,000 c/m over a 500 c/m background when the sheep thyroid contained 2.5 microcuries of I¹³¹. The use

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of available bismuth coated screen wall counters should increase this counting rate by a factor of four, making it feasible to detect on the order of a few tenths of a microcurie.

A Neut ionization chamber with argon at gauge pressure 50 lbs. per square inch gave a current of 4×10^{-14} amp. when exposed to the same sheep thyroid. A high pressure chamber has been designed to give a current of 5×10^{-13} amp. when exposed to a similar source.

An ion chamber arrangement for monitoring total alpha activity on the outside of acid bottles is being constructed for the 300 Area Survey group. The chamber is to be used with a Beckman RKG micro-microammeter, and should detect any activity over a few hundred disintegrations per minute.

Calibrations

The routine calibrations were:

<u>RADIUM CALIBRATIONS</u>	<u>Number of Calibrations</u>	
	<u>September</u>	<u>October</u>
Fixed Instruments		
Gamma	326	355
Portable Instruments:		
Alpha	218	261
Beta	521	578
Gamma (radium)	1,077	1,020
X-ray scanning	37	30
Neutron	14	64
Total	<u>1,867</u>	<u>1,953</u>
Personnel Meters:		
Beta	945	112
Gamma (radium)	10,139	7,617
X-ray	7,355	8,447
Neutron	--	--
Total	<u>18,439</u>	<u>16,176</u>
GRAND TOTAL	20,632	18,484

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DECLASSIFIEDBIOLOGY DIVISIONAquatic Biology1. Effect of Pile Effluent on Aquatic Life

Chinook salmon monitoring started again with eggs supplied by the State of Washington Department of Fisheries. The majority of the eggs were placed in straight river water and 5 per cent area effluent water in anticipation of liberating these groups as marked fish in the spring of 1950 and expecting their return as adults in the fall of 1953.

Exposure of young trout to 5 per cent area effluent water has been continued without significant change. Exposure of young trout to 2 ppm KI was discontinued on October 13, in order to provide space for the salmon studies. The trout were not seriously affected by the 2 ppm KI. Mortality was seemingly not increased but growth appeared to be slightly retarded.

2. Biological Chains --

The last of the shiners (Richardsonius balteatus) which had once accumulated activity from feeding on active snails was sampled after 64 days of feeding on inactive food. The loss of activity from the fish did not appear to be much faster than the natural decay of P^{32} alone.

The activity of large trout which have been eating food containing 10 per cent algae from the 107 Basin is generally stabilized at about 3.0 beta $\mu\text{c}/\text{kg}$ for the bone. The gonads of these fish are now being given special attention since changes may occur while they become mature.

3. Radiobiological-Ecological Survey

Favorable collecting conditions continue to prevail, again enabling a large number of samples to be tested for radioactivity. Collection of adult insects by light trap has been discontinued for the winter.

As represented by the Hanford Station, the activity levels of juvenile fish, plankton, algae and smaller invertebrates declined slightly in spite of water activities approximately equal to those of last month. Insect larvae generally remained at the level found during September, while the activity of large fish increased slightly. During the last half of the month, sampling was intensified at the collecting station immediately below the 100-H Area. No significant increase in the activity of aquatic forms was noted by daily sampling either at this station or at Hanford as a result of the start up of the 100-H pile.

Health Instrument Divisions

DECLASSIFIED4. Miscellaneous

Adult chinook salmon are now spawning in the Columbia River in the vicinity of the 100 Areas. Through arrangements with AEC Security, observations on the extent of the spawning were made from one of the patrol planes on October 18 and 26. An inspection was made, on October 21, of the Bureau of Reclamation's irrigation ditches leading from the Pasco Pumping Plant, at the request of the U.S. Fish and Wildlife Service. The observations were made to determine the numbers and kinds of fish which accumulated in the ditch during the irrigation season.

ZOOLOGY GROUP1. Toxicology of I¹³¹

Assay of thyroid tissue of the two Hampshire ewes sacrificed after 10 weeks on a low inert iodine diet supplemented with 0.5 μc I¹³¹ daily showed 2.6 μc in the 5-gram gland of the 65 kg sheep, and 2.4 μc in the 3.4-gram gland of the 56 kg sheep. One similar 70 kg ewe remains to be sacrificed when she is no longer needed for instrument testing. External counting indicates that she also has about 2.5 μc in her thyroid.

2. Biological Monitoring

The special emphasis on wildlife monitoring concurrent with the upland fowl hunting season has produced very satisfactory results. Fifty-three specimens were assayed for beta-gamma emitters. In general, thyroids of animals taken within about 30-mile radii of the 200 Area stacks were radioactive (about 0.58 $\mu\text{c}/\text{kg}$). Other tissues were near background except for specimens taken near fission-waste overflow or near the Columbia River. Specimens taken at distances greater than 30 miles were not detectably above background radiation levels. Only pheasants and partridges were sampled from off the project. Specimens taken on the project also consisted of quail, sage-hen, coot, ducks, owls, magpies, coyotes, jackrabbits, cottontails, and rats.

BOTANY GROUP1. Separations Area Control Plot

Selected samples of Russian thistle growing in the 200-East R-3 Danger Zone continue to have a high beta count. One of the interesting aspects of the study of thistles from this area has been the great variation in the activity of the plants in the area. A Russian thistle may read as much as 300 mrep, and within a yard of this plant another thistle will have no recordable reading with the same instrument.

Health Instrument Divisions

DECLASSIFIED

Soil samples from the area gave the following beta readings:

<u>Distance below the surface</u>	<u>Maximum $\mu\text{c}/\text{kg}$</u>	<u>Minimum $\mu\text{c}/\text{kg}$</u>
3 feet	86	0.06
3.5 feet	120	51.
4 feet	39,100	1000.

The experimental plot has been cleaned up for the season.

2. Agricultural Field Station

The soil samples from the treatment areas gave an average beta reading of 0.018 $\mu\text{c}/\text{kg}$ within a range of 0.008 to 0.036 $\mu\text{c}/\text{kg}$. No river samples were reported as the season's irrigation was completed on October 1, 1949.

In the absence of control materials, samples of vegetables were obtained from a farm in the Roza District near Prosser. These samples were compared with the materials from the treatment plots on the Field Station.

<u>Crop</u>	<u>Field Station $\mu\text{c}/\text{kg}$</u>	<u>Control $\mu\text{c}/\text{kg}$</u>
Sweet corn	0.005	0.004
Beans	0.011	0.009

Marketable peaches amounting to 2,013 boxes, weighing 28 pounds apiece were harvested from approximately four acres of orchard. The yield was at the rate of 7 tons per acre.

3. Botany Laboratory

Beans are being grown in nutrient solution with pile effluent as the liquid phase.

Escherichia coli and other water-borne bacteria have been shown to have an ability to concentrate radioactive isotopes from the effluent pile water, almost equal to that of the algae. Translocation of I^{131} in the tomato plant is being studied.

Health Instrument Divisions

DECLASSIFIED

BIOCHEMISTRY GROUP

1. Collection and analysis of active particles

Data collected in experiments of previous month are being analyzed.

2. Deposition in lungs of active particles

Exposure of animals to stack gases will be resumed this week.

3. Pathology of active particles

Radioautographic technique involving the use of liquid emulsion on frozen lung sections are being further improved. These methods will be employed on the lung tissues of animals exposed to stack gases.

4. Analysis of plutonium in animal tissue

This project has been transferred to the Analyses group, which will report next month.

5. Gastro-intestinal absorption of plutonium

A new short-term experiment is being initiated to determine whether any differences exist in the rates of absorption and deposition of plutonium in male and female rats. Equipment and solutions for this project are being prepared. Analytical methods for plutonium are being checked and improved. Absorption characteristics of plutonium on glass and rubber are being determined.

GENERAL ACCOUNTING DIVISION

OCTOBER 1949

GENERAL

Plans and routines were completed for the segregation of Research and Development costs by "activities". It is expected that H. W. Instructions Letter covering routine for approval of funds for Research and Development jobs will be issued in November or December.

Considerable attention was given to improvement of financial statements and also to furnish Management with additional financial information.

Considerable work was also done on the proposed voucher system for the Accounts Payable Division but final plans have not yet been approved.

Special effort has been placed on calculation of salary adjustments retroactive to April 11, 1949 under the Union Agreement. Although Saturday overtime work in connection with calculation of the adjustments was discontinued on October 15 because of the exceptional progress that had been made, the payments will be distributed to employees on Friday, November 18, 1949. Original estimates indicated that distribution of these payments would be made in December, 1949.

During the period from January 1 to September 18, 1949 the average percentage of absenteeism per week for the General Accounting Division was 3.82 as compared to the average for Hanford Works of 2.27. As a result of our efforts to reduce absenteeism in September and October the average percentage of absenteeism per week for the General Accounting Division for the five weeks ended October 23, 1949 was reduced to 2.16, whereas the percentage of absenteeism for Hanford Works for the same period was 2.39.

Under the G. E. Employees Sale Plan, arrangements were made in October for the various divisions to issue traffic appliance purchase forms to employees at their place of work. The result will be a saving of time spent by employees who formerly had to come to the 703 Building for such certificates and, employees will be less inconvenienced.

Hanford Works and Nucleonics Department Financial Statements for the month of September were completed and distributed on October 18, and October 20, 1949 respectively. General Divisions Operating Reports covering September operating costs were completed on October 14, 1949.

Advances from AEC were reduced from \$4,500,000 at the beginning of the month to \$3,500,000 at the month end. Items comprising the balance in the advance account as of October 31 compared with those as of September 30 are detailed below:

	<u>September 30</u>	<u>October 31</u>
Cash in Bank - Contract Accounts	\$ 3,870,130	\$ 2,667,073
Salary Accounts	55,000	55,000
Travel Advance Funds	50,000	50,000
Unliquidated portion of Advances prior to June 1, 1949	40,012	13,307
Advances to Subcontractors	300,193	300,180
Accounts Receivable - AEC	87,482	11,930
Cash in Transit	97,183	402,510
Total	<u>\$ 4,500,000</u>	<u>\$ 3,500,000</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	7 515	1 606	5 909
Additions and transfers in	108	7	101
Removals and transfers out	(121)	(12)	(109)
Transfers from Weekly to Monthly Payroll	--	6	(6)
Transfers from Monthly to Weekly Payroll	--	(7)	7
Employees on Payroll at end of month	<u>7 502</u>	<u>1 600</u>	<u>5 902</u>

<u>Employees on Payroll at end of month</u>	<u>September</u>	<u>October</u>
Manufacturing	3 226	3 256
Design and Construction	595	530
Community	738	748
Other	2 956	2 968
Total	<u>7 515</u>	<u>7 502</u>

<u>Overtime Payments</u>		
Weekly Paid Employees	\$42 056	\$34 659
Monthly Paid Employees	3 043	4 551
Total	<u>\$45 099</u>	<u>\$39 210</u>

<u>Number of changes in Salary Rates and Job Classifications</u>		
	586	1 053

<u>Gross Amount of Payroll</u>		
Manufacturing	\$1 289 278	\$1 112 973
Design and Construction	238 821	199 185
Community	264 877	224 215
Other	1 073 141	915 814
Total	<u>\$2 866 117 (1)</u>	<u>\$2 452 187 (2)</u>

<u>Annual Going Rate of Payroll</u>		
Manufacturing	\$14 306 232	\$14 503 087
Design and Construction	2 548 608	2 290 466
Community	2 847 785	2 836 103
Other	11 770 303	11 725 292
Total	<u>\$31 472 928</u>	<u>\$31 414 948</u>

<u>Average Salary Rate Per Hour (3)</u>	<u>September</u>			<u>October</u>		
	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>
Manufacturing	\$2.011	\$2.617	\$2.109	\$2.015	\$2.618	\$2.114
Design and Construction	1.570	2.615	2.002	1.587	2.632	2.022
Community	1.725	2.307	1.841	1.739	2.299	1.849
Other	1.630	2.507	1.827	1.630	2.513	1.832
Total	<u>\$1.808</u>	<u>\$2.541</u>	<u>\$1.962</u>	<u>\$1.815</u>	<u>\$2.545</u>	<u>\$1.969</u>

- (1) Includes five weeks in case of weekly paid employees
- (2) Includes four weeks in case of weekly paid employees
- (3) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, Suggestion Awards, etc.

General Accounting Division

) Employee Plans

Pension Plan

	<u>September</u>	<u>October</u>
Number participating at beginning of month	6 495	6 516
New participants and transfers in	78	93
Removals and transfers out	(57)	(40)
Number participating at end of month	<u>6 516</u>	<u>6 569</u>
% of eligible employees participating	91.9%	91.8%

Employees Retired

	<u>October</u>	<u>Total to Date</u>
Number	4	102
Aggregate Annual Pensions Including Supplemental Payments	\$955	\$24 309*
Amounts contributed by employees retired	\$597	\$ 8 934
*Amount before commutation of pensions in those cases of employees who received lump sum settlement		1

Group Life Insurance

	<u>September</u>	<u>October</u>
Number participating at beginning of month	5 819	5 843
New participants and transfers in	85	28
Cancellations	(7)	(9)
Removals and transfers out	(54)	(73)
Number participating at end of month	<u>5 843</u>	<u>5 789</u>
% of eligible employees participating	79.2%	80.4%

Insurance Claims

	<u>October</u>	<u>Total to Date</u>
Number of deaths	1	32
Amount of insurance	\$7 650	\$160 812
Premiums paid by employees who died	\$ 175	\$ 2 246

Group Disability Insurance - Personal

	<u>September</u>	<u>October</u>
Number participating at beginning of month	6 503	6 467
New participants and transfers in	59	95
Cancellations	(8)	(9)
Removals and transfers out	(87)	(88)
Number participating at end of month	<u>6 467</u>	<u>6 465</u>
% of eligible employees participating	89.1%	89.3%

Group Disability Insurance - Dependent

	<u>September</u>	<u>October</u>
Number participating at beginning of month	4 045	4 067
Additions and transfers in	51	56
Cancellations	(8)	(10)
Removals and transfers out	(21)	(24)
Number participating at end of month	<u>4 067</u>	<u>4 089</u>

General Accounting Division

Employee Plans (continued)

Group Disability Claims

	<u>September</u>	<u>October</u>
Number of claims paid by insurance company:		
Employee Benefits	75	65
Daily Hospital Expense Benefits	79	66
Special Hospital Services	82	66
Surgical Operations Benefits	65	54
Dependent Benefits Paid		
Daily Hospital Expense Benefits	108	86
Special Hospital Services	109	91
Amount of claims paid by insurance company:		
Employee Benefits	\$10 392	\$ 9 083
Dependent Benefits	3 405	3 046
Total	<u>\$13 797</u>	<u>\$12 129</u>

Group Disability Insurance - Premiums

Personal - Employee Portion	\$10 674	\$11 434
- Company Portion	7 230	6 404
- Total	<u>\$17 904</u>	<u>\$17 838</u>
Dependent- Employee Portion	\$ 3 509	\$ 3 854
- Company Portion	554	231
- Total	<u>\$ 4 063</u>	<u>\$ 4 085</u>
Grand Total	<u>\$21 967</u>	<u>\$21 923</u>

Vacation Plan

Number of employees granted permission to defer one week of their 1949 vacation to 1950.

	<u>October</u>	<u>Total to Date</u>
Manufacturing	14	25
Design and Construction	3	3
Community	1	1
Technical	4	14
Employee and Community Relations	2	2
Plant Security and Services	6	6
General Accounting	1	2
Total	<u>31</u>	<u>53</u>

Annuity Certificates (For du Pont Service)

Number issued 0 65

<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	1 784	298	348	1 491	3 921
New Authorizations	20	3	1	26	50
Voluntary Cancellations	(43)	(3)	(6)	(27)	(79)
Removals and Transfers Out	(6)	(20)	--	(20)	(46)
Transfers In	14	--	7	--	21
Number participating at month end	1 769	278	350	1 470	3 867
% participating	54.0%	52.0%	47.0%	50.0%	52.0%
Bonds issued					
Maturity Value	\$84 150	\$12 375	\$14 125	\$63 875	\$174 525
Number	1 665	239	293	1 270	3 467
Refunds issued	49	11	9	1	70
Revisions in authorizations	25	3	1	31	60
Annual going rate of deductions					
G. E. Employee Savings and Stock Bonus Plan	\$769 123	\$106 047	\$132 251	\$598 685	\$1 606 706
General Electric Savings Plan	223 318	37 035	37 137	148 625	446 115
Total	<u>\$992 441</u>	<u>\$143 082</u>	<u>\$169 388</u>	<u>\$747 310</u>	<u>\$2 052 821</u>

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General Accounting Division

Employee Plans (continued)

Suggestion Awards

Number of Awards
Total Amount of Awards

<u>October</u>	<u>Total to Date</u>
11	418
\$260	\$5 510

Employee Sales Plan

Certificates Issued
Certificates Voided

	<u>October</u>	
	<u>Total</u>	<u>Major Appliances</u>
	<u>Traffic Appliances</u>	
	291	35
	15	2
		256
		13

Salary Checks Deposited

Monthly
Weekly
Total

	<u>September</u>	<u>October</u>
	868	869
	847	840
	<u>1 715</u>	<u>1 709</u>

Special Absence Allowance Requests

Number submitted to Pension Board

7	11
---	----

Absenteeism (Weekly Paid Employees)

January 1 to October 23

1948	1949
2.18%	2.32%

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING

Number of Employees

On Payroll at beginning of month
Removals and transfers out
Additions and transfers in
Number at end of month
(Increase in personnel during October
due principally to calculation of
adjustment retroactive to April 11,
1949 under the Union Agreement)

	<u>September</u>	<u>October</u>
	173	179
	(6)	(9)
	12	13
	<u>179</u>	<u>183</u>

Net increase (or decrease) during month
% of terminations and transfers out
% of absenteeism

6	4
3.5%	5.0%
2.86%	2.23%

Changes by division in number of Accounting Division employees during October were as follows:

General Accounting - General: No Change

Accounts Payable: Decrease of two employees

One granted leave of absence
One termination

Cost: Decrease of one employee

One transfer to Special Assignments

General Accounts: No Change

Plant Accounting: Increase of three employees

Three new hires

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General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Weekly Payroll: Increase of three employees

- Six new hires
- One transfer from Design and Construction Divisions
- One transfer from Plant Security and Services Division
- One transfer from Medical Division
- One transfer to Purchasing and Stores Division
- One removal due to illness
- Four terminations

Monthly Payroll: Decrease of one employee

- One termination

Special Assignments: Increase of two employees

- One transfer from Cost
- One transfer from Medical Division

<u>Injuries</u>	<u>September</u>	<u>October</u>
Major	0	0
Sub-major	0	0
Minor	1	0

Number of Accounting Division employees as of October 31, 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	14	1	15
Cost	9	1	10
General Accounts	15	1	16
Plant Accounting	25	3	28
Weekly Payroll	81	5	86
Monthly Payroll	14	1	15
Special Assignments	2	5	7
Total	<u>163</u>	<u>20</u>	<u>183</u>

Non-Exempt employees may be summarized as follows:

<u>Classification</u>	<u>Number as of</u>	
	<u>9-30-49</u>	<u>10-31-49</u>
Accounting A	1	1
Accounting B	2	2
Accounting D	5	5
Business Graduate	2	4
Clerical Working Leader	7	7
Cost Clerk A	1	1
Cost Clerk B	1	1
Cost Clerk D	2	2
Field Clerk C	3	3
General Clerk A	28	26
General Clerk B	47	49
General Clerk C	19	17
General Clerk D	13	13
General Clerk E	0	1
Office Machine Operator B	16	16
Secretary B	1	1
Steno-Typist A	2	2
Steno-Typist B	4	4
Steno-Typist C	3	4
Steno-Typist D	3	4
Total	<u>160</u>	<u>163</u>

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Open employment requests as of October 31, 1949, were as follows:

Business Graduate	6
General Clerk C	<u>1</u>
Total	<u><u>7</u></u>

General Accounting Divisions

	<u>September</u>	<u>October</u>
<u>Accounts Payable *</u>		
Balance at Beginning of Month	\$ 51 750	\$ 70 973
Vouchers Entered	756 565	1 003 245
Cash Disbursements	740 729 Dr.	1 011 857 Dr.
Cash Receipts	3 387	837
Miscellaneous Credits	<u>-0-</u>	<u>533</u>
Balance at end of month	<u>\$ 70 973</u>	<u>\$ 63 731</u>
Number of Vouchers Entered	1 336	1 529
Number of Checks Issued	1 049	1 087
Number of Freight Bills Paid	146	205
Amount of Freight Bills Paid	\$ 2 008	\$ 3 870
Number of Purchase Orders Received	881	1 000
Value of Purchase Orders Received	\$ 141 055	\$ 182 802

Public Vouchers (1034) Submitted to AEC

Not Reimbursed at Beginning of Month	\$ 50 000	\$ 87 482
Submitted During the Month	<u>90 734</u>	<u>42 325</u>
Sub Total	140 734	129 807
Reimbursements During the Month	<u>53 252</u>	<u>117 877</u>
Not Reimbursed at End of Month	<u>\$ 87 482</u>	<u>\$ 11 930</u>

Public Vouchers (1034) Submitted to AEC

Not Reimbursed at Beginning of Month	1	2
Submitted During the Month	<u>7</u>	<u>28</u>
Sub Total	8	30
Reimbursements During the Month	<u>6</u>	<u>27</u>
Not Reimbursed at End of Month	<u>2</u>	<u>3</u>

Pre-Audit Vouchers (1035) Submitted to AEC

Not Yet Approved

Community	\$ -0-	\$ -0-
Design & Construction	3 690	12 712
General	-0-	-0-
Manufacturing	<u>-0-</u>	<u>-0-</u>
Sub Total	<u>\$ 3 690</u>	<u>\$ 12 712</u>

Not Submitted to AEC on Pre-Audit Vouchers

Community	\$ 89	\$ -0-
Design & Construction	16 883	287
General	3 461	308
Manufacturing	<u>15 889</u>	<u>-0-</u>
Sub Total	<u>\$ 36 322</u>	<u>\$ 595</u>

Total Unbilled Items \$ 40 012

\$ 13 307

* 8. General Divisions Only.

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General Accounting Divisions

	<u>September</u>	<u>October</u>
<u>Cash Disbursements</u>		
Community	\$ 28 379	\$ 34 371
Design & Construction	2 056 765	1 661 946
General	2 915 527	2 986 553
Manufacturing	<u>426 752</u>	<u>338 502</u>
Total	<u>\$5 427 423</u>	<u>\$5 021 372</u>
Material and Freight	\$ 684 626	\$ 695 865
Lump Sum and Unit Price Subcontracts	135 229	395 590
CPFF Subcontracts		
Labor	1 398 178	684 486
Others	371 944	343 581
Payrolls (net)	2 013 311	1 736 064
Payroll Taxes	-0-	483 905
U. S. Savings Bonds	161 514	238 838
General & Administrative Expenses	200 000	200 000
Miscellaneous	<u>462 621</u>	<u>243 243</u>
Total	<u>\$5 427 423</u>	<u>\$5 021 372</u>
<u>Cash Receipts</u>		
Community	\$ 95 509	\$ 99 277
Design & Construction	173 149	33 786
General	4 588 507	3 663 031
Manufacturing	<u>12 239</u>	<u>22 222</u>
Total	<u>\$4 869 404</u>	<u>\$3 818 316</u>
<u>Detail of Cash Receipts</u>		
Hospital	\$ 52 106	\$ 46 957
Scrap Sales	14 289	13 504
Miscellaneous Accounts Receivable	2 729	8 207
Educational Program	1 359	2 263
Employee Sales	865	732
Refunds from Vendors	6 381	13 234
Cash in Transit	398 148	97 183
Rents	116 125	94 014
Telephone	8 337	7 279
Income From Special Funds	56 566	-0-
Bus Fares	10 064	10 624
Sales of Plant & Equipment	8 675	12 822
Refund of Advances by Subcontractors	75 000	13
Equipment Rental	57 474	-0-
Advances From A.E.C.	4 000 000	3 500 000
Accounts Receivable A.E.C.	50 000	-0-
All Other	<u>11 286</u>	<u>11 484</u>
	<u>\$4 869 404</u>	<u>\$3 818 216</u>

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General Accounting Divisions

	<u>September</u>	<u>October</u>
<u>Number of Checks Written</u>		
Community	246	245
Design & Construction	625	260
General	1 049	1 087
Manufacturing	<u>452</u>	<u>428</u>
Total	<u><u>2 372</u></u>	<u><u>2 020</u></u>
 <u>Bank Balances at End of Month</u>		
Chemical Bank & Trust Company		
Contract Account	\$1 676 375	\$ 678 877
Seattle First National Bank-Richland		
Contract Account	1 848 886	1 561 068
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
U. S. Savings Bond Account	185 297	232 644
Seattle First National Bank-Seattle		
Salary Account No. 3	5 000	5 000
Escrow Account	59 806	59 806
Travel Advance Account	<u>28 983</u>	<u>24 057</u>
	<u><u>\$3 854 347</u></u>	<u><u>\$2 611 452</u></u>
 <u>Travel Advances and Expense Accounts</u>		
Cash Advance balance at end of month*	\$ 8 058	\$ 11 165
Cash Advance balance outstanding over one month*	-0-	1 700
Traveling and Living Expenses:		
Paid Employees	14 919	14 577
Billed to Government	14 743	14 343
Balance in Variation Account at end of month	1 080 Dr.	1 313 Dr.
 <u>Hospital Accounting</u>		
Accounts Receivable		
Balance at Beginning of Month	\$ 126 941	\$ 133 948
Invoices Issued	83 694	72 984
Refunds	951	1 492
Cash Receipts	(52 017)	(46 953)
Payroll Deductions	(25 002)	(31 648)
Bad Debts Written Off	<u>(619)</u>	<u>-0-</u>
Balance at End of Month	<u><u>\$ 133 948</u></u>	<u><u>\$ 129 823</u></u>

* General Divisions Only.

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General Accounting Division

ACCOUNTS PAYABLE

The upward trend in volume of work which began several months ago continued during the month of October. This increase can be attributed directly to the number of purchase orders received, which increased this month to 1,000 from 881 in September. Number of accounts payable vouchers entered increased approximately 14% and number of freight bills 40%.

As of this date there are only 15 paid vouchers entered prior to September 1, 1949 which are not finally completed.

In accordance with arrangements made at the time the new reimbursement procedure was established, audited vouchers are being retained for three months only. The transfer of the original copies of June and July APV's from all divisions to the Atomic Energy Commission was made this month. A letter of transmittal was written to the Atomic Energy Commission and receipt was obtained from them. As of October 31, 1949 there were 3 APV's paid in June which were not complete and 10 APV's paid in July which were not complete. (Includes all divisions)

The audit of completed purchase order files is continuing. In October, approximately 1,500 folders were audited. It is expected that within 3 months this work will be on a current basis.

BUDGETARY CONTROL

On October 1, 1949 the nucleus of a Budgetary Control Section was established with the transfer of two employees from other Sections.

The functions and responsibilities of this section will be: (1) to obtain budget estimates periodically from divisions, (2) to review and obtain narrative justifications, (3) to issue budget estimates in final form to proper individuals for approval, (4) to compare operating costs with budgeted amounts and confer with individuals in various divisions with respect to over and under-runs, and (5) to keep all interested parties informed as to over-runs and (6) issue periodic reports and statements to management.

To date, all work has been directed toward assisting various divisions in the preparation of revised budget estimates for the last three quarters of Fiscal Year 1950.

COST

General Divisions operating reports for September were issued on October 15.

Standard liquidation rates for all divisions were reviewed on the basis of first quarter experience and certain rates were adjusted to bring liquidations in line with actual costs.

Detailed Research and Development reports tabulating costs by individual program for both Health Instrument and Technical Divisions were issued on October 26. Similar reports in future months will be issued as soon as possible after regular operating reports.

General Accounting Division

COST (Continued)

The September Summary of Costs report was completed and issued on October 25, seven working days after final operating reports of all divisions were issued. It is felt that this time can be reduced somewhat in future months.

All assessment studies were reviewed and methods changed where necessary. Completely revised studies were made of the General Accounting Division and the Employee and Community Relations Division based on services rendered by them to other divisions.

All ledger balances including accruals in connection with telephone operations and leased line and toll charges were transferred to Manufacturing Divisions in October.

GENERAL ACCOUNTS

General Ledger trial balances were received from all Accounting Divisions on October 17. Hanford Works Financial Statements were completed on October 18 and Consolidated Financial Statements on October 20, 1949.

Four pages were added to the Hanford Works Financial Statements this month. One page each to summarize Production Costs, Research and Development Costs, Community Costs and Kadlec Hospital and Clinic Costs. These pages are designed to reflect Current Month's actual and budgeted costs, Last Month's costs, and Fiscal Year To Date actual and budgeted costs.

Advances from A.E.C. were reduced from \$4,500,000 at September 30, 1949 to \$3,500,000. Advances prior to June 1, 1949 were reduced by \$26,705 to \$13,307.

Considerable time was spent this month in the preparation of a detailed chart of General Ledger Accounts. Every effort was made to explain fully the purpose of the account, how the account is affected, and what the balance of the account represents.

Accounting Reports prepared by this Section were reviewed during October to determine if the method of presentation could be improved. Some improvements have been made and will be incorporated in the October reports.

MEDICAL ACCOUNTING

The balance in the Kadlec Hospital accounts receivable account reflected a decrease from \$133,948 in September to \$129,823 in October. This is primarily due to the reduction in invoices issued which have decreased for two consecutive months. (August - \$90,191, September - \$83,694, October - \$72,984) Payroll deductions have proportionately increased which also reflects in a reduced receivable balance. (August - \$17,598, September - \$25,002, October - \$31,648)

In October, cash invoices numbered 5603 and totaled \$17,500; charge invoices numbered 3630 and totaled \$21,209. (Out patient only)

Much time was spent by accounting employees together with medical administrative personnel in reviewing and revising the last three quarters of the 1950 budget estimates. A major revision was made in the amount of revenue budgeted. This was necessary due to an excessive amount budgeted originally and the elimination of clinic revenue from the 4th quarter.

General Accounting Division

PLANT ACCOUNTING

The inventory volumes covering the June 30 Plant appraisal have practically all been received by this section. The information contained in these volumes is being posted to the continuing Property record and will require at least three months time.

Entries received covering July and August transactions have for the most part been distributed to the proper Plant Accounts. September entries have not yet completely been posted but this work is well under way.

A study of transfers of Automotive and Heavy Equipment to the Design and Construction Division is now complete and entries will be made charging Design and Construction with the value of equipment transferred for which no billing had previously been issued. At the same time, adjustments will be made to the Reserve Accounts. These entries will be cleared through the account Unusual Expenses and Prior Months Costs as an appraisal adjustment.

The Design and Construction and the Project Engineering Divisions are currently unitizing Projects which have not been classified to-date. It is expected that this will be completed in the near future. Postings to the continuing Property Records will then be made. This will be a job of major proportions since approximately \$55,000,000 is represented.

SPECIAL ASSIGNMENT

Continued assistance was rendered the Design and Construction Accounting Division in connection with accounting for major equipment.

A review of accounting policies and procedures of the Surplus, Salvage, and Scrap Section was started and will likely continue for several weeks.

Work in connection with the voucher system for Accounts Payable continued and an outline of the new procedure was submitted to division accountants for their comment.

) General Accounting Divisions

PAYROLLS

During the month of October there were 121 removals from Payroll of which 17 were removals due to lack of work and there were 108 additions to the payroll, including transfers from other units of the Company, resulting in a net decrease of 13 employees on the payroll.

* * * * *

As a result of classification changes received late from Labor Relations and Wage Rate Division for employees who were downgraded, there were 17 employees overpaid in October. Arrangements for repayment of these overpayments, amounting to a total of \$240.54, were made through supervision by Labor Relations and Wage Rate Division. Repayments are being made by payroll deduction and, as of October 31, 1949, the unpaid balance was \$9.42.

* * * * *

A schedule indicating number of employees within the Bargaining Unit and number of employees outside the Bargaining Unit as of September 2, 1949, segregated by divisions and classifications, was prepared and distributed to interested Division Managers.

* * * * *

G. A. Foster, President of Hanford Atomic Metal Trades Council indicated to our Labor Relations Group on October 10, 1949 that he had received reports to the effect that General Electric was making no effort to calculate the payments retroactive to April 11, under the Union Agreement. Mr. Foster was invited to visit Weekly Payroll that day for the purpose of reviewing the progress of the work of calculating retroactive payments, and, in the company of J. N. Dupuy and E. F. Charette, he was escorted to the 720 Hut where he saw 22 employees working full time on calculation of the retroactive payment. It was explained to Mr. Foster that approximately 30 other payroll employees were working part time on Fridays and full time on Saturdays on this work and that the job was more than 60% complete.

* * * * *

There were 603 monthly paid and 811 weekly paid employees who had not taken all of their 1949 vacations as of September 15, 1949 and October 2, 1949 respectively. Lists of these employees were furnished to Division Managers showing the number of vacation days not taken as of the above dates.

* * * * *

Permission to defer one week of their 1949 vacations until 1950 was granted by Division Managers in October to 31 employees.

* * * * *

The addressograph Section of Weekly Payroll Division addressographed approximately 67,100 items for other divisions during the month of October in addition to regular routine addressograph work.

* * * * *

Although the interested divisions are notified each week of time cards received late in Weekly Payroll Division, there were 42 such cases during the month of October, as follows:

<u>Week Ended</u>	<u>No. of Time Cards Received Late</u>
10-2-49	6
10-9-49	21
10-16-49	6
10-23-49	3
10-30-49	6
Total	<u>42</u>

1213070

General Accounting Divisions

PAYROLLS (CONT.)

Late time cards require special handling and cause unnecessary extra work for Weekly Payroll

* * * * *

Armistice Day is observed as a National Banking Holiday and Richland Banks will be closed on Friday, November 11, 1949. Overtime work has been scheduled for Weekly Payroll in order that weekly salary checks for the week ending November 6, 1949 (and check stubs for employees whose checks are deposited) may be distributed on Thursday, November 10, 1949, instead of on Friday, November 11, 1949.

Arrangements have also been made for the banks in Richland and North Richland to re-open on Thursday, November 10, for the period from 5 PM to 7 PM as a convenience to General Electric employees in cashing their salary checks and for other banking purposes.

* * * * *

Under the General Electric Employee Savings and Stock Bonus Plan, 135 participating employees withdrew from the Plan 744 U. S. Savings Bonds having a maturity value of \$35,350. U. S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in September were delivered to employees on October 28, 1949. There were 833 U. S. Savings Bonds and 3,542 Custody Receipts distributed to employees.

* * * * *

Federal and State Reports of Taxable Earnings for Social Security purposes for the third quarter of 1949 were completed and filed in October.

* * * * *

Payroll Deductions for Community Chest subscriptions were made in October. Approximately 1,000 employees took advantage of the Payroll Deduction Plan. Check covering deductions from salaries was deposited to the account of the Richland Community Chest, in the Seattle-First National Bank, Richland Branch.

* * * * *

In connection with the Charles E. Wilson 50th Anniversary Program arrangements were made in October for the various divisions to issue traffic appliance purchase forms, under the G. E. Employee Sales Plan, to employees at their place of work. The result will be a saving of time spent by employees who formerly were required to obtain such certificates in the 703 Building and of course there will be less inconvenience to employees who wish to take advantage of the Sales Plan.

Special effort has been placed on calculation of salary adjustments retroactive to April 11, 1949 under the Union Agreement so that distribution of payments may be made at the earliest possible date, thereby promoting good employee relations. Although Saturday overtime work in connection with calculation of the adjustments was discontinued on October 15 because of the exceptional progress that had been made, the payments will be distributed to employees on Friday, November 18, 1949. Original estimates indicated that distribution of these payments would be made late in December, 1949.

Considerable work was done in cooperation with Employee and Community Relations Division with respect to the New Group Health Insurance Plan, which, if accepted by 75% of eligible employees, will become effective on December 1, 1949.

1213071

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - OCTOBER 1949

SUMMARY

There was one lost-time injury in October making a total of 10 for the year to date and a frequency rate of 0.78.

There were 14 industrial area fires with a total loss amounting to approximately \$1,075.00.

Responsibility for operating the telephone exchange was transferred to the Electrical Division on October 10, 1949, following the cutover from manual to dial operation on October 7, 1949.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - OCTOBER 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	584	582		2 (a)
Safety and Fire Protection	151	151 (b)		
Office Services (General Services, Clerical Services, and Records Control)	242	209		33 (c)
	—	—	—	—
TOTALS	980	945		35

NET DECREASE 35

(a) - Patrol and Security

1 - Transferred from Clerical Services (Patrol)
3 - Terminations (Patrol)

(b) - Safety and Fire Protection

1 - Transferred from Clerical Services (Safety)
1 - Termination (Fire Protection)

(c) - General Services

4 - Rehired
3 - Transferred from other Divisions
1 - Returned from Leave of Absence
2 - Terminations
1 - Discharge

Clerical Services

6 - New Hires
6 - Terminations
15 - Transferred to other Divisions
20 - Transferred to Manufacturing Electrical (Telephone Exchange)
2 - Removed from Roll due to Leave of Absence
1 - Retired

1213073

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury 2
 Accumulated Exposure Hours since last Major Injury 81,494
 Major Injury Frequency Rate (start-up to date) 0.851

	<u>September</u>	<u>October</u>	<u>Year to Date</u>
Major Injuries	1	1	10
Sub-Major Injuries	4	4	34
Minor Injuries	308	310	3522
Exposure Hours	1,176,944	1,263,155	12,898,379
Major Injury Frequency Rate	0.85	0.79	0.78
Major Injury Severity Rate	0.012	0.002	0.027
Minor Injury Frequency Rate	2.62	2.45	2.73

Major Injury No. 66

October 29, 1949, at 10:00 P.M., an employee of the Power Division working in the 100-B Area Power House was injured when he attempted to stop the momentum of the stoker line shaft (after power had been turned off same) by removing the guard over V-Belt drive and then placing gloved left hand on V-Belt. The belt caught his fingers dragging them into the pulley. The injured received a compound fracture of the left little finger and a fracture of the ulna bone in forearm.

Sub-Major Injury No. 158

October 5, 1949, at approximately 3:00 P.M., an employee of the Village Public Works Division, Labor Section, incurred a fracture of the terminal phalanx of the left little finger when he caught it between the handle of a 70 lb. jack hammer and the support for a shelf that protruded from a nearby wall.

Sub-Major Injury No. 158½

October 7, 1949, at approximately 11:00 A.M., an employee of the Maintenance Minor Construction Group working at Project P-11, 120 Building, incurred a severe strain to the left ankle when the nails pulled out of the brace he was standing on causing him to fall approximately three feet, landing on his left foot which probably struck against the 4" x 2" kick back brace on the bottom of the form.

Sub-Major Injury No. 159

October 12, 1949, at approximately 3:30 P.M., an employee of the Electrical Division in the 100-F Area incurred a fracture to the end of the right little finger when it was caught between a section of 4" conduit pipe and the steel structure of the building tunnel.

Sub-Major Injury No. 160

October 12, 1949, at approximately 3:30 P.M., an employee of the Technical Division Metallurgy and Control, working in the 300 Area, incurred a transverse fracture of the left great toe when a stool was inadvertently tipped over in the Experimental Shop in 3706 Building. The falling stool hit the injured on the foot causing the injury.

Plant Security and Services Divisions

100 Areas Activities

The Building and Grounds Committee in the 100-B Area was very active during the month. Housekeeping has shown a general improvement in the Warehouse and area around 108 Building where Project Engineering has stored materials.

A question was raised at the 100-B Area Council meeting as to who has the right-of-way at railroad crossings. They were informed that trains always have the right of-way although process trains do stop and are flagged across by the switchman.

The installation of a metal catwalk on the Power Division water tank in the 100-B Area has been completed.

A tour of some of the operating buildings in the 100-B Area was made with Dr. Reps of the Medical Division and some problems of mutual interest were discussed. Also, effective this month, the Industrial doctors are spending more time in the Areas and are working closely with this office.

It has been found that compressed air hoses are being used in some buildings without self-closing valves, and some cases without pressure reducing valves. This has been called to the attention of parties involved.

A lengthy discussion was held relative to some Area-wide special safety activities to promote interest in completing the remaining 100 days for a no-lost time injury year in the 100-D Area. In view of recent plant experience in this regard, the 100-D Area Council members decided against any special program at this time.

The 100-D Area experienced no minor injuries during the first 17 days of October.

An Area Council Committee made a Fire and Housekeeping inspection of a number of buildings in the 100-D Area and a report of findings circulated to all Area Division heads.

A tour of some of the operating buildings in the 100-D Area was made with Dr. Riordan of the Medical Division and some problems of mutual interest were discussed.

The area safety committee in the 100-F Area met as a National Fire Prevention Week committee. Their efforts were directed mainly to fire prevention items.

A committee met to study and make recommendations on the safety of persons using the Hanford Ferry. The rules agreed upon have been sent to the Division Supervisor of Safety. The ferry is operated by the Atomic Energy Commission.

The pressurized kerosene tanks in use on the tar pots, 101 Area roofing job, had no indication of a hydrostatic test. It was recommended that each tank be tested hydrostatically and maximum operating pressure plainly painted on top of the tank.

200 Areas Activities

The 200-East Area Council Housekeeping Committee made a thorough fire inspection in October. The report indicated conditions generally good. Those items found in need of attention were referred to the proper persons for action.

The 200 Area Councils were informed that plans are being made by the 200 Area Safety Office to offer a series of supervisory training and assistance meetings. Schedule to be announced in November.

Plant Security and Services Divisions

300 Area Activities

The Analytical Section of the Metallurgy and Control Division of the Technical Divisions asked for a clarification of several points relative to the alteration of laboratories for the safe handling of flammable solvents. These points were discussed with them and mutually agreeable solutions worked out.

The rodent control program was placed into effect by the Public Health group. The results were effective but more limited than were expected. The situation appears to be under control for the time at least.

The Health Instrument buildings were inspected by the Area Inspection Committee. Conditions found were described as exceptionally satisfactory.

A meeting has been requested with the 3706 Building supervision to discuss the high incidence of fires in that building and what can be done to correct the situation.

700 - 1100 Areas Activities

The fifteenth meeting of the Nucleonics Safety Council was held on October 13, 1949

It was agreed by the Council that letters of recognition be sent to those who rendered First Aid at the scene of Major Injury Accident No. 65.

The subject of basement stairs was again discussed and the Safety Division was requested to make a study of the situation and present it to the Council

As a result of a survey made by the Safety Division, the Program Committee decided the Safety Topics of the Month will be continued.

The Safety Division assembled and distributed the book of Safety Bulletins that has been on order since last summer.

The Chief Supervisor of the Safety and Fire Protection Division attended the National Safety Congress at Chicago and spoke at one of the specially arranged meetings on the subject of revising the standards set up for the purpose of classifying major injuries.

FIRE PROTECTION

A tar pot fire in the 101 Area was investigated in an effort to reduce the number of fires of this nature.

Patrol was asked to install and operate a watch clock system in the 101 Building. Operation of the system will start November 1, 1949.

Fire lines in buildings in the White Bluffs Area that are not heated were drained to prevent freezing.

In the 300 Area, an attempt to free water mains of gravel by flushing through fire hydrants was unsuccessful. The Power Division will be contacted to correct this condition.

The fire detector system in the 2704-E Building, 200-East Area, was put in operation

Plant Security and Services Divisions

Supervision in the 234-5 Building were asked to remove unnecessary combustible material from the building as soon as possible.

Hydrants in the 100-H Area were given special attention (flushed and paint in threads removed).

Several hot plates in the 100-H Area have not been properly installed.

Minor Construction in the 100-F Area is creating many fire hazards and are receiving special attention of the Fire Inspector.

The increased activity in all areas in observance of Fire Prevention Week was lectures on fire prevention, fire extinguisher demonstrations, evacuation drills, and area inspections by special committees. The topic of the month was Fire Prevention and a pamphlet dealing with the safe handling of flammable liquids was given to all employees at safety meetings.

A review of the fire alarm system for Redox was made with the Design Group.

Additional plans of P-11 and the 108-F Building were reviewed and approved.

Industrial Fires

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Technical	300	1	Electric	None
Technical	300	1	Explosion	\$ 10.00
Maintenance	101	1	Spilling of tar on burner	None
Project Engineers	100-F	1	Welding	None
Power	101	1	Electric	\$1050.00
Project Engineers	Hanford	1	Hot coals and ashes	None
Project Engineers	100-D	1	Cutting with torch	None
Bonneville Power	Midway Sub- Station	1	Fire not completely put out	None
	TOTAL	8	TOTAL	\$1060.00

Industrial Investigations

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Security & Patrol	200-W	1	Cigarettes	None
Technical	300	1	Cause Undetermined	None
Maintenance	300	1	Welding	\$ 5.00
Maintenance	101	1	Overheating of Tar Pot	None
Maintenance	200-W	1	Electric	None
	TOTAL	5	TOTAL	\$ 5.00

Construction Investigations (Industrial Area)

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Construction	White Bluffs	1	Spark from cutting torch	\$ 10.00
<u>TOTAL NUMBER OF FIRES</u>		<u>14</u>	<u>TOTAL LOSS</u>	<u>\$ 1075.00</u>

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Plant Security and Services Divisions

OFFICE SERVICES DIVISION

General Services

Laundrying volumes were as follows:

Plant Laundry (Building 2723)

	<u>September</u>	<u>October</u>
Coveralls - Pieces	26,847	28,510
Towels - Pieces	8,164	8,854
Miscellaneous - Pieces	<u>66,610</u>	<u>61,317</u>
Total Pieces	101,621	98,681
Total Dry Weight - Lbs.	141,892	141,058

Richland Laundry (Building 723)

Flatwork - Pieces	59,485	55,047
Rough Dry - Pieces	29,400	30,092
Finished - Pieces	<u>3,536</u>	<u>3,017</u>
Total Pieces	92,421	88,156
Total Dry Weight - Lbs.	60,074	57,301

Monitoring Section (Building 2723-W)

Poppy Check - Pieces	67,110	72,861
Scaler Check - Pieces	<u>76,775</u>	<u>92,132</u>
Total Pieces	143,885	164,993

723 Laundry

Three employees were given an R.O.F. in this laundry the past month. This reduction was caused by the lower volume of work coming from the North Richland Construction Camp.

Clerical Services

Telephone Exchange

Responsibility for operating the telephone exchange was transferred to the Electrical Division on October 10, 1949.

Placements in other jobs were made for all personnel desiring transfers except for two of the telephone operators.

The cut-over from manual to the dial system occurred Friday night, October 7, 1949.

Plant Security and Services Divisions

Mail Room

Large amounts of advertising mail have been received addressed to employees at their plant address. Arrangements have now been made with the Post Office so that all such mail will be returned to them for handling as we are not in a position to deliver such large quantities of personal mail.

The volume of work in the Mail Room continues to be very heavy.

	<u>September</u>	<u>October</u>
Pieces of Internal Mail Handled	340,500	339,876
Pieces of Postal Mail Handled	57,666	58,792
Pieces of Registered Mail Handled	930	896
Pieces of Insured Mail Handled	120	235
Pieces of Special Delivery Mail Handled	114	140
	<hr/>	<hr/>
Total Mail Handled	399,330	399,939
Total Amount Postage Used	\$1,403.82	\$1,375.53
Teletypes Sent Out	957	530
Teletypes Received	934	651
	<hr/>	<hr/>
Total Teletypes Handled	1,891	1,181
Total Number of Store Orders filled	1,747	1,268

Office Equipment

A physical inventory was taken of all equipment now in our stock in Pasco, and a Kardex control has been established.

A purchase order was issued to cover those items of exceptionally good furniture located in excess at the Oregon Ship Yards. This equipment will be shipped to us as soon as the War Assets Offices close, which will be approximately January 1, 1950.

	<u>September</u>	<u>October</u>
Office Machines repaired in shop	172	126
Office Machine service calls	275	256
	<hr/>	<hr/>
Total Machines Serviced	447	382

Printing

Records have been set up for a study on requirements of additional equipment and personnel which would enable us to handle some of the printing work now being done off the Plant. It will take approximately three to six months to complete this study so that a decision can be made as to the desirability of such an expansion.

Plant Security and Services Divisions

	<u>September</u>	<u>October</u>
Multilith orders received	243	227
Multilith orders completed	236	215
Multilith orders on hand at month end	54	66
Mimeograph orders received	2183	2078
Mimeograph orders completed	2183	2078
Ditto orders received	1153	1012
Ditto orders completed	1153	1012
Ditto orders on hand at month end	0	0
Mimeograph orders on hand at month end	0	0

Stenographic Services

	<u>September</u>		<u>October</u>	
	<u>Hours</u>	<u>Quantity</u>	<u>Hours</u>	<u>Quantity</u>
Dictation and Transcription	0	0	0	0
Machine Transcription	4:30	8	1:30	2
Letters	144:30	330	43:15	121
Manual and Procedures	33:30	108	16:00	30
Duplicating - Stencils, Ditto	189:45	513	117:15	269
Special	343:05	1016	406:00	478
Training	271:00	---	61:15	---
Termination	15:00	---	---	---
Unassigned time during month	12:00	---	12:00	---
	---	---	---	---
Total Hours	1,002:20		657:15	
Employees loaned to other Divisions	1,141:30		908:00	
Total Hours Available	2,143:50		1,565:15	

Records Control Division

Records inventory of Atkinson & Jones Construction records completed. Records inventory of Construction Division records completed. Inventory of Manufacturing Divisions records is 95% complete.

McNeil Construction Company records have been checked and are complete.

J. A. Terteling & Sons records on Subcontract G-173 received and checked. All records are accounted for except miscellaneous accounting records.

Records Control Procedure was developed, approved and issued as Instructions Letter No. 123, Revised. Meetings to explain Records Control Procedure were held with 700, 100-B, 100-F and 200-E Area Councils.

Forms Control and Methods Engineer:

A complete review of all forms being carried in Stores Stock is now in progress. To date, there have been sixty of these forms declared as obsolete, thirty of which were Medical Division forms. This review will

Plant Security and Services Divisions

continue, the purpose being to remove from Stores Stock all obsolete forms and also any forms which are carried in small quantities and being used by only one Division.

	<u>September</u>	<u>October</u>
Cases of Records Received and Processed	224	177

Summary of records received and processed in October:

Community Divisions	2 # 1	Oxford Files
Construction Divisions	25	New Type Cases
Design Division	5	" " "
Medical Division	28 # 1	Oxford Files
Purchasing & Stores Division	23 # 1	" "
Purchasing & Stores Division	16 # 5	" "
Sub-Contractors:		
McNeil Construction Co.	3 # 8	" "
J. A. Terteling & Sons	14 # 8	" "
" " " "	2 # 13	" "
" " " "	26 # 1	" "
" " " "	7 # 2	" "
" " " "	7	Payroll Binders (Large)
Morrison Knudsen (G1012)	10 # 1	Oxford Files
" " (G222 & G160)	9 # 2	" "
TOTAL	177 Cases	

	<u>September</u>	<u>October</u>
Cases issued to various divisions for filing:	121	220
Persons viewing records:	27	70

PATROL AND SECURITY

General

Effective October 3, 1949, all Construction Post Orders and Instructions pertinent to 105-H Construction Area were rescinded and normal Operation Orders and Instructions were enforced.

A security survey was made of the Charles T. Main Company of Boston, Massachusetts from October 4 through October 7, 1949. This company was granted a contract for off-site work, and security measures and controls were established in accordance with the contractile agreement. Arrangements were completed whereby the Atomic Energy Commission representative at Kellex Corporation, New York City, will directly handle the clearance of Charles T. Main personnel. Heretofore, this function was handled at Hanford Works.

A representative of the G-E Security Division visited the Kellex Corporation in New York City on October 10, 1949, and made a security survey of that installation with a representative of the Atomic Energy Commission. In addition, procedures were established so that the Atomic Energy Commission will approve all Kellex personnel visits to other installations other than Hanford Works. The New York Office of the Atomic Energy Commission was previously responsible for approving these off-site visits.

A new search procedure was inaugurated in the 200-East Area on October 10. This procedure requires the assistance of the Health Instrument Division and specifically applies to the searching of female employees leaving the area.

Plant Security and Services Divisions

On October 11 and 12, the NLRB election was held to determine if the Hanford Patrol desired to be represented by the International Guards' Union. The vote was 168 for and 355 against such representation by this organization.

Beginning October 12, the Radio Operator in the 100-B and 100-D Areas will notify the Main Badge House to prepare ten emergency badges with pencils, which are to be issued in case a fire is reported in either the 100-B or 100-D Areas. This procedure will be activated when the White Bluffs Fire Department has been summoned for assistance.

The 100-H Area was reclassified from a "controlled" to a "limited" area at 11:00 P.M. on Friday, October 14. Entry and exit from this area will be through the Main Badge House with security clearance and badge required for entrance.

The law enforcement training courses, publicized in the Works News issue of September 30, were begun October 17 at Dormitory W-10 through the facilities of the G-E Educational Program. Special Agents of the Federal Bureau of Investigation are furnishing all instruction at the training school for Security Patrol and Atomic Energy Commission Security personnel. This series of training courses will continue until November 14, 1949.

A memorandum was issued by the Security Division on October 21 to all Division Heads entitled "Listing File Cabinet Custodians". This clarified the question as to whose name should be posted, and in what order, on the back side of the cabinet drawers in case the file is found open by Security Patrol after normal working hours.

A fixed post was added to the 100-B Area Security Patrol on October 24. This post will be designated as "Supply and Auxiliary Fire Truck Driver".

Effective October 24 at 12:01 A.M., the 100-H Area and 100-F Area Security Patrol discontinued the manning of railroad crossings.

On October 27, the Hanford Ferry was inspected by a committee composed of personnel from the Transportation Division, Atomic Energy Commission Safety and Security Patrol Division to determine safe operation of the ferry. This committee made specific recommendations which are being enforced by Security Patrol.

Railroad Crossing Post No. 3 was discontinued by the 200-East Area Security Patrol at 12:01 A.M., October 29.

Beginning October 31, female employees in the 100 Areas will be subject to a spot check for Government property and/or contraband material. This check will be conducted by a female employee of the Health Instrument Division.

The "Q" orientation talk was given to 111 employees who received their formal "Q" clearance from the Atomic Energy Commission during the month.

PATROL

The 200 Areas handled 79 process escorts between the areas.

Requests handled totaled 822, consisting mainly of opening doors, gates and providing escorts for employees of other departments.

Plant Security and Services Divisions

A total of 67 Unusual Incident Reports were received, consisting mainly of lost badges, pencils, contraband picked up at barricades, traffic accidents and fires.

Patrol supervision handled six First Aid cases during the absence of the Area Nurse.

Classified escorts totaling 53 were handled during the month.

Practice evacuations were held as follows:

100-B Area	10-27-49	1:10 P.M.
100-D Area	10-11-49	9:37 A.M.
100-F Area	10-26-49	1:06 P.M.

Practice Black-outs were held as follows:

100-B Area	10-20-49	2:01 A.M.
100-D Area	10-18-49	9:07 P.M.
100-F Area	10-21-49	10:15 P.M.
100-H Area	10-25-49	8:59 P.M.
200-E Area	10-21-49	9:30 P.M.
200-W Area	10-21-49	9:30 P.M.

Arrest Summary

	<u>September</u>	<u>October</u>
Warning tickets issued	8	0
Verbal warning given	0	8
Citation tickets issued (traffic only)	1	1

Accident Summary

Total accidents	3	5
Government permits revoked	0	0

Training

The course for instruction at the Training School this month were:

	<u>Hours</u>
Pistol	2
First Aid	1/2
Li-8 Training	3 1/2
Safety	1/2
Health Talk	1/4
Handling of Government Equipment	1/2
Security	3/4

The Safety Bulletin Board which was constructed during the month of May was also used during the month of October.

The score board which shows what classification a man firing over the Army-L Range is shooting in was also used during the month of October.

Plant Security and Services Divisions

The competitive safety program is being continued.

An inspection was made of guns in all areas including the Community Patrol. Plans were made for the arrangement and construction of racks for machine guns and equipment to be kept in the arsenal.

Training film was arranged, cut and spliced for use in the training program.

The Maintenance Section inspected the damaged roof on the Training Building and submitted an estimate of the cost to repair it.

Copies of the rules of the "Patrol Safety Hurdle Race" were sent to all areas concerned.

Arrangements were made to have each patrolman issued an individual hand gun which will be used only by the man to whom it was issued.

A badge rack and specimen photo badges were obtained for use in conjunction with a class on badge house procedure.

SECURITY

There were 198 security meetings held and attended by 2,719 General Electric employees during the month.

The following Security Bulletins were issued to all Operations personnel during the month:

- Bulletin No. 43 "Merging of Documents and Off-Site Transmittals".
- Bulletin No. 44 "Change of Classification Guide".

The second in a series of security posters was posted in 81 of the industrial buses on the project October 12. They had the inscription: "Some Deliveries Need Extra Care! Be Sure! Use Authorized Methods to Send Classified Material - Security . . . It's Up to You."

Employee Clearance

Class "Q" clearance received on old employees this month	1
Class "Q" clearances received on old employees to date	4,457
Class "Q" clearances received on new employees this month	83
Class "Q" clearances received on new employees to date	6,162
Class "Q" clearances received on both old and new employees since February 17, 1947	10,619
Formal "P" clearances awaiting change to "Q"	41
Authorization clearances issued this month	44

Plant Security and Services Divisions

Statistical Summary of Outstanding Area Badges

	September				October				
	A	B	C	Total	A	B	C	Total	
100-B	607	1675	476	2758	100-B	586	1691	468	2746
100-D	736	874	522	2132	100-D	711	921	519	2151
100-F	804	1560	494	2858	100-F	792	1538	487	2867
200-E	960	1716	348	3024 *	200-E	949	1747	345	3041 *
200-W	1440	1647	338	3425	200-W	1429	1661	350	3440
300	1313	1597	231	3141	300	1345	1575	228	3148
200-N	39	863	131	1033	200-N	36	870	131	1037
					100-H	693	935	308	1936

* Includes 36 "A" badges at Riverland Yards

* Includes 36 "A" badges at Riverland Yards

Visitor or Temporary Badges

Area	September	October
100-B	428	442
100-D	846	872
100-F	716	746
200-E	637	667
200-W	534	579
300	1229	1279
200-N	978	985
100-H		165
TOTAL	5368	5735

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to AEC this month:	6	Personnel:	54
Total companies forwarded to AEC last month:	8	Personnel:	192
Total companies forwarded to AEC to date:	226	Personnel:	2,363
Total companies cleared for restricted data this month:	5	Personnel:	42
Total companies cleared for restricted data last month:	5	Personnel:	16

New companies forwarded to the Atomic Energy Commission this month:

Cochrane Corporation
705 E. Broadway
Tucson, Arizona

Grove Regulator Company
6525 Hollis Street
Oakland 8, California

Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "Q"	278
Formal "P"	10
"P" only	125

HANFORD WORKS
 General Electric Company
 Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING OCTOBER 31, 1949

<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>
MEDICAL DIVISION							
I. Visits to other Installations							
P. A. Fuqua, M. D. to: University of California Berkeley, California	Fall meeting of labora- tory and medical direct- ors. Discussions on radiation effects	J. Z. Bowers	10-21-49	10-22-49		X	
DESIGN DIVISION							
I. Visitors to this Works							
E. Long Knolls Atomic Power Laboratory Schenectady, New York	Consultation and design	A. G. Silvester	10-4-49	10-6-49		X	
A. C. Blake Charles T. Main, Incorporated Boston, Massachusetts	Discussion on general responsibilities in carry- ing design of project	L. O. Hasselblad	10-7-49	10-8-49		X	
A. B. Bell Charles T. Main, Incorporated Boston, Massachusetts	Discussion on general responsibilities in carry- ing design of project	L. O. Hasselblad	10-7-49	10-8-49		X	
W. H. Jens Argonne National Laboratory Chicago, Illinois	Discuss experimental pro- grams	H. S. Isbin	10-11-49	10-11-49		X	300 3706 100-D 105
W. Strasser Strasser Drilling Co., Portland	Geological information	J. A. McCool	10-11-49	10-11-49		X	

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>	
A. A. Nickman Representing Self San Gabriel, California	Conference	W. E. Johnson	10-19-49	10-19-49		X	
H. J. Gearin The Fluor Corporation Los Angeles, California	Consultation on future plans	W. E. Johnson	10-21-49	10-21-49		X	
W R Langdon General Electric Company Schenectady, New York	Design consultation	G. Thayer	10-24-49	10-28-49	X		200-W 234 235
E. Girardot General Electric Company Schenectady, New York	Design consultation	G. Thayer	10-24-49	10-28-49	X		200-W 234 235

II. Visits to other Installations

C O Clemetson to: Kellex Corporation New York, New York	Technical consultation separations process design	G. White, Jr.	10-11-49	10-14-49	X		
J. M. Frame to: Argonne National Lab. Chicago, Illinois	Use of plate glass view- ing windows for operation of radioactive equipment	H. L. Hull	10-10-49	10-10-49	X		
J. M. Frame to: Kellex Corporation New York, New York	Separations process de- sign	G. White, Jr.	10-11-49	10-14-49	X		
R. E. Smith to: Mallinckrodt Chemical Co. St. Louis, Missouri	Conversion of UNH	W. H. Keller C. D. Herrington	10-17-49	10-18-49	X		
J. M. Frame to: Mallinckrodt Chemical Co. St. Louis, Missouri	Conversion of UNH	W. H. Keller C. D. Herrington	10-17-49	10-18-49	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>Class</u>	<u>Unclass</u>	<u>ArCAS</u>
E. A. Smith to: Charles T. Main, Inc. Boston, Massachusetts	Administration of Architect Engineer Contract. 100-DR Water Plant	Archi-W. F. Uhl	10-10-49	Indefinite	X		
W. A. Graf to: Kellex Corporation New York, New York	Transmit information on N. A. Spector scope	N. A. Spector	10-28-49	11-11-49	X		
H. E. Hanthorn to: Kellogg Corporation New York, New York	Transmit information on N. A. Spector scope	N. A. Spector	10-28-49	11-11-49	X		
H. W. Huntley to: Kellogg Corporation New York, New York	Transmit information on N. A. Spector scope	N. A. Spector	10-28-49	11-11-49	X		
G. Thayer to: Gen. Eng. & Consulting Lab. Schenectady, New York	Consultation re project R. S. Neblett Lab. 432	R. S. Neblett D. H. Marquis	10-24-49	10-28-49	X		
J. W. Conley to: Charles T. Main, Inc. Boston, Massachusetts	Discussions G-274	R. A. Moncrieff	10-20-49	10-24-49	X		
L. O. Hasselblad to: Charles T. Main, Inc. Boston, Massachusetts	Discussion of procurement and cost control on C-342	W. F. Uhl	10-21-49	10-27-49	X		
HEALTH INSTRUMENT DIVISIONS							
I. Visitors to this Works	General discussion	H. M. Parker	10-27-49	10-27-49	X		
W. D. Urry Technical Working Committee AFONT 1, U S Air Force Washington, D. C.							

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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>
W. E. Harlan Technical Working Committee AFOAT 1, U. S. Air Force Washington, D. C.	General discussion	H. M. Parker	10-27-49	10-27-49	X		
L. Gemmel Brookhaven National Laboratory New York, New York	Health Instrumentation Program	H. M. Parker C. M. Patterson W. A. McAdams R. J. Gandy	10-19-49	10-27-49	X		300-All 100-B 100-F 105 105 100-H 105 200-E 221-B 200-W 221-T, 231 100-D 105
T. H. Thomas Oak Ridge National Laboratory Oak Ridge, Tennessee	Obtain information on our monitoring system	C. C. Gamertsfelder	10-20-49	10-22-49			300-All 100-D 105 100-F 105
W. H. Jordan Oak Ridge National Laboratory Oak Ridge, Tennessee	Oscilloscope for laboratory	C. C. Gamertsfelder	10-20-49	10-22-49			300-All 100-D 105 100-F 105
A. M. Piper U. S. Geodetic Survey Portland, Oregon	Consultation	H. M. Parker	10-27-49	10-27-49	X		
II. Visits to other Installations							
L. K. Bustad to: Deaconess Hospital Boston, Massachusetts	Instruction in radia- tion pathology	S. Warren	10-8-49	11-10-49		X	
L. K. Bustad to: Brookhaven National Lab. New York, New York	Discuss thyroid path- ology and measurement	- -	10-4-49	10-4-49		X	
L. K. Bustad to: Naval Med. Research Inst. Bethesda, Maryland	Discussion of large animal studies	Dr. Cronkite	11-7-49	11-7-49		X	

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Name - Organization

S. B. Biddle
Leeds & Northrup Company
San Francisco, California

L. Emorich
Leeds & Northrup Company
San Francisco, California

MANAGEMENT

I. Visitors to this Works

K. Runkle
Apparatus Department
General Electric Company
Schenectady, New York

Rolling mill operation G. G. Lail
in 300 Area

II. Visits to other Installations

W. I. Patnode
to: Knolls Atomic Power Lab
Schenectady, New York

W. I. Patnode
to: Kellogg Corporation
New York, New York

W. I. Patnode
to: Jersey City Laboratory
New York, New York

MANUFACTURING MANAGEMENT

I. Visitors to this Works

T. Seaman
Los Alamos Scientific Lab.
Los Alamos, New Mexico

Restricted Data
Class Unclass
Areas

Purpose of Visit

Arrival

Departure

Person Contacted

X

10-28-49 10-28-49

W. M. Mathis

X

10-28-49 10-28-49

W. M. Mathis

10-21-49 10-22-49

G. G. Lail

100-B 105 100-H
100-D 105 105
100-F 105
200-E 221-B
200-W 221-T, 231
300 Area
200-N- NPR

X

10-31-49 11-4-49

Technical consultation K. H. Kingdon
and inspection regarding
HW

X

11-2-49 11-2-49

Technical consultation B. R. Prentice
and inspection regarding
HW

X

11-2-49 11-2-49

Technical consultation B. R. Prentice
and inspection regarding
HW

X

10-24-49 10-28-49

Inspection of 234-5
facility 273091 J. E. Maider, Jr.
T. Prudich

200-W
234 and 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>Area</u>
					<u>Class</u>	<u>Unclass</u>	

II. Visits to other Installations

C. N. Gross to: Oak Ridge National Lab Oak Ridge, Tennessee	Attend General Informa- tion	E. J. Murphy	10-25-49	10-28-49		X	
C. N. Gross to: General Electric Company Schenectady, New York	Consultation on HW matters	R. S. Neblett	10-31-49	11-4-49		X	

POWER DIVISION

I. Visits to other Installations

H. F. Measley to: Charles T. Main, Inc. Boston, Massachusetts	Consultation of design of 100-DR water plants	R. A. Moncrieff	10-24-49	10-26-49		X	
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PURCHASING AND STORES DIVISION

I. Visitors to this Works

E. Winkleman Inland Motor Freight Pasco, Washington	Deliver 174 pieces sewer tile to 100-F	H. O. Monson	10-18-49	10-18-49		X	100-F XXX
A. R. Wiegand United Truck Lines Pasco, Washington	Deliver 7,000 pound motor on order # HWC-7623	H. O. Monson	10-24-49	10-24-49		X	300 XXX
R. Culberhouse Propane Gas & Equipment Company Pasco, Washington	Deliver bulk propane gas on HW-5269G	H. O. Monson	10-24-49	10-24-49		X	300 XXX
D. Westermeyer Consolidated Freightways Pasco, Washington	Deliver graphite cru- cibles	H. O. Monson	10-26-49	10-26-49		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</u>		<u>Areas</u>
					<u>Class</u>	<u>Unclass</u>	
D. Westermeyer Consolidated Freightways Pasco, Washington	Deliver load of 21,000 pounds of Bismuth Metal	H. O. Monson	10-31-49	10-31-49	X		200-W YXX 200-E XXX
C. C. Cunha Fairbanks Morse Company Portland, Oregon	Inspection of materials on order IWC-5220	H. A. Hauser	10-10-49	10-10-49		X	
S. A. Thomas Johnson Service Company Seattle, Washington	Inspection of materials on order IWC-5684	H. A. Hauser	10-11-49	10-11-49	X		

PROJECT ENGINEERING DIVISIONS

I. Visitors to this Works

N. F. Barnes
General Electric Company
Schenectady, New York

Remote viewing by tele-
vision and by binocular
periscope, DR and H dollys
hot lab microscope

10-28-49 10-30-49 X
234 105
100-H 105

"S" DIVISION

I. Visits to other Installations

H. A. Moulthrop
to: Gen. Eng. & Consulting Lab. project
Schenectady, New York

Consultation on 432
D. H. Marquis
D. H. Marquis

O C. Schroeder
to: Mallinkrodt Chemical Corp. problems
St. Louis, Missouri

Consultation on design
C. D. Herrington
W. H. Keller

10-10-49 10-14-49 X
10-24-49 11-25-49 X

10-17-49 10-18-49 X

O C. Schroeder
to: Argonne National Lab.
Chicago, Illinois

Consultation on design
H. L. Hull
problems

10-10-49 10-10-49 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>Class</u>	<u>Uniclass</u>	<u>Restricted Data Areas</u>
C. T. Groswith to: Gen. Eng. & Consulting Lab. progress on Project 432 Schenectady, New York	Review of Schenectady	D. H. Marquis	10-24-49	10-28-49	X		
PLANT SECURITY & SERVICES DIVISION							
I. Visits to other Installations							
T. B. Farley to: Kellex Corporation New York, New York	Security survey	L. F. Perkins G. E. Sago	10-10-49	10-11-49	X		
T. B. Farley to: Charles T. Main, Inc. Boston, Massachusetts	Security survey	W. F. Uhl	10-3-49	10-7-49	X		
TRANSPORTATION DIVISION							
I. Visitors to this Works							
J. W. Ward J. A. Terteling & Sons Co. Boise, Idaho	Obtain necessary information to submit bid on proposed contract	M. F. Rice	10-25-49	10-26-49	X		200-W XXX
F. G. Morris Turco Products, Incorporated Seattle, Washington	Inspect steam cleaner installation, checked unit for changes and repairs	M. F. Rice H. B. Bears	10-11-49	10-11-49	X		
TECHNICAL DIVISIONS							
I. Visitors to this Works							
M. A. Libbey Atomic Energy Commission Washington, D. C.	Discuss shielding and related problems	R. L. Dickeman	10-31-49	10-31-49	X		300-3706 100-D 105 100-F 105
M. Calvin Radiation Laboratory Berkeley, California	Research and development programs and inspection	F. W. Albaugh	10-13-49	10-14-49	X		300-3706, 200-W 321 221-T, 231; 200-E 221-F

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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>Unplans Areas</u>
D. H. Marquis Gen. Eng. & Consulting Lab. Schenectady, New York	234-5 consultation	R. H. Beaton	10-12-49	10-14-49	X	200-W 221-T 231, 234 and 235
D. E. Carr Gen. Eng. & Consulting Lab Schenectady, New York	234-5 Consultation	R. H. Beaton	10-12-49	10-17-49	X	200-W 221-T 231, 234 and 235
D. A. Brown Los Alamos Scientific Lab. Los Alamos, New Mexico	234-5 consultation	J. B. Work B. Weidenbaum	10-24-49	10-28-49	X	300, 3706, 321 300, 3706 200-W 231 234 and 235
B. F. Rider Knolls Atomic Power Laboratory Schenectady, New York	Analytical chemistry consultation	L. M. Knights J. W. Hall D. F. Shepard	10-17-49	10-20-49	X	300 3706 200-W 221-T 231 200-E 221-B
CONSULTANTS TO HANFORD WORKS						
M. R. Fenske Standard Oil Development Co. Bayway, New Jersey	Redox consultation	R. H. Beaton	10-11-49	10-13-49	X	300 3706, 321 200-W 221-T, 231
G. W. Watt University of Texas Austin, Texas	234-5 consultation and inspection	R. H. Beaton	10-20-49	10-24-49	X	300 3706, 321 200-W 221-T 231, 234, 235
CONSULTANT TO REPRESENT TECHNICAL AT MEETING						
W. Bain General Electric Architect Eng. Jersey City Laboratory Jersey City, New Jersey	Attend general informa- tion	- - -	10-24-49	10-26-49	X	-
II. Visits to other Installations						
E. M. Kinderman to: Oak Ridge National Lab Oak Ridge, Tennessee	Attend project informa- tion meeting and discuss analytical problems	F. W. Hurd M. T. Kelly	10-24-49	10-28-49	X	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>
W. N. Carson, Jr. to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend project information meeting and discuss analytical problems	F. W. Hurd M. T. Kelly	10-24-49	10-28-49	X	
R. H. Moore to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend project information meeting and discuss analytical problems	F. W. Hurd M. T. Kelly	10-24-49	10-28-49	X	
R. B. Socky to: Ford Motor Company Detroit, Michigan	Investigate cathodic vacuum etching	S. Miller	10-10-49	10-19-49	X	
R. B. Socky to: Battelle Memorial Institute Columbus, Ohio	Discuss project metallurgy	H. R. Nelson	10-20-49	10-20-40	X	
R. B. Socky to: Metals Congress Cleveland, Ohio	Attend Metals Congress meeting	- -	10-17-49	10-21-49		X
R. B. Socky to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend project information meeting	F. W. Hurd	10-24-49	10-27-49	X	
C. G. Stevenson to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend AEC Library conference	I. A. Warheit	10-26-49	10-29-49	X	
C. G. Stevenson to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend meeting of Technical Information Panel	- -	10-31-49	11-1-49	X	
C. G. Stevenson to: Kellogg Corporation New York, New York	Inspect classified files	Dr. Lytz Dr. Donnell	10-25-49	10-25-49	X	
T. W. Hauff to: Simonds Saw & Steel Lockport, New York	Inspect and discuss rolling operations	A. D. Potts	10-17-49	10-18-49	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>Unusual Areas</u>
T. W. Hauff to: Battelle Memorial Inst. Columbus, Ohio	Inspect and discuss metallurgical operations and facilities	H. W. Russell	10-26-49	10-27-49	X	
T. W. Hauff to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting and inspect metallurgical facilities	E. J. Murphy	10-23-49	10-26-49	X	
T. W. Hauff to: Mallinkrodt Chemical Co. St. Louis, Missouri	Inspect and discuss metallurgical operations	V. H. Keller	10-27-49	10-29-49	X	
T. W. Hauff to: Argonne National Lab. Chicago, Illinois	Inspect and discuss metallurgical facilities and programs	N. H. Hilberry	10-16-49	10-17-49	X	
T. W. Hauff to: Knolls Atomic Power Lab. Schenectady, New York	Inspect and discuss facilities and programs	J. P. Howe	10-19-49	10-21-49	X	
F. B. Quinlan to: Knolls Atomic Power Lab. Schenectady, New York	Hot Laboratory and Hot Cell Design consultations	H. H. Race H. H. Zornig	10-19-49	10-21-49	X	
R. L. Dickeman to: Atomic Energy Commission Washington, D. C.	Attend meeting of shielding group	L. Tonks	10-12-49	10-15-49	X	
R. L. Dickeman to: Argonne National Lab. Chicago, Illinois	Technical consultation on shielding	J. M. West	10-17-49	10-17-49	X	
D. F. Snoeberger to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-23-49	10-27-49	X	
D. E. Davenport to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-23-49	10-27-49	X	

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Restricted Data
Class Unclass Arms

<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>Arms</u>
E. A. Eschbach to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphy	10-23-49	10-27-49	X		X
P. F. Cast to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting and consultation on K-25 experiment	E. J. Murphy A. D. Callahan	10-23-49	10-27-49	X		X
D. E. Davenport to: Argonne National Lab. Chicago, Illinois	Technical consultation on standardization of facilities	A. Wattenberg	10-27-49	10-28-49	X		X
D. E. Davenport to: Brookhaven National Lab. Long Island, New York	Technical consultation on standardization of facilities	L. Borst	10-31-49	11-1-49	X		X
D. E. Davenport to: Atomic Energy Commission New York, New York	Technical consultation on procurement of sources	E. B. Meservey	10-31-49	11-1-49	X		X
C. A. Rohrmann to: Mallinkrodt Chemical Works St. Louis, Missouri	Consultation on uranium oxide manufacture	W. H. Keller	10-17-49	10-18-49	X		X
R. E. Smith to: Mallinkrodt Chemical Works St. Louis, Missouri	Consultation on uranium oxide manufacture	W. H. Keller	10-17-49	10-18-49	X		X
F. J. Lertz, Jr. to: Oak Ridge National Lab Oak Ridge, Tennessee	Metal recovery conference	F. L. Steahly	10-18-49	10-20-49	X		X
F. W. Woodfield, Jr. to: Oak Ridge National Lab Oak Ridge, Tennessee	Metal recovery conference	F. L. Steahly	10-18-49	10-20-49	X		X
C. M. Hammack to: Brookhaven National Lab. Long Island, New York	Consult with instrumentation development group	L. Borst W. Higginbottom	10-31-49	11-3-49	X		X

DECLASSIFIED

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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>
R. E. Burns to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
W. A. Burns to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
A. G. Blawsewitz to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
M. E. Curtis to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
K. M. Harmon to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
W. E. Roake to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
J. L. Schwenneson to: Oak Ridge National Lab. Oak Ridge, Tennessee	Attend information meeting	E. J. Murphey	10-24-49	10-26-49	X		
K. M. Harmon to: Argonne National Lab Chicago, Illinois	Consultation and inspection of Redox Operation (WER, WAB, KMH)	H. H. Hyman	10-27-49	10-28-49	X		
W. E. Roake to: Argonne National Lab Chicago, Illinois	Consultation and inspection of Redox Operation (WER, WAB, KMH)	H. H. Hyman	10-27-49	10-28-49	X		
W. A. Burns to: Argonne National Lab Chicago, Illinois	Consultation and inspection of Redox Operation (WER, WAB, KMH)	H. H. Hyman	10-27-49	10-28-49	X		

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PURCHASING AND STORES DIVISIONS
SUMMARY
OCTOBER, 1949

Personnel of the Purchasing and Stores Divisions showed a net increase of fifteen people. The increase has been necessary due to increased work load in the Purchasing Division and also due principally to the accelerated effort of the Stores Division to issue a catalog on all surplus, salvage and scrap materials as early as possible.

	<u>Total Personnel as of 9-30-49</u>	<u>Total Personnel as of 10-31-49</u>	<u>Net Change</u>
Exempt	46	49	Plus 3
Non-Exempt	256	268	Plus 12
TOTALS	<u>302</u>	<u>317</u>	<u>Plus 15</u>

The work load of the Purchasing Division continues to increase as indicated by the fact that we received 2,482 purchase requisitions this month as compared to 2,177 purchase requisitions received during September.

The coal mines west of the Mississippi resumed operations and daily shipments of coal started on October 3, 1949.

Arrangements were made for the Stauffer Chemical Company to produce 50,000 pounds of Aluminum Nitrate in a new pilot plant which will be set up in Tacoma, Washington by this Company. Our needs for this product represent considerably more than has been produced in the United States previously.

As a result of negotiations between the Traffic Section and the carriers, rate reductions were obtained on Nitric and Sulphuric Acids which will result in an annual savings of approximately \$26,900.

Reduction in freight charges for the month of October amount to \$3,221.60.

Stores active inventories were reduced by \$168,006.44. This was accomplished by the disposal of obsolete materials and a continuing review and adjustment of stock levels.

1,988 purchase requisitions were screened during the month and 1,496 items were furnished from plant stocks, thereby obviating the necessity of offplant purchases.

Inventories of Subcontractor-held inventories have been completed on several captions and catalogs have been furnished to the individuals responsible for ear-marking materials which will be required for new construction.

105 representatives of Government agencies and private businesses were escorted through the project for the purpose of inspecting surplus, salvage and scrap materials.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
OCTOBER, 1949

GENERAL

An increase in the work load was again noted during the month of October. 1,546 purchase orders were placed as compared to 1,326 placed in September. 2,482 purchase requisitions were received and assigned as compared with 2,177 during September. Requisitions on hand at month end totaled 647 as compared with 664 at the end of the previous month.

A committee consisting of representatives from the Purchasing Division, Design and Construction Divisions, Construction Accounting Division and Atkinson and Jones formulated a standard purchasing procedure to be used by the fixed-fee subcontractors working on the project.

The coal mines operating west of the Mississippi resumed operations and daily shipments of coal started on October 3. However, a breakdown occurred on the 27th of October which could not be repaired for approximately seven days. To assure a continuous supply of coal during the shut-down, 6,760 tons were scheduled from the Roslyn mines.

At the request of the Government Procurement Office and the Health Instrument Divisions, the Purchasing Division is performing the inspection of Juno Survey Instruments purchased by the Government. An instrument engineer, on loan to the Inspection Section, is assigned to this job.

Also, at the request of the General Electric engineer in charge of the railroad spur construction, inspectors have been assigned to inspect the bridge structural steel and the piling ordered by the subcontractor, J. A. Terteling and Sons.

On October 16, the Purchasing Division was requested to expedite delivery on stainless steel strainer screens ordered for the 105-H Building. Delivery of sufficient strainer screens to meet the emergency was effected in seven days. The original delivery promise on the order was four to six weeks.

Mutual Chemical Company and the General Chemical Company were awarded annual contracts to supply our requirements of Sodium Bichromate and Ferrous Ammonium Sulphate, respectively. The Sodium Bichromate contract is for the period of January 1, 1950 to December 31, 1950, and the Ferrous Ammonium Sulphate contract for the period December 1, 1949 to November 30, 1950. The Stauffer Chemical Company was awarded an order for 50,000 pounds of Aluminum Nitrate. This material will be manufactured in a new pilot plant. The Stauffer Chemical Company is anticipating the construction of a production plant for this material in Tacoma, Washington in order to supply our anticipated future needs.

PERSONNEL

	<u>Total Personnel</u> as of 9-30-49	<u>Total Personnel</u> as of 10-31-49	<u>Net Change</u>
Exempt	22	22	0
Non-Exempt	23	24	Plus 1
TOTALS	45	46	Plus 1

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees attending	45
Minor Injuries	0

STATISTICS

	<u>G</u>	<u>D</u>	<u>Total</u>
Requisitions on hand 10-1-49 (includes 47 assigned to Govt.)	640	24	664
Requisitions assigned during October	2,412	70	2,482
Requisitions placed during October	2,428	71	2,499
Requisitions on hand 10-31-49 (includes 101 assigned to Govt.)	624	23	647

	<u>Number</u>	<u>Value</u>	
HW Orders placed	1,498	\$523,927.62	
HW Alterations placed	107	86,158.09	Cr.
Total	<u>1,605</u>	<u>\$437,769.53</u>	
HWC Orders placed	48	\$ 27,746.92	
HWC Alterations placed	33	19,776.70	Cr.
Total	<u>81</u>	<u>\$ 7,970.22</u>	
AEC Orders placed	177	\$ 50,523.03	
DC Orders placed	5	25,301.81	
	<u>OR</u>	<u>ORC</u>	<u>TOTAL</u>
Government Transfers	8	0	8

Open Orders	
HW Orders	1,364
HWC Orders	129
Govt. Orders	13

Number of new orders requiring inspection during month	19
Number of orders requiring inspection completed during month	27
Number of orders outstanding requiring inspection at month end	36
HW orders expedited (special request)	495
HW orders expedited (routine)	500
HWC orders expedited (routine)	96

PURCHASING AND STORES DIVISIONS
STORES DIVISION
OCTOBER, 1949

GENERAL

During October, Stores inventories were reduced by \$168,006.44. This was accomplished by the deletion of obsolete items and review of stock levels.

1988 purchase requisitions were screened during the month and 1496 items were furnished from plant stocks.

Inventories of Subcontractor held material have been completed on several captions. Catalogues of these items were furnished the individuals responsible for earmarking material required for new construction. Those captions not yet inventoried and catalogued will be complete by approximately December 15, 1949. This is based on the remaining units of work applied to present personnel.

Inventories of surplus materials warehoused at Pasco were progressing satisfactorily at month end and will be completed approximately December 2, 1949. Catalogues of surplus materials (Pasco Warehouses) will all have been issued by approximately February 1, 1950.

Property warehoused at Pasco known to be required for use on the Project was reviewed. A request was made for several warehouses now on the Project to provide storage for the property currently held at Pasco.

Scrap sales have been completed on 20 of 284 tract houses located throughout the Project for a total monetary return of \$3,578.00.

105 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.

PERSOINEL

	<u>Total Personnel</u> as of 9-30-49	<u>Total Personnel</u> as of 10-31-49	<u>Net Change</u>
Exempt	21	24	Plus 3
Non-Exempt	224	235	Plus 11
TOTALS	<u>245</u>	<u>259</u>	Plus 14

SAFETY AND SECURITY

Inventory Control

Safety and Security Meetings Scheduled	1
Number of Employees Attending	30
Minor Injuries	1

PURCHASING AND STORES DIVISIONS
STORES DIVISION

SAFETY AND SECURITY (Cont.)

Receiving, Warehousing & Disbursing

Safety and Security Meetings Scheduled	—6
Number of Employees Attending	69
Minor Injuries	0

Surplus, Salvage & Scrap

Safety and Security Meetings Scheduled	5
Number of Employees Attending	140
Minor Injuries	2

STATISTICS

Inventory Control

Number of items added to Stores stock	363
Number of items deleted from Stores stock	368
Items in Stores stock at month end	47,102
Store orders filled	17,834
Number of requisitions screened this month	1,988
Number of items furnished from plant sources this month	1,496
Inventory valuation (903-all captions, 906 & 912)	\$2,102,719.21
Inventory valuation (Spare parts) at month end	1,524,896.39
Total value inventories at month end, including Spare parts	3,627,615.60
Value of Disbursements, not including cash sale items	158,405.18*
Value of Cash Sales	602.42
Value of materials declared excess	122,853.35
Value of materials returned to Stores Stock for credit	7,771.45

*Includes \$7,124.85 disbursed to Construction and CFFF subcontractors.

Receiving, Warehousing and Disbursing

Receiving Reports issued	3,048
Emergency Store Orders filled	4
Returnable containers on hand at month end	6,581
Returnable containers on hand over six months	1,941
Shipments processed (containers and material)	196

Surplus, Salvage and Scrap

Excess Account #10:10 Balance 9-25-49	\$18,163,874.57
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PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Cont.)

Surplus, Salvage and Scrap (Cont.)

Receipts 9-25-49 to 10-25-49

Lumber	\$34,692.61	
Automotive Equipment	545,906.38	
Machine Tools and Equipment	59,844.65	
Office Furniture, Machines, etc.	14,489.89	
Household Furniture, etc.	4,359.28	
Material and Supplies	452,801.90	
Miscellaneous Equipment	129,067.51	
Material in Process-Not Classified	228,244.97	
	<u>\$1,469,407.19</u>	<u>\$ 1,469,407.19</u>
		<u>19,633,281.76</u>

Disbursements 9-25-49 to 10-25-49

On Project

Lumber	463.42
Automotive Equipment	15,490.27
Machine Tools & Equipment	2,339.82
Office Furniture, Machines, etc.	4,077.17
Household Furniture, etc.	803.97
Material and Supplies	431,771.36
Miscellaneous Equipment	10,693.52
Process Equipment	4,385.00
Material in Process-Not Classified	2,921,680.67

Off Project

Lumber	77,774.76
Automotive Equipment	93,620.19
Machine Tools & Equipment	4,125.49
Office Furniture, Machines, etc.	118.00
Household Furniture, etc.	45.58
Material and Supplies	8,386.04
Miscellaneous Equipment	105.00
	<u>\$3,575,880.26</u>

3,575,880.26

Balance of Account #10:10 as of 10-25-49

\$16,057,401.50

(See attached list for breakdown of materials
in this account by classification)

Total Receipts to Date

\$23,204,710.22

Total Disbursements to Date

\$ 7,147,285.62

Scrap and Salvage Disbursed

Scrap Sales Completed		13
Scrap Sales in Process		11
Scrap Sale Revenue for the Month		\$ 15,169.24
Total Scrap Sale Revenue to Date		<u>\$125,978.43</u>

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 Device Equipment	10.00
4	Ammunition	181.90
5	Flags, Bunting, Pennants, etc.	201.71
7	Fuel	640.23
8	Motor Vehicles: Electric Trucks, Tires, Tubes	378,722.62
10	Outboard Motors and all accessories	4,636.67
11	Pumps and Pump Parts	83,570.71
12	Marine Hardware	2,286.88
13	Engine and Fireroom Fittings	329.09
14	Lubricants	16,966.49
15	Electric Cable and Insulated Wire	19,940.55
16	Radio and Sound Signal Apparatus	13,113.89
17	Electric Apparatus	1,466,850.13
18	Instruments of Precision and Photographic Equipment	30,647.05
19	Blocks	17,379.44
21	Cordage: Hemp, Jute, Oakum, Twine, etc.	4,750.33
22	Wire Rope, Bare Wire, etc.	3,065.21
24	Canvas, Duck, Tentage, etc.	1,590.47
26	Furniture	133,652.02
27	Textiles: Thread, Findings, Floor Coverings	44,726.17
29	Toilet Articles	36.79
30	Bathroom and Toilet Fixtures	10,525.87
31	Non-Electric Lighting Apparatus	1,560.98
32	Fire-Surfacing and Heat Insulating Materials	56,610.09
33	Gaskets, Hose, Packing, Sheet and Strip Rubber, Hose Fittings, Flexible Tubing	40,793.89
34	Belting, Harness, (Leather) etc.	1,726.49
36	Music and Musical Instruments	8.50
37	Special Wearing Apparel and Athletic Equipment	59,376.37
38	Brooms and Brushes	481.52
39	Lumber	1,067,127.56
40	Machine Tools	409,776.42
41	Hand Tools	77,553.77
42	Builders and General Hardware	80,472.30
43	Bolts, Nuts, Rivets, Screws, Washers, etc.	144,984.78
44	Pipe and Non-Flexible Tubes and Tubing	1,066,940.77
45	Pipe Fittings	651,474.55
46	Metal in Bars: Including Flat, Hexagon, etc.	151,949.75
47	Metal in Plates and Sheets	19,748.42
48	Metal Shapes and Structural	21,681.77
51	Acids, Chemicals, etc.	38,171.47

PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10.10 (Cont.)

<u>Class</u>	<u>Description</u>	<u>Monetary Value</u>
52	Paints and Paint Ingredients	\$ 98,558.82
53	Pens, Pencils, Paper, Drafting Room and Printers' Supplies	31,381.20
54	Office Equipment	42,695.86
55	Clothing	25,311.99
57	Laboratory Equipment	34,319.52
58	Fire Fighting Apparatus: Railway Equipment, Prefabricating Buildings, etc.	310,709.76
59	Building Materials: Asphalt, Brick, etc.	132,884.02
60	Boilers and Power Plants	62,992.45
63	Tableware	7,131.07
64	Kitchen Utensils and Apparatus	63,093.21
65	Ovens, Ranges, Stoves, etc.	33,805.06
66	Machinery: Pneumatic Tools, etc.	405,993.97
69	Animal and Hand-Drawn Vehicles	12,338.93
70	Agricultural Implements	2,357.55
72	Leather Boots & Shoes, Leather Clothing, etc.	1,554.96
73	Caps, Hats, Gloves, etc.	32.99
74	Infantry and Landing Force Equipment	796.83
78	Motorized Equipment & Heavy Construction Equipment	6,466,941.75
83	Airplane Accessories, Equipment & Parts	95.33
	Material in Process - Not Classified	2,198,712.74
	Total of Account 10.10 as of October 25, 1949	\$16,057,401.50

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
OCTOBER, 1949

GENERAL

On October 3, 1949 the Purchasing Division requested the Traffic Section to arrange with the carriers to double the number of self-clearing battleship hopper cars which have been regularly assigned to the movement of coal for the Project from Kleenburn, Wyoming to Hanford, Washington. This request was prompted by the fact that, in order to build up the stockpile of coal on the Project, and to take care of increased consumption, it would be necessary to increase daily shipments from the mines from 22 cars per day to 45 cars per day, six days a week, for the next several months.

Our needs for additional self-clearing battleship hopper cars was explained to Mr. L. R. Capron, Vice President (Traffic), Burlington Lines, and he promised that every effort would be made to furnish all necessary cars. To date this promise has been kept and the increased shipments from the mines have been made without interruption.

On September 13, 1949, a proposal was submitted to the rail carriers comprising the North Pacific Coast Freight Bureau requesting them to reduce the rate to 35¢ per cwt. on nitric acid and sulphuric acid, in bulk, in tank cars, from Du Pont, Washington to Hanford, Washington. The proposal received favorable action and the reduced rate became effective October 1, 1949, and will result in a savings of 15¢ per cwt. This will result in annual savings in freight charges of approximately \$26,000 on nitric acid and \$900 on sulphuric acid. Pending publication of the reduced rate on October 1, this Section instructed the Purchasing Division to advise the vendor to withhold shipment of four cars of nitric acid scheduled for delivery to the Project during the latter part of September. This action resulted in additional savings of approximately \$500.

Intercoastal Steamship Lines have secured approval for a general increase in their rates of approximately 4%, to become effective November 1, 1949.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of October amounting to \$3,221.60. This makes a total savings to date of \$1,139,416.54.

PERSONNEL

	<u>Total Personnel</u> as of 9-30-49	<u>Total Personnel</u> as of 10-31-49	<u>Net Change</u>
Exempt	1	1	0
Non-Exempt	8	8	0
TOTALS	9	9	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees attending	7
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS

Savings Report

1. Rate reductions obtained from the carriers:

<u>Commodity</u>	<u>Origin</u>	<u>Savings for October</u>	<u>Savings thru September</u>	<u>Total Savings to date</u>
Acid, Nitric	DuPont, Wash.	\$ 1,854.20		
Gas, Chlorine	Tacoma, Wash.	90.00		
Soda, Caustic	Tacoma, Wash.	855.66		
Sodium Nitrite	Solvay, N.Y.	421.74		
		\$ 3,221.60	\$1,136,194.94	\$1,139,416.54
2. Freight Bill Audit		376.37*	45,752.84	46,129.21**
3. Loss & Damage, & Overcharge Claims		11,625.45	75,307.80	86,933.25
4. Ticket Refund Claims		382.88	6,687.54	7,070.42
5. Household Goods Claims			13,865.38	13,865.38
		\$ 15,606.30	\$1,277,808.50	\$1,293,414.80

*Includes \$23.89 for the AEC

**Includes \$19,384.20 for the AEC

Work Volume Report

Reservations Made	Rail	44
	Air	112
	Hotel	95
Expense Accounts Checked		88
Household Goods and Automobiles	Movements Arranged Inbound	3
	Movements Arranged Outbound	1
	Shipments Traced	2
	Insurance Riders Issued	6
	Insurance Bills Approved	5
	Requests for Claim Billing	6
Ticket Refund Claims	Filed	3
	Collected - Number	6
	Collected - Amount	\$382.88
Freight Claims	Filed	18
	Collected - Number	19
	Collected - Amount	\$11,625.45

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Work Volume Report (Cont.)

Freight Bill Audit Savings	GE	\$352.48	
	AEC	23.89	
Freight Shipments Traced			15
Quotations	Freight Rates		165
	Routes		69
Bills Approved	Air Freight - GE		2
	Air Express - GE		2
	Carloading - GE		67
	AEC		1
	Express - GE		70
	AEC		13
	Rail - GE		555
	AEC		11
	Truck - GE		182
	AEC		55
Carload Shipments	Inbound		702
	Outbound		9
<u>Report of Carloads Received</u>			
Richland Concrete Company	Cement		2
Richland Transportation Company	Coal		6
J. A. Terteling	Steel		1
	Contractor's Outfit		1
J. A. Troxell	Steel		<u>9</u>
			19
General Electric Company	Asphalt		1
	Barrels		1
	Caustic Soda		10
	Caustic Potash		1
	Cement		2
	Cement Slabs		1
	Chemicals		4
	Chlorine		2
	Coal		614
	Containers		1
	Express		3
	File Cabinets		2
	Fire Brick		1

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Report of Carloads Received (Cont.)

General Electric Company		
	Hydrofluoric Acid	1
	Insulation	1
	Lime	4
	Machinery	1
	Merchandise	3
	Methyl Ketone	1
	Nitric Acid	16
	Oxalic Acid	1
	Phosphoric Acid	3
	Shingles	1
	Soda Ash	3
	Sodium Bichromate	2
	Sodium Nitrite	1
	Tank Bodies	1
	Transformers	1
		<u>683</u>
Total Entire Project		702

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

SUMMARY -- OCTOBER, 1949

Open requisitions decreased from 174 at the beginning of the month to 110 at the end of the month. Total plant personnel decreased during the month from 7,519 to 7,512. Turnover rate, including terminations due to lack of work, during October was 1.54%. Turnover rate, exclusive of terminations due to lack of work, was 0.94%. Twenty-six G.E. employees are participating in shorthand and typing courses given by the local school system's Adult Educational Program. A short preliminary application form was adopted during the month.

T. A. Roche, representative of Metropolitan Life Insurance Company, visited Hanford Works October 11 to 14 and assisted in developing the program for the new G.E. Group Health Insurance Plan. The Community Chest Drive for the Hanford Works was completed October 29 with 79.6% of the quota reached. Five employees retired during October, three of which were on optional basis. One employee death occurred during past month. Twenty-seven awards, totaling \$525, were approved by the Suggestion Committee during October.

Distribution of the Supervisor's Handbook on Employee Relations was completed during October with 1,006 Handbooks being issued during the course of 36 meetings held with supervisors by the Training and Program Development Group. On October 18 and 19, 42 meetings on the new G. E. Health Insurance Plan were held by the Training and Program Development staff with 702 supervisors in attendance. A survey was made during the past month relative to conditions of conference rooms in the various areas.

The activities of the Labor Relations and Wage Rates Division during October were concerned primarily with the processing of grievances submitted by bargaining unit personnel and setting up the proper procedure for handling the election of the Guards Union. The International Brotherhood of Teamsters, Chauffers, Warehousemen and Helpers of America had withdrawn their petition for election without prejudice. A special meeting was held with the HANFC's special committee on Group Health Insurance, the Company representatives and a representative of the Metropolitan Life Insurance Company to review the proposed new Group Health Insurance Plan. Two meetings were held with the Council Grievance Committee. A new distribution of minutes for the meetings was put into effect. Meetings were held with supervision to explain the new rules regarding transfers, etc. Reimbursement authorization approvals were received on Reimbursement Authorizations Nos. 73, 71, 60, and 64.

Community Relations was called upon during the month of October to compile a record of all information released concerning the poliomyelitis cases which had occurred in Richland, and to handle the release of information concerning each case as it was reported to us by the Medical Division. This method was adopted as a means of developing to the fullest extent possible the confidence

Employee and Community Relations Division

Summary

of the people living in Richland that the polio situation was not getting out of hand, and that they were being furnished with complete and accurate information as rapidly as possible.

A representative of the New York TIMES visited Richland during the month as a result of efforts by General Electric's West Coast Advertising and Publicity Department representative. Because of the contact with him, established prior to his arrival in town, the way was open to escort him on a complete tour of Richland, and to see to it that he had an opportunity to interview those who could give him the factual information he would require in order to prepare a fair analysis of what he was observing in Richland. In addition to the conferences arranged by Community Relations, the New York TIMES representative also interviewed various merchants in the town to determine whether or not there were opinions among them contrary to those expressed by General Electric Company's various representatives. He gave Community Relations an opportunity to present the G.E.-A.E.C. side of any controversial subject which his discussions with merchants had brought out. In this way, it was possible to present him with the maximum amount of information, and it was felt that the result of his visit should be a fair analysis of the operation of Hanford Works and Richland.

National Fire Prevention Week continued to be a source of considerable effort on the part of Community Relations personnel during the month of October.

Another important aspect of Community Relations work during the month of October was the new G.E. Health Insurance Plan. Various steps in the promotion outline required the creative writing talents of Special Programs, the Nucleonics Department News Bureau, and of Hanford Works NEWS personnel.

A total of 45 news stories were released to the "Local List" of newspapers and radio stations served by the Nucleonics Department News Bureau. The "General List" of radio stations and newspapers received a total of 10 releases and photographs together with captions. Special service was given to the TRI-CITY HERALD on a story concerning the recently contemplated layoff of approximately 50 members of the operation forces of Hanford Works.

Hanford Works was represented by G.E. personnel on five different occasions before public groups during the month. The speakers included the General Manager, the Assistant General Manager, the Head of the Biology Division, and the Community Relations Division Head.

The program designed to assist in acquainting Richland residents with telephone numbers of newly installed phones got under way during the month of October. This program called for publication in each Friday's issue of the WORKS NEWS the list of telephones installed during the previous week. On the last Friday during the month, the WORKS NEWS contained a separate insert which listed, in alphabetical order, all of the names of residents, their addresses, and the numbers assigned to all telephones installed during the month of October.

Employee and Community Relations Division

) Summary

Continuing the effort of acquainting Hanford Works people with the background of the General Electric Company started here when the Company assumed responsibility for operating Hanford Works, the WORKS NEWS published a story in recognition of the 70th anniversary of the discovery of the electric lamp by Thomas Edison. In the October 21 issue the publication entitled "Edison and Electricity" was inserted for the same purpose.

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

OCTOBER, 1949

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

Effective October 3, 1949, an Employment Interviewer and Investigator "B" and a Stenographer-Typist "B" were added to the Procurement Group.

Effective October 10, 1949, a review of the job content of two clerical employees attached to the Investigation and Files Group resulted in their reclassification from General Clerks "D" to General Clerks "C".

Employee Services:

There were no organization changes in this group during the month.

Training and Program Development:

There were no organization changes in this group during the month.

Labor Relations and Wage Rates

Effective October 3, 1949, one Section Supervisor voluntarily terminated to accept employment elsewhere.

Community Relations

There were no organization changes in this Division during the month of October.

Number of Employees on Payroll	<u>October, 1949</u>
Beginning of Month	79
End of Month	<u>80</u>
Net Increase	1

This increase was due to an increased volume of work in the Employee Relations Division.

Employee and Community Relations Division

During the month of October, 34 new requests for inter-divisional transfers were received and reviewed by the Employment Office. As a result of these requests, 10 transfers were effected. All employees who requested consideration for transfers were personally interviewed by representatives of the Employment Office. In addition, 27 transfers were effected for employees who had received notices of termination due to lack of work.

For the first time since September 1, 1946, there was one day during the month of October when there were no unfilled requisitions in the Employment Office for either Stenographers or Typists. By the end of the month, however, there were 5 open requisitions for Stenographers. Information has been received that a total of 95 women are taking shorthand and typing courses offered by the local school system under their Adult Educational Program. Of this number, 26 are General Electric employees. The activities of this school are being followed by a representative of the Employment Office in order that those that are not employed by the Company may be given consideration for possible stenographic positions when the school is completed. In addition, results will be obtained on those employees who are attending this school in order that consideration may be given for placing them in higher rated positions in the event that they qualify.

During the latter part of October a short application form was adopted by the Employment Office for use in conducting preliminary interviews. This form, it is believed, will conserve the applicants time and also assist in expediting applicants through the Employment Office. It will be of particular advantage during rush periods of employment.

During the past month a procedure was adopted by the Employment Office whereby applicants who are placed in process for openings and who reside in the vicinity of Richland will not be required to take a pre-employment medical examination until just prior to being added to the payroll. This procedure will eliminate giving physical examinations to those applicants who are found to be unqualified, as well as to those who later refuse employment or to those to whom final offers of employment cannot be made. Based on an estimate for the past three months, this procedure, if in effect at that time, would have saved approximately \$1,400. An estimated annual saving would depend entirely upon the number of people hired and the number of those people who would be available from the local labor pool.

On October 28, 1949, a meeting was held with the Interviewers, together with several other representatives of Employee Relations Division, the latter serving in an advisory capacity, for the purpose of giving the Interviewers an opportunity to suggest ways and means of improving the Employee Procurement Program, and also to furnish to the Interviewers available information on the over-all Procurement Program from a long-range view point. This conference was received with considerable enthusiasm by the Interviewers, and it is planned to hold similar meetings in the near future.

Employee and Community Relations Division

Employee Services:

A tabulation of the Rating Sheets for nonexempt employees was completed during the month of October and summary reports are being prepared for each Division in order that they can compare their ratings with the over-all plant summary of ratings.

Mr. T. A. Roche, of the Metropolitan Life Insurance Company, New York City, visited the Hanford Works from October 11 to 14 for the purpose of assisting in the programs developed for employees in connection with the new G.E. Group Health Insurance Plan. All individuals involved in this Program profited considerably from Mr. Roche's help. Representatives of the Employee Services Group assisted the Training Group in explaining the benefits of the new Health Insurance Plan to supervisors and employees.

The Community Chest Drive was completed on October 29 for the Hanford Works, and this drive resulted in approximately 79.6% of the \$25,000 quota being reached at the Hanford Works.

Various employees were contacted during the month of October for reasons as indicated below:

Employees visited at home due to illness	2
Employees visited at Kadlec Hospital	84
Employees on leave of absence at home	4
Pension checks delivered	5
Weekly checks delivered to employees confined to Kadlec Hospital	18
Weekly checks delivered to employees confined at home	4

The following trips were made to the areas by representatives of the Employee Services Group for the purposes indicated:

Union notices posted in all areas	4
Special posting of suggestion system posters in all areas	1
Posting of Group Health Insurance posters in all areas	2
Routine visits with area supervisors	3
Area Council meetings attended	3

During October, renewal of deferments were requested of the local Selective Service Board No. 25 in Pasco, Washington, for the following employees, all of whom have technical backgrounds:

John Robert Young
Clayton Fowler Callis
Carl Phillip Sutter

Employee and Community Relations Division

The following employees retired during October:

- Casper H. Cain, "S" Division, (Optional)
- John H. Hill, Plant Security and Services
- Walter M. Scott, Purchasing and Stores
- Paul P. Springor, Plant Security and Services (Optional)
- Harry L. Thurmond, Plant Security and Services (Optional)

All of the above-named employees were interviewed prior to their retirement and were fully informed as to the benefits each would receive under the Pension Plan.

One employee death occurred during the month; namely, Con-struction Division. The employee's family was contacted in this instance and information relative to insurance benefits, social security forms and pension refund was furnished at that time. In addition, a cash advance was arranged for to assist her in meeting certain immediate expenses.

During the past month 4 employees in lack of work status requested that their separation be changed to resignation in order that their pension contributions might be returned to them.

Some time was spent during the past month in reviewing the Manual of Standard Practices and Procedures used by the previous prime contractor at this Works, in order that the present operating Instructions Letters might be brought up to date.

In compliance with the policy that employees off due to pregnancy should return to work within eight weeks after confinement in order to protect their continuity of service, a number of such employees were contacted by letter during the past month to determine if they intended to return since the eight weeks had passed.

Suggestion System

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

	<u>Sept., 1949</u>	<u>Oct., 1949</u>	<u>Total Since July 15, 1947</u>
Suggestions Received	92	130	3,947
Investigation reports completed	71	43	3,675
Awards granted by Suggestion Committee	11	27	428
Cash awards	\$535	\$525	\$5,845

Employee and Community Relations Division

The savings during the month of October as a result of the suggestions submitted were estimated at \$17,628.10. During the month of October a special poster prepared by the Community Relations Division was placed on all suggestion boxes. The poster was exhibited for the purpose of informing all employees of the desire for suggestions relative to conservation of manpower during October. A special booklet entitled "What Supervisors Should Know About the Suggestion System" was transmitted to all supervisors at the Hanford Works during October. Another booklet entitled "Your Ideas Are Worth Money" was distributed to all employees.

The October 21 issue of the WORKS NEWS featured an entire page of pictures of the personal life of N. L. Merkley who, during the month of September, received the highest award in the history of the Suggestion System at the Hanford Works.

Insurance and Compensation

Public Liability

in the amount of \$42,912, Claim No. _____, seeking damages -- The plaintiffs' attorney in this case, which arose as a result of the plaintiffs' being injured when their car went into a road excavation on Stevens Drive north of Richland, made an offer of settlement in the amount of \$4,000. The defendant, who is being represented by the Travelers Insurance Company, since this company was a CFFF subcontractor of the General Electric Company, will make a counter offer up to \$3,000. On the possibility that this counter offer will not be accepted, the Travelers Insurance attorney, Mr. John D. MacGillivray, visited the Hanford Works on October 26 and 27 for the purpose of interviewing witnesses involved in this case. In the event a settlement is not made, this case will be tried in Spokane on November 14, 1949.

in this case was employed at the _____ by the Post Office Department, and on February 14, 1949, she allegedly sustained a fracture of the right foot as a result of slipping in a pool of oil in the lobby of the Post Office. On October 19, the Travelers Insurance Company recommended this claim be settled for \$1,750. However, since there is some question as to the liability of the Company, since this plaintiff was an employee of the Post Office Department, Travelers have been requested to furnish additional information indicating as to whether this suit is proper.

-- This action, which arose as a result of damage to an airplane rented from the plaintiff company by the Richland CAP when the plane struck a government truck operated by an employee of the J. A. Terteling Company, was tried on October 24, and the jury rendered a judgment against all defendants in the amount of \$3,500. The General Electric Company was interested in this action due to the fact that insurance coverage was furnished the J. A. Terteling Company as a CFFF subcontractor.

Employee and Community Relations Division

Compensation

As a result of a recent agreement between the Company and the State Department of Labor and Industries, all cases relating to head, eyes, back and hernae, as well as cases where treatment for minor injuries extends beyond two weeks, are being reported to the Insurance Section of the State Department of Labor and Industries. This has resulted in an increase of from 66 claims being reported in September to a total of 109 being reported in October.

-- The claimant in this case, widow of _____, former employee of _____ who died on November 12, 1947, presented her testimony at a hearing held in Yakima on October 4, 1949. The Department entered an Order allowing the claim, which entitled Mrs. _____ to a pension. The Company has appealed this Order on the basis that there is no relationship between the employee's death and his occupation since the cause of death was not definitely established. The claimant's testimony indicated that certain statements were made to Mrs. _____ at the time of the employee's death by certain doctors. A continuance was requested by the Company in order that these doctors might be permitted to testify.

-- The claimant, a former employee of _____ the _____ appealed a Decision of the Board of Industrial Insurance Appeals which disallowed the claim on the basis that the breast tumor which developed was unrelated to the injury. A Hearing was held on October 4, 1949, in Yakima for the purpose of presenting the claimant's testimony. The Company asked for a continuance in order to present the testimony of the members of the Medical Division who handled this case.

-- A Hearing was held in Yakima, Washington, on October 4, 1949, in order that the claimant in this case might present his testimony with respect to his claim of a job incurred hernia which was rejected by the Department of Labor and Industries. A representative of the Insurance Section, as well as the Law Division, attended this Hearing.

-- On October 17, 1949, the Department of Labor and Industries rejected this claim on the basis that there was no connection with the claimants present physical condition and his occupation at Hanford Works.

-- In March, 1949, judgement was entered in the Superior Court by stipulation between the Attorney General and Counsel for _____ awarding additional permanent partial disability plus time loss in the amount of \$2,246.65, based on the allegation by the claimant of total disability in the amount of 90%. For approximately one year prior to the date of the trial, _____ was employed by the _____ at the Hanford Works as a structural iron worker. Inasmuch as it appeared that an individual 90% disabled could not perform the normal duties of a structural iron worker, the claim was referred to the Federal Bureau of Investigation who, in turn, has advised that

Employee and Community Relations Division

this matter is being turned over to the U. S. Attorney in Yakima for possible criminal action against _____ for fraud.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to 36 insurance and investigation agencies during the month of October.

Training and Program Development:

During the week of October 17-21 the 40-Hour Basic Supervisor Training Program was presented again on a plant-wide basis with a total of 31 supervisors in attendance.

At the end of October the "Let's Talk It Over" Program had progressed down through the organization to Superintendents and Division Heads.

During the last week of September and the first three weeks of October, 36 meetings were held by the Training and Program Development staff for the purpose of explaining the use of and distributing to supervisors the Employee Relations Handbook. A total of 1,006 handbooks have been distributed to date.

Considerable time was devoted by the Training and Program Development staff in preparing for the presentation of the G.E. Group Health Insurance Plan to the supervisors and employees at the Hanford Works. The Employee Services Group together with Mr. T. A. Roche of the Metropolitan Life Insurance Company, assisted considerably in developing these programs. On October 18 and 19, 42 meetings were conducted throughout the various areas, at which time this Health Insurance Plan was presented to all supervisors. A total of 702 supervisors attended these meetings. Plan booklets were prepared and distributed prior to these meetings in order that the supervisors would have information in writing concerning this Health Insurance Plan and be prepared to present their questions at the meetings.

During October, a total of 62 new employees and 40 re-engaged employees were given orientation. Of this number 66% elected to participate in the Group Life Insurance Plan and 82% elected to participate in the Group Disability Insurance Plan.

During October, a survey of all the conference rooms was made by the Training and Program Development Group staff members for the purpose of determining what repairs and improvements could be made to these rooms. A report is presently being prepared which will set forth the recommendations with respect to these conference rooms.

On October 14, two films entitled "In Balance" and "Boundary Lines" were reviewed by the Training and Program Development Group to determine whether they would be of interest to supervisors.

Employee and Community Relations Division

STATISTICS

<u>Number of Employees on Rolls</u>	<u>9-30-49</u>	<u>10-31-49</u>
Exempt	1,607	1,596
Nonexempt	<u>5,912</u>	<u>5,916</u>
Totals	7,519	7,512

ADDITIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
New Hires	4	50	54
Re-engaged	0	39	30
Re-activations	0	15	15
Transfers (from other plants)	<u>1</u>	<u>0</u>	<u>1</u>
Actual Additions	5	104	109
Payroll Exchanges	<u>6*</u>	<u>10**</u>	<u>16</u>
Gross Additions	11	114	125

TERMINATIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
Actual Terminations	12	80	92
Removals from Roll	0	24	24
Payroll Exchanges	<u>10***</u>	<u>6****</u>	<u>16</u>
Gross Terminations	22	110	132

Approximately 54% of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Personal Reasons, (b) Another Job, (c) Other Reasons.

- *Transferred from Weekly Salary Roll
- **Transferred from Monthly Salary Roll
- ***Transferred to Weekly Salary Roll
- ****Transferred to Monthly Salary Roll

Employee and Community Relations Division

GENERAL

	<u>Sept., 1949</u>	<u>Oct., 1949</u>
Applicants interviewed	1,576	1,212
Photographs processed	5,159	3,831
Fingerprint impressions taken (in duplicate)	420	294
Procurement letters written	503	600

ABSENTEEISM STATISTICS
(Weekly Salary Roll)*

Male	1.54%	2.08%
Female	3.31%	3.45%
Total Plant Average	1.96%	2.38%

INVESTIGATION STATISTICS

Cases pending at beginning of month	1,143	1,106
Cases received during the month	261	217
Cases closed	298	287
Cases pending at month end	1,106	1,036
Cases found satisfactory for employment	196	108
Cases found unsatisfactory for employment	1	3
Cases closed before investigation completed	19	5
Special investigations conducted	2	3

	<u>Sept., 1949</u>	<u>Oct., 1949</u>	<u>Total Since Sept. 1, 1946</u>
Claims received and reported to the Department of Labor and Industries	66	109	3,130
Claims received and reported to the Travelers Insurance Company	17	7	372

*Statistics furnished by Weekly Payroll Division

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 early part of the month in making the necessary arrangements for conducting the NLRB election to determine whether or not a Guards Union would be established at Hanford Works.

Guards Union:

Notices of Election were posted in prominent locations throughout all areas on October 4. A printed Employee News Letter was sent to all patrolmen, informing them of the election and urging them to vote.

The NLRB election officers met with the Company and the Union on October 10 in a pre-election conference. The election was held on October 11 and 12 under the supervision of the NLRB, Company and Union observers. The tally of votes made by the NLRB representative revealed that 168 votes were cast in favor of the union and 355 votes were cast against it, a total of 523 votes cast out of a possible 682, or 77% turn-out.

On October 13, a letter was sent to all supervisors by the Division Manager, informing them of the election results and urging them to encourage use of the grievance procedure by non-unit employees as well as unit employees.

Miscellaneous Union Activity:

On October 12, 1949, notice was received from the NLRB that the Int'l. Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America had withdrawn their petition for election without prejudice.

On October 13, 1949, the HAMTC's special committee on Group Health Insurance met with Company representatives and the special representative of the Metropolitan Life Insurance Company to review the proposed new Group Accident and Health Insurance Plan. The HAMTC president, G. A. Foster, submitted a letter for publication in the Works NEWS endorsing the new plan.

Grievance Statistics:

Seventeen grievance reports were received during the month, bringing the total received since the bargaining unit was established to 131:

Manufacturing Electrical	1
Manufacturing Instrument	2
Manufacturing Maintenance	2
Manufacturing Power	3
Manufacturing "S"	2

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Manufacturing Transportation	1
Manufacturing "P"	2
Plant Security & Services	1
Village Maintenance	2
Village Power	<u>1</u>
Total	17

Employee grievance reports were regarding the following subjects:

Jurisdictional	4
Health, Sanitation & Safety	1
Seniority	5
Information to Council & Employees	1
Wage Rate, Ability & Progress	<u>6</u>
Total	17

The status of all grievances received to date is as follows:

Settled satisfactorily, Step I	36
Not settled satisfactorily, Step I	95

Of the 95 grievances not settled at the Step I level, 46 have been settled satisfactorily at the Step II level. Only 6% of the total grievances received to date have been submitted by employees outside the bargaining unit.

During the month the method of recording grievances was changed to comply with the articles contained in the Agreement with the HAMTC.

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. Minutes of these meetings were sent to each supervisor, together with a bulletin informing them of the new plan to periodically distribute information regarding the settlement of grievances at the Step II level.

In the past the Labor Relations and Wage Rates Division has endeavored to keep each supervisor currently advised on the status of each grievance with which he was directly concerned. However, it has since become apparent that information regarding the disposition of grievances may be of interest and help to all supervisors. In the future we will periodically distribute information to all supervisors concerning disposition of grievances which have come to the Step II level for settlement. The

Employee and Community Relations Division

material being distributed is intended to keep all supervisors currently informed regarding grievance problems and to serve as a guide in the settlement of grievances at the Step I level.

October 6, 1949:

Employees in the ironworkers craft objected to the fabrication and erection of a cyclone type fence by employees in the pipefitters craft. The Company proposed a settlement based on a letter received from the HAMTC which stated that the ironworkers craft would erect and fabricate all metal fence posts except those made of threaded or jointed pipe. The Council accepted the Company's proposed settlement with the assurance that a sincere attempt will be made to properly recognize all craft boundaries, consistent with good operating procedures.

An ironworkers steward claimed that rigging work should in all cases be performed by riggers. The Company explained that a survey would be conducted with the intention of determining the extent of rigging work normally required in each area, and what arrangements might be necessary to have riggers more readily available in each area. The Council accepted the Company's explanation as a settlement.

October 20, 1949:

The carpenters' grievance concerning the use of floor sanding machines by floor servicemen, which had been discussed previously in other meetings, was not settled. A letter received from H. R. Chubb, Int'l. Union, claimed jurisdiction over the cleaning and treatment of floors. The grievance became a jurisdictional dispute between the carpenters and the floor servicemen and will be treated as such by the Council.

An employee claimed he had been discriminated against, inasmuch as men with less seniority had been promoted and he had not. The grievance was settled with the understanding that the employee was not necessarily frozen on his present job, and that his demonstrated ability would determine the future action of the Company.

A grievance resulted from a supervisor relieving an operator for about twenty minutes on one occasion. The settlement stated that under no circumstances would a supervisor in that division routinely or frequently do an operator's work. The responsibility for deciding when to do so lies with the supervisor concerned. However, the justification for doing so must be established to the satisfaction of higher supervision.

Wage Rates

During the month of October the Wage Rate Section completed the job of furnishing the Payroll Section with information on changes of individual rates and classifications for employees resulting from the change from

Employee and Community Relations Division

the old to the new rate schedules. The final phase involved rates for those employees on the rolls on April 11, 1949, and subsequently removed from the rolls on or before May 31, 1949 with no break in service. These employees are to receive any pay adjustment due them at the time they are reactivated without a break in service. This information was also furnished to the divisions concerned.

A series of meetings with Management and the Atomic Energy Commission was held relative to the rate to be paid firemen in the Community Division under the proposed two-platoon system. In connection with this a community rate survey of the rates paid firemen in Northwest cities and industries was completed. This survey included information on hours of work, vacation and holiday allowances and other fringe benefits.

An average of approximately forty daily inquiries from supervisors were handled relative to rates, progression time, classifications, and retroactive pay for employees.

A survey to obtain information on the money spread between firemen, guards, policemen, etc., and their first line of supervision was made.

Meetings were held with supervision to explain the new rules regarding transfers, etc.

Rate discrepancies brought to light by the Payroll Section in computing the retroactive pay due individuals for the period April 11, 1949 to August 15, 1949, have been adjusted. Each of these discrepancies had to be investigated individually and necessary action initiated to make the proper adjustment.

Plans for the annual community survey were completed involving the revision of the questionnaire and plotting charts to be distributed to participating concerns.

Comparison of construction rates vs. General Electric Company rates for comparable jobs were studied and charts were plotted for management use.

Experience and progression time charts were prepared for the Design classifications and the first in a series of meetings with divisions employing Designers was held. The purpose of these meetings is to obtain consistent thinking insofar as the type of work expected within each classification and the rates to be paid Designers under the merit system.

Data was accumulated to determine monetary loss suffered by some employees as a result of the institution of the new non-unit progression schedule. This information will be analyzed to determine if affected employees should be reimbursed.

The following reimbursement authorization was submitted October 3, 1949:

Employee and Community Relations Division

Approval was granted on October 10, 1949, on Reimbursement Authorization No. 73 to change the effective dates to April 11, 1949 on the following job classifications:

Packer
Seamstress-Finisher
Oiler
Laundry Truck Swamper
Industrial Truck Operator - Heavy

These classifications were previously approved with an effective date of August 15, 1949.

Reimbursement Authorization No. 71 was issued on October 10, 1949, giving approval to a request made concerning a change in a transfer rule for employees within the bargaining unit. This approval was effective retroactive to August 15, 1949. Prior to the approval of this reimbursement request, an employee transferring between seniority groups was transferred at the starting rate of the new classification, or one step below the job rate if fully experienced and qualified. Under Authorization No. 71 an employee transferring between seniority groups may in addition to the above two conditions, be transferred at his rate of payroll record if he previously performed the specific job to which he is being transferred.

Approval was received on Reimbursement Authorization No. 60 for two additional job classifications to be added to the non-unit group. Technical Worker, grade 14, was approved effective retroactively to June 1, 1949; and Orderly, grade 8, was approved effective retroactively to July 15, 1949.

Reimbursement Authorization No. 64 granted approval of our request for new rate schedules and additional classifications to non-unit employees. This reimbursement also authorized extension to all weekly roll employees the benefits resulting from the Agreement between the General Electric Company and the Hanford Atomic Metal Trades Council. This approval was effective retroactive to April 11, 1949.

STATISTICS

Transfers from Weekly to Monthly Payroll	5
Transfers Approved	308
Job Reclassifications Approved	250
Automatic Increases	439
Merit Increases	7

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 releases are being sent out for immediate release. In such cases the date on which the release was sent from this office is indicated below).

- 10/1 Photographs showing new equipment at Kadlec Hospital to be used for the treatment of infantile paralysis were sent to newspapers on the "Local List."
- 10/1 An informative release announced Richland's tenth polio case this year and explained the symptoms of polio.
- 10/3 It was pointed out that the discharge of fire arms or practicing archery on the Richland Junior Riders Club area is prohibited.
- 10/3 Two photographs showing stacks of the booklet, "Motor Manners," to be distributed to everyone in Richland were distributed.
- 10/3 Five different views of the work that goes into the installation of the dial telephone system were sent with cut lines to papers on the local list.
- 10/4 Photographs of a group of Hanford Works personnel presenting a fire prevention skit to the students of Lewis and Clark Grade School were sent to local media.
- 10/4 A list of 10 rules for the prevention of fire was distributed to local newspapers.
- 10/4 More information about the symptoms and treatment of polio was sent out.
- 10/4 The proper use of a dial telephone was explained in an informative release.
- 10/4 It was announced that the telephone number of the Richland Fire Department, number 100, would not be changed after the cut-in of the dial telephone exchange.
- 10/5 It was announced that 300 tract houses and other pre-project buildings will be offered for sale.
- 10/5 Copies of a proclamation announcing Richland's observance of National Fire Prevention Week signed by the Mayor and Community Manager of Richland were sent to the local media.
- 10/5 A complete description of all fire prevention activities in Richland during Fire Prevention Week was sent to local media.

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- 10/6 A new location of medical and dental services for North Richland residents was distributed.
- 10/6 Photographs showing a fire prevention display located in the Dawson-Richards store window were sent to local media.
- 10/6 It was announced that free diabetes tests would be available to all Richland and North Richland residents during the coming week.
- 10/6 A clothing drive conducted by a group of Richland churches in conjunction with Fire Prevention Week was explained.
- 10/6 Announcement that the Head of Community Patrol Traffic Section would attend the state Governor's Safety Conference at Olympia was sent to KPKW and KWIE only.
- 10/7 The appointment of E. Hilgeman as Assistant Superintendent of the Instrument Division was announced.
- 10/7 The appointment of M. F. Rice as Assistant Superintendent of the Transportation Division was released.
- 10/7 The coming of the new G.E. Group Health Insurance Plan for G.E. employees at Hanford Works was announced.
- 10/10 Two photographs of Richland polio victims receiving treatment at Kadlec Hospital were sent to local papers.
- 10/11 A coming power outage was announced.
- 10/11 An informative release stated that Richland's Community Patrol and the F.B.I. would cooperate to provide local patrolmen with police training.
- 10/12 Photographs showing fire trucks leaving fire station No. 1 were sent to local media in order to publicize Fire Prevention Week.
- 10/13 It was announced that the Richland dial tone will be adjusted so that it has a lower pitch and less intensity.
- 10/13 New rents and charges for utilities and services for all Richland clubs and organizations were announced.
- 10/13 It was stated that government-owned land near Richland can be used for pasture only after a permit is obtained from Community Activities Division.
- 10/14 The Superintendent of the Electrical Division stated that an installation charge will be made for all telephones placed in service in Richland after October 17.
- 10/14 It was announced that fire prevention and fighting equipment was being demonstrated and displayed to youth groups at Richland's fire station No. 1.

Employee and Community Relations Division

- 10/17 Two power outages scheduled for the coming week were announced.
- 10/18 Photographs of a hardware store now under construction in Richland's uptown shopping center were sent to the VILLAGER and Tri-City HERALD.
- 10/18 It was announced that Richland's new hardware store will be opened early in December.
- 10/18 Two representatives of Richland Patrol will attend a juvenile crime school conducted by the F.B.I. in Tacoma, according to this informative release.
- 10/20 It was announced that three safety men from Hanford Works would attend the Annual National Safety Congress in Chicago.
- 10/20 The Richland Health Officer revealed that more than 900 Richland residents received free tests for diabetes during the past week.
- 10/23 Richland's Community Manager announced that effective December 1 Richland telephone rates will be increased to bring them in line with telephone rates in towns in the Northwest where comparable telephone service is available.
- 10/25 Photographs showing damage to a ranch type house in Richland caused by hot ashes in a cardboard box that were placed beside the house were distributed.
- 10/25 The danger of improper handling of hot ashes was stressed in a news story.
- 10/25 A photo showing construction of the levee near Haines Avenue in Richland was sent to local media.
- 10/26 A photograph depicting the distribution of the booklet "Motor Manners" to the members of a high school driving class was distributed.
- 10/27 A series of short dramatic broadcasts designed to promote safety in the tri-city area to be presented over radio station KPKW was announced.
- 10/27 Photographs of the new parking compound at Kadlec Hospital were sent to local media.
- 10/27 Photographs of H. Leith Loder, who will present the series of safety broadcasts over KPKW were distributed.

Tri-City HERALD only--10/18--In response to a request the Manager of the Employee and Community Relations Division stated that during the past two weeks approximately 50 G.E. employees received notices of lay-off for lack of work.

Employee and Community Relations Division

Film Service

During October, four films were obtained for the Triple-Teen group in Richland. Three G-E films were supplied to the Visual Aids Department at Columbia High School for showing during October. One other film was supplied to an organization in Richland.

"Public Information" - General

Informative newspaper releases were sent to 67 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:

- 10/4 It was announced that invitations to bid on the contract for heat duct insulation of pre-cut houses in Richland would be issued on or about October 7.
- 10/5 It was announced that Richland was the first town in the United States where the booklet "Motor Manners" had been distributed to every home.
- 10/7 The appointment of three division managers to head new divisions within the Manufacturing Divisions were announced.
- 10/7 The representative of the National Safety Council announced here that Richland is the safest town of its size from a traffic safety standpoint. This information plus a review of the accomplishments which gained this recognition for Richland were sent to local media.
- 10/8 A photograph of the Nucleonics Department General Manager and the Nucleonics Department Assistant General Manager greeting the G.E. Vice President in charge of Engineering Policy upon his arrival in Richland was sent to 8 daily newspapers in the Northwest.
- 10/12 Six photographs of the National Safety Council representative who named Richland as one of the safest towns in the nation were sent to daily newspapers in the Northwest.
- 10/13 A photograph of Community Chest checks being presented to the local drive chairman by G.E. and representatives of four sub-contractors was mailed to 11 daily papers in the Northwest. The cut lines pointed out that G.E.'s contribution to the Community Chest was \$2,000.
- 10/18 It was announced that Richland will have a new hardware store in its uptown shopping district.
- 10/19 Karl McEachron, G.E.'s famous "lightning hunter" was scheduled to address the Richland section of A.I.E.E. on October 26 according to this general release.

Employee and Community Relations Division

10/25 The Tacoma Asbestos Company was announced as the apparent low bidder on the contract to insulate heat ducts in pre-cut houses in Richland.

10/30 Copies of two photographs showing current construction of the Northern Pacific-Union Pacific railroad spur were sent to 14 daily newspapers. This railroad connection will bring freight to Richland and Hanford Works.

On October 28, the member of the Nucleonics Department General Manager's staff in charge of Recruiting and Placement of Technical Personnel spoke at Newberg, Oregon, to the Tri-county Workshop Conference for Teachers. He spoke about the effect that atomic age should have on the teaching of high school subjects. The News Bureau prepared a news release based on the speech which was mailed to the Portland OREGONIAN. Copies of the release were also sent to Newberg for distribution to newsmen there.

On October 4, the Head of the Biology Division of the Health Instrument Divisions addressed a group of farmers at the Annual Feeder's Day at Washington State College campus on the subject, "The Effects of Atomic Energy on Agriculture." The News Bureau secured clearance on the speech, checked the news release prepared by the college news bureau, and had a slide prepared for showing in Pullman.

On the same date, the Community Relations Division Head spoke to the Sunnyside Chamber of Commerce on the subject "Richland and Hanford Works." A news release prepared for use by the Department Assistant General Manager, who spoke earlier on a similar topic at Ellensburg, Wash., was distributed to press representatives at Sunnyside.

An H.I. Biology Division Engineer, who is in charge of the Hanford Works experimental farm, spoke to farmers gathered in John Dam Park in Richland on October 8, "Hello Neighbor Day," about the safeguards taken at Hanford Works to protect nearby farmers from possible radiation hazards. Clearance for the speech was obtained by the News Bureau. The News Bureau also handled the details for making arrangements for the speech to be given. A display entitled "G.E. Protects Its Neighbors from Radiation" was set up in the park by the News Bureau. It consisted of 12 photographs showing scenes at the experimental farm, testing produce from the farm for traces of radiation, and showing livestock that are kept on the project for experimental purposes. The display, complete with cut lines and other explanatory material, is now in the display case in front of the Municipal Building.

On October 13, the Department General Manager spoke to the Richland Junior Chamber of Commerce on the subject "If I Were a Jaycee." Notes on the speech were taken for the Tri-City HERALD. The VILLAGER had a representative at the meeting.

The General News Bureau in Schenectady, N.Y., requested that photographs of Hanford Works trainees be sent to them. The photographs will be used in a feature story about G.E. trainees in the G.E. Educational News Service magazine. Three photographs were sent to the General News Bureau with outlines.

Employee and Community Relations Division

The News Bureau continued to spend considerable time during October to publicize National Fire Prevention Week. In addition to the informative news releases prepared for local media, the News Bureau made arrangements with KPKW and KWIE for spot announcements during Fire Prevention Week and the preceding week. Arrangements were made for KWIE to transcribe and broadcast a speech given at the Richland Kiwanis Club meeting by a member of the National Fire Underwriter's Board. The radio group at Columbia High School was contacted and they agreed to produce and transcribe a play with a fire prevention theme. This was broadcast over KPKW. The News Bureau scheduled several dozen photographs that will be mounted in a scrap book for entry in a national fire prevention contest. Many of the photos were planned by the News Bureau and some were distributed to local newspapers. A proclamation endorsing National Fire Prevention Week and signed by Richland's Community Manager and Mayor was obtained.

Writing and distributing informative releases and photographs announcing and explaining the change-over to a dial telephone exchange, the increase in telephone rental rates, and charges for the installation of telephones continued to be an important project of the News Bureau during October.

"Employee Information" - Special Programs

A major portion of the plan for promoting the new G.E. Group Health Insurance Plan was put into effect during October. A "Teaser" type poster which announced that the new Plan would be "available soon" was posted throughout the plant on October 3. A second poster, which urged employees to sign up for the new Plan promptly, was placed throughout the plant on October 31, the date on which employees were first contacted by supervisors to enroll in the Plan. Production of both posters was handled through Special Programs. They were designed by the Community Relations Division commercial artist and printed in the 700 Area Printing Section.

The news story announcing details of the new Plan in brief was prepared by Special Programs and appeared in the Hanford Works NEWS on October 7. The story was rewritten and released to local newspapers through the News Bureau.

Production of the cover of the presentation plan book was accomplished through Special Programs. This book included full details of the new Plan and was distributed to all supervisors to assist them in enrolling those whom they supervise.

Succeeding issues of the WORKS NEWS during October carried stories which enlarged upon the details of the new Plan, and, in addition, an editorial cartoon appeared in the October 14 issue, and an editorial was printed in the October 21 issue.

Copies of the new G.E. Group Health Insurance Plan booklet were mailed to all employees' homes on October 24, and advance copies were mailed to Supervisors at plant addresses. The booklets were accompanied by a letter from Mr. G. R. Prout which urged participation in the new Plan.

Employee and Community Relations Division

Arrangements for printing of the booklet and preparation of the letter was accomplished through Special Programs. Arrangements for the printing of the booklet included rewriting a booklet used elsewhere in the Company to make it apply to Hanford Works, obtaining artwork from the New York Employee Relations Office, obtaining printing bids through Purchasing Division and correcting final page proofs. Distribution of the booklets was arranged by Special Programs through the plant mail room.

An advertising type, self-mailing promotion brochure was sent to all employees' homes on October 31. It urged employees to participate in the Plan, presented a comparison of the benefits provided under both the present Plan and the proposed new Plan, and explained that unless 75 per cent enrollment is reached promptly the present Plan will remain in effect. This mailing piece was designed by the Community Relations Division commercial artist and printed in the 700 Area Printing Section. Production and writing of the mailing piece was accomplished by Special Programs.

In addition, the plan for promoting the new health insurance Plan included plant-wide meetings for both non-exempt employees and supervisors held by the Training and Program Development section to explain the Plan in detail. Throughout the promotion, which will be concluded during November, it was stressed that the increased benefits and coverage provided under the new Plan were requested by many employees, and that all of the Company's employee benefit plans are studied at regular intervals to make sure that they meet the needs for which they were originally designed.

Publicity prepared by Special Programs on National Diabetes Week, October 9-15, and the free tests for diabetes which were offered during this week to all Richland and North Richland residents, included news releases and radio spot announcements. A news story announcing results of the free tests was also prepared and released through the News Bureau.

Letters of commendation from Mr. G. R. Prout, which were sent to four Hanford Works employees who were instrumental in saving the life of a G.E. lineman after he suffered severe electrical shock and burns, were prepared by Special Programs. Arrangements were also made for appropriate recognition in the WORKS NEWS.

Copies of the September-October issue of "Adventures Ahead", the first issue received by Hanford Works teen-age subscribers, were sent to community thought leaders. The accompanying letter explained that the first issue of the magazine was being sent to acquaint thought leaders with the type of information contained in the magazine. It was prepared through Special Programs. Payment for the September-October and the November-December issues of "Adventures Ahead" was arranged through the Accounting Division during October.

Final page proofs of "You and General Electric at Hanford Works" were received from the printer, Craftsman Press of Seattle. Corrected proofs were returned to the printer and delivery of the employee handbook is expected during November.

Revisions of the Nucleonics Department's portion of the G.E. Organization Directory was accomplished during October by Special Programs. In making

Employee and Community Relations Division

the revision, the Nucleonics Department section was expanded from one page to approximately four pages. Names of many additional personnel were included to provide a more complete description of the Nucleonics Department organization. It also was felt that the inclusion of additional Nucleonics Department personnel in the directory will have a beneficial affect on exempt employees' morale.

Assistance was rendered by Special Programs to the Suggestion Committee in promoting increased participation in the Suggestion System as part of the Wilson 50th Anniversary celebration. Tip-ons for two Suggestion System booklets, one of which was distributed to Supervisors and the other to all non-exempt employees, were prepared by Special Programs. WORKS NEWS publicity on the distribution of the booklets to employees was also arranged through Special Programs. A Suggestion System poster was also prepared for insertion in Suggestion System boxes and for posting elsewhere throughout the plant during October. The poster was designed by the commercial artist and printed in the plant print shop. It is the second of four such posters.

In line with Special Programs handling of publicity on community safety, several news stories and pictures were arranged by Special Programs and released to newspapers through the News Bureau. These concerned: the distribution of Emily Post's "Motor Manners" to Richland residents and to Columbia High School students; a Richland schoolboy patrol broadcast; Hanford Works safety officials attending the National Safety Congress in Chicago; no hunting in the area leased by the Junior Riders' Club; and a series of forthcoming radio safety broadcasts.

A record of information concerning infantile-paralysis which appeared in local newspapers since the first case of polio was reported this year in Richland was compiled by Special Programs. The information includes stories released specifically to inform residents of precautions to take to help guard against the disease. In addition, one story on a polio case which was credited to Yakima, and two pictures with captions depicting Kadlec Hospital's excellent facilities for diagnosing and treating polio were released through the News Bureau.

Publicity which was started in September to inform residents of the closing of the North Richland hospital and the opening of new medical and dental offices in North Richland was continued with a news release just prior to the closing date. Publicity was handled through Special Programs in line with this section's responsibility for assisting the Medical Division in maintaining good community relations.

To provide technical personnel at Hanford Works with reports of current research and technical developments achieved within other Departments of the Company, Special Programs is in the process of establishing mailing lists whereby appropriate persons within the Nucleonics Department may obtain such technical reports. At the request of the Apparatus Department, Special Programs arranged for certain Nucleonics Department personnel to be placed on the Apparatus Department mailing list. The list was forwarded through the Apparatus Department's Pasco representative.

Employee and Community Relations Division

Fire Prevention Week activities conducted by Special Programs included the designing of an appropriate display in the display case located in front of the Municipal Building, in addition to the activities reported in the September monthly report. At the request of the Safety Division, the supervisor of Special Programs presented a 15-minute safety talk to members of Metallurgy Information Group in the 700 Area during Fire Prevention Week.

The supervisor of Special Programs attended the October meeting of the Safety Program Committee of the Nucleonics Safety Council and served as the committee's secretary.

"Employee Information" - WORKS NEWS

Four issues of the WORKS NEWS were published during the month of October and the quantity beginning with the October 28 issue was increased to 7900 to take care of 100-H Area. "Candid Camera" insert scheduled for the September 30 issue was placed in the October 7 issue due to the Community Chest insert which was included in the last issue of September.

Announcement was made in the October 7 issue of the new G.E. Group Health Insurance Plan scheduled to go into effect at Hanford Works and likewise a new column was introduced to the Hanford Works NEWS readers in a new information column entitled "Can You Tell Me?" The new column is designed to answer any questions which people have regarding company policy, rumors, or problems considered to be of general interest. During the entire month of October special publicity was given to the National Fire Prevention program. The WORKS NEWS also cooperated with the G.E. Suggestion System in promoting their drive for better suggestions. A full-page story and pictures were devoted to the announcement that the dial telephone system went into effect October 7 at Hanford Works.

As a service to Hanford Works telephone users the WORKS NEWS began in the October 14 issue to include a list of new phone numbers and changes as reported weekly from the telephone office. Included was an announcement that at the end of each month a four-page insert will be included containing a complete summary of all new telephone subscribers who have received telephones during the month. Publicity for the new Health Insurance Plan was continued in this issue. A new column was introduced in this issue to be continued weekly which is designed to acquaint Hanford Works people with the excellent reference facilities available to them through the Plant Technical Library. In observation of the 70th Anniversary of the incandescent lamp, a story and picture were included featuring the highlights of Edison's discovery.

Coinciding with the 70th Anniversary of the lamp discovery, an insert was enclosed in the October 21 issue entitled "Edison and Electricity". Further publicity was given to the new G.E. Group Health Insurance Plan through a lead story summarizing in detail the provisions of the plan, also an editorial. As a service to Hanford Works people a column was introduced in this issue listing articles left on area and village busses. This column will be continued every week. A full-page of pictures and a story on the top suggestion award winner to date was run in this issue, with emphasis being put on more and better suggestions to be submitted.

Employee and Community Relations Division

The October 28 issue wound up the publicity for the month regarding the new Health Insurance Plan. This issue marks the first appearance of the answers provided monthly in the "Can You Tell Me?" column. The monthly summary of telephone numbers and changes were enclosed as scheduled in this issue and copies were provided for home phones through the WORKS NEWS, and all office phones in Richland and outer areas, and all facilities.

"Employee Information" - Women's Features

Recreation possibilities in Richland and surrounding areas for Hanford Works people were pointed out in three WORKS NEWS articles during the month of October. On October 7, an article appeared in conjunction with the Richland Community Chest fund Drive. It announced and promoted a concert to be given by Hanford Works employees who are members of Richland musical organizations. The same concert was written up in the following week's WORKS NEWS which appeared one day before the concert was held.

The third article on recreation appeared in the October 28 issue of the WORKS NEWS. The availability of color booklets from the Union Pacific Railroad was announced. These booklets feature vacation spots in the Northwest. Also a calendar from the University of Washington was offered along with a concert schedule from the Portland Ellison-White Artist Bureau.

The WORKS NEWS for October 21 was edited by the women's feature writer in absence of the editor who was taking a training course. Number one feature in that issue was the announcement of full details of the new Health Insurance Plan and a letter commending the plan from Hanford Atomic Metal Trades Council President, C. A. Foster. New telephone installation rates were announced and a promotional article appeared for the Community Chest.

A full-page article was prepared for the October 21 issue showing the outside activities of N. L. Merkley. Mr. Merkley is the winner of the highest suggestion award ever received at Hanford Works since the start of the Suggestion System here. It was prepared as a promotional idea for the Suggestion System.

"Don't Let the Holidays Catch You Napping" was the theme of the Women's Page in the October 28 issue of the WORKS NEWS. Patterns for four different hand made articles were offered free to readers along with a set of parchment patterns for children's cookies. A mat issued by the G.E. Consumer's Institute featured Hallowe'en treats.

Every week a column appeared in the WORKS NEWS listing rides or riders seeking transportation to various week end and vacation spots. Two-hundred and seventy-nine requests were received during the month of October for rides or riders to the following destinations: Wenatchee, San Francisco, Tulsa, Minneapolis, Colorado, Topeka, Casper, Oklahoma, Tacoma, Tonasket, Wn., Salt Lake, Cheyenne, Denver, Spokane, Pullman, Moscow, Kansas, Boise, Seattle, Portland, and California.

COMMUNITY DIVISIONS

SUMMARY-OCTOBER, 1949

ORGANIZATION AND PERSONNEL

Number of employees on roll:	<u>Beg. of Month</u>	<u>End of Month</u>
Community Administration	6	6
Community Accounting	28	27
Community Public Works	419	445
Community Safety	3	3
Community Commercial Facilities	16	16
Community Housing	40	40
Community Fire	133	131
Community Patrol	83	82
Community Activities	12	12
	<u>739</u>	<u>762</u>

Changes in the force of the Community Divisions during the month of October, 1949, were as follows:

	<u>Reduced</u>	<u>Increased</u>
Community Administration	-	-
Community Accounting	1	-
Community Public Works	-	26
Community Safety	-	-
Community Commercial Facilities	-	1
Community Housing	-	-
Community Fire	2	-
Community Patrol	1	-
Community Activities	-	-
	<u>4</u>	<u>27</u>

TOTAL INCREASE, October, 1949 = 23

GENERAL

The Community Division's general offices were moved from the Municipal Building to the 762 Building during the month of October, 1949.

The following Community Division Appropriation Requests were approved during the month:

- 59-A-R, Project C-232, Part II-R, Carmichael Junior High School.
- 53-A-R, Project C-233, Part II-R, Spalding Elementary School.
- 50-A-R, Project C-234, Part II-R, Additions to Marcus Whitman Elementary School.
- 49-A-R, Project C-235, Part II-R, Additions to Lewis & Clark Elementary School.

1.

COMMUNITY DIVISIONS SUMMARY - October, 1949

GENERAL (Cont'd)

The following Informal Letter Requests were approved by the Atomic Energy Commission during the month:

Cleaning of Coal Fired Furnaces.
Maintenance of Prefab Roofs.

Applications for housing were reduced during the month from 250 to 231.

Seven new commercial facilities were opened for business: Hanson's Barber Shop, Green Hut Restaurant, Davis Furniture Company, Charm Beauty Salon, Kortton's Music Store, Spencer Kirkpatrick Insurance Agency, and Sullivan's Dry Cleaning Agency.

Business trends remained constant during October.

An extensive program in fire prevention was activated throughout the community during fire prevention week.

Notices regarding the increase in telephone rates were mailed to all subscribers.

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COMMUNITY DIVISIONS
PUBLIC WORKS DIVISIONS
OCTOBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	<u>Exempt</u>	<u>Non Exempt</u>	<u>Total</u>
September 30 1949	56	363	419
October 31 1949	58	387	445

Personnel changes made during the month:

New Employees (Rehires)		2	
Transfers from Community Accounting	1	1	
Transfers from Construction	1	1	
Transfers from Medical		1	
Transfers from Transportation		2	
Transfers from Maintenance		23	
Transfers from Purchasing & Stores		1	
Transfers to Transportation		2	
Transfers to Project Engineering		1	
Transfers to Power		1	
Terminations		3	

GENERAL

Due to the expansion of the Maintenance program for the Housing Division, it was necessary to increase our personnel in the Maintenance Section by 25 employees.

A list of acceptable faucet sets is being prepared by the Maintenance Section. Future purchases by Purchasing will be restricted to products on this list unless approved by this section prior to purchase. This program will be enlarged to include other items that contribute to excessive maintenance.

PROJECTS

C-146 Extension to Present Irrigation System. Work and all commitments complete and closed.

C 210 Traffic Signals. Project Proposal, Part II being revised as per Patrol Division requirements.

C-254 Painting Exterior of 514 Permanent Houses. Approximately 89% complete. 380 houses accepted.

C-274 Central Storage for Fuel Oil. Design and cost estimate completed. Extension of completion date was set to 11-30-49. Project is complete except for painting of pump house.

Community Public Works Divisions

PROJECTS (Continued)

C-282 R - Richland Village Dust & Pollen Control Program. Field release #4, Field Rye seeding dated 10-18-49 was issued, and seeding was started

Duane Avenue playground area is complete except for seeding. This area is under domestic water and will be seeded in the fall.

Clean up and grading in the inner block areas north of Van Giesen and west of Stevens is complete. Approximately 75% of area is seeded. Areas are being watered from domestic water service making possible the completion of this job this fall.

Grass seeding program will continue as late as possible into the month of November to permit seeding as many areas as designated in the Field Release.

Plant material is being moved out of the nursery. Replacements were made in the Duane Avenue Shelterbelt. Street tree stock is ready for transplanting.

Street tree planting will start with replacements and new trees along public areas.

C 292 - Van Giesen Extension. The Van Giesen road was paved from railroad to Yakima Bridge with speed signs posted.

C-345 - Insulation of Heat Ducts - Precuts. Directive was issued 9-2-49 and bids submitted. Awaiting award of contract.

C-348 - Asbestos Siding Administration Bldg. #703. Project proposal approved by AEC Directive No HW-148, dated 10-17-49. Specifications and drawings are being prepared for invitations to bid.

"S" PROJECTS

S-147 Addition to Fire Station #1. Approximately 95% complete. Eutment alterations pending move of Tenant Relations.

S 148 - Addition to North Richland Fire Station. Approximately 98% complete. Waiting for Fire Alarm System.

S 149 Addition to Fire Station No. 2. Approximately 98% complete. Awaiting delivery of fire alarm gong to complete.

S 217 Steam Line to Multiple Apartments. Material for steam line was obtained and delivered to the job site. A portable temporary building 12' x 14' was obtained from Excess for use by independent contractors performing work for Public Works Divisions.

Contract awarded to Bailey Plumbing and Heating Company of Pasco 10-11-49. Contractor started excavation 10-14-49 and final inspection was made 10-28-49, with no contractor exceptions. Steam line was put into service 10-28-49. Clean-up, road repairs, and reseeding lawns being done by Public Works crafts.

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Community Public Works Divisions

"S" PROJECTS (Continued)

S-229 - Furnace and Flue Cleaning ,Conventional Houses. Approved by Commission on October 5, and is now in Contract Section.

S 237 Richland Village Coordinate System Monument Installation. Request #4 for appropriation approved 9-13-49 Work order was issued. Traverses were run, and job is approximately 30% complete.

S-240 Roof repair and Maintenance of Prefabs. Approved by Commission on October 5 1949, and is now in Contract Section.

S 252 Installation of Henszey Single Cylinder Heat Exchanger. Appropriation requests prepared and sent out for approval signatures. Specifications for special equipment mailed.

ENGINEERING SECTION

Organization and Personnel:

Number of employees on payroll:	<u>Exempt</u>	<u>Non Exempt</u>	<u>Total</u>
September 30, 1949	16	10	26
October 31, 1949	17	11	28
Transfers from Design & Construction	1		
Transfers from Labor Section		1	

General

The following routine items were process during the month:

Requisitions	54
Store Stock Requests	13
Purchase Orders Expedited	16

Due to expansion in Housing Division's bathroom renovation program in conventional houses, it became necessary to make arrangements with Stores to increase their stock of bathtubs, floor linoleum, and tile board.

The following number of jobs were completed on continuous engineering service requests:

ESR #97-CH Elect. & Struct. Insp.	1
ESR #98-CH - Alter. Inspections	6
ESR #115-CF - Back Charge Est.	11
ESR #118-CF - Appvd. Alter. Permits	3

3.

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Community Public Works Divisions

The following Engineering Service Requests were completed:

<u>Job No.</u>	<u>Description</u>	<u>Date Completed</u>	<u>Remarks</u>
211-PW	Lubrication specifications	10 28 49	Prepared for printing
230-CH	Moving Columbia Camp prefabs	1 12 49	Note to C.W. Weeks
239 PW	Coal Screen	10 26-49	Drawings and WO issued
261 CA	Emergency Exits-American Legion	10 14 49	Drawings and WO issued
274-PW	Specifications for conversion of Coal Furnaces to Liquified Petroleum gas.	10-7 49	Information sent

Technical information and instructions were furnished the following prospective facility operators, clubs churches, and schools.

West Side United Protestant Church Building requirements
 Kaiser-Johnson Parking Lot
 Superintendent of Schools - Butler type building for agricultural instruction

The status of Commercial Facilities Division sponsored construction is as follows:

Block's Shoe Store Construction started 4-21 49 100% complete
 Morning Sun Dairy Construction started 9-8-49 . 80% complete
 Densow's Drug Construction started 6 22-49 - 100% complete
 Theater - Rechecking detailed plans - Awaiting corrections
 Anderson Motors - Construction started 7-5-49 - 80% complete
 Angerman Women's Apparel Construction started 8 29-49 - 50% complete
 House Dry Cleaners Construction started 8-29 49 - 70% complete
 Shell Service Station Construction started 4-13-49 - 100% complete
 Mobiloil Service Construction started 6-21 49 - 100% complete
 Davis Furniture - Construction started 6 8 49 99% complete
 Morgan's Warehouse - Construction started 5-24 49 - 90% complete
 Washington Investment - Construction started 5-24 49 - 90% complete
 National Bank of Commerce Awaiting start of construction
 Deymonsaz Construction started 9 16-49 20% complete
 Union Oil Service Construction started 5 2 49 - 100% complete

4.

Community Public Works Divisions

CONSTRUCTION (Continued)

NW Fuel & American Lumber - Construction started 5-2-49 - 100% complete
Davis & Walker Auto Parts Construction started 5-2-49 - 100% complete
Bozo's Drive In - Withdrawn
Dietrich Food Store - Awaiting start of construction
Addition to Yakima Tent and Awning - Awaiting preliminary plans
Bernhart's Bakery Awaiting start of construction
Kaiser and Johnson - Construction started 10-17-49 - 10% complete
Scott Publishing Co., Inc. - Construction started 10-13-49 - 25% complete
Cascade Radio Station - Awaiting information
Carnation Milk Depot Construction started 10-13-49 - 100% complete
Parker's Hardware Store - Construction started 10-13-49 - 30% complete
Multiple Business Building Construction started 10-2-49 - 5% complete
Drugstore Morgan & Olberg - Awaiting detailed plans
Photographic Studio Approved 10-13-49 - Awaiting information

The status of Community Activities Division sponsored construction is as follows:

Latter Day Saints Church - Construction started 2-5-49 - 35% complete
South Side United Protestant Church - Construction started 11-5-48 - 99% complete
Richland Baptist Church Construction started 11-27-48 - 99% complete
Assembly of God Church - Approved 5-16-49 - 85% complete
Church of Nazarene - Construction started 4-12-49 - 85% complete
Church of Christ - Approved 2-13-49 - Detailed plans reviewed, awaiting re-submittal
Richland Lutheran - Construction started 4-8-49 - 95% complete
Junior High School - Receive letter 10-16-49 - Awaiting detailed plans
New Elementary School - Awaiting preliminary plans
Sacajawea Grade School Cafeteria Addition - Construction started 9-16-49 - 60% complete
Swimming Pool Association - Awaiting detailed plans

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Community Public Works Divisions

CONSTRUCTION (Continued)

Reorganized Latter Day Saints Church - Construction started 8-22-49 - 10% complete

Christian Science Society - Awaiting preliminary plans

Administration engineering work in connection with roads, streets and grounds maintenance programs performed during the month included:

- (a) Study of design of roadway and drainage for Duane in connection with project is 90% complete.
- (b) Grade stakes were set for drainage at Van Giesen - George Washington Way and Williams-Marshall.
- (c) A total of 13 excavation permits were issued.

Alteration permits were approved for the following during the month:

Hanson's Enterprise	Install Sign	October 10, 1949
The Mart, Cafeteria	General Alterations	October 3, 1949

Miscellaneous work done on leased areas included the following:

A new traverse was run for Junior Rider's Club

Lot was staked for Washateria in North Commercial Area

T.B.M. was set and lot staked for Tri-City Herald

Leased areas were surveyed and plot plans prepared for the following:

- Morgan & Olberg Drug Store
- Parker's Hardware Store
- Multiple Business Bldg.
- Kaiser & Johnson Food Store
- Dietrich's Food Store
- Stone & Garmo Food Store

Report on progress of dike work is as follows:

A meeting was held with AEC and the Army Engineers with reference to Irrigation lines that lie under the dike. The following was agreed upon:

The 14" line under the north end of the dike be left in place, as it is above normal flood.

The relocation and hook-up of the irrigation system in back of the Desert Inn will be made by G.E. forces and back charged to U.S.E.D.

Community Public Works Divisions

Progress of dike work (Continued)

It was agreed with the U.S.E.D. that the irrigation line to the two tract houses on the south end of project (west of CAP airport) be cut for the dike. If it is necessary to keep this line alive for these places, a temporary line (about 500 ft.) can be laid. These places are to be abandoned within the next two years.

About 300 ft. of the north end of the dike will be put into lawn grass and maintained for 30 days by U.S.E.D., after which time it will be G.E. responsibility. From this grassed area south to the pump station (approximately 1000 ft.) will be gravel slopes. From the pump station (which is beginning at Hains Avenue south to a place where Hains Avenue turns west) will be in dry land painting of their mix. The Army will mow once or twice a year. From this point on the south to lower end of this section of the dike will be in lawn mix. This will be maintained for 30 days by U.S.E.D. at which time it becomes G.E.'s responsibility.

The section of dike around the disposal plant will have lawn mix on about 1/3 of the dike which will be on the north end. Again, this will be G.E.'s responsibility after 30 days. The remaining 2/3 of dike will have dry land planting.

An error in design of grades was apprehended by the Community Engineers at Gillespie and Harding Streets. Construction was stopped until a revision was made in the drawing.

OPERATING AND MAINTENANCE DIVISIONS

MAINTENANCE SECTION

Organization and Personnel

Number of employees on payroll:	<u>Exempt</u>	<u>Non-exempt</u>	<u>Total</u>
September 30, 1949	18	158	176
October 31, 1949	18	183	201

Personnel changes made during the month:

Rehire		2	
Transfers from Maintenance		23	
Transfers from Community Administrative	1		
Transfers to Community Administrative	1		

General

A total of 59 house renovations were completed during the month, 12 of these being prefabs and the remainder conventional type houses. The work involved included 9 complete interior paint jobs, 43 partial paint jobs, and cleaning and miscellaneous work as needed. There were 26 outstanding renovation work orders on hand at the close of the month.

7.

Community Public Works Divisions

General (Continued)

Interior painting of Dormitory M-13 has been completed and similar work is now in progress at M-1, M-2, W-2 and W-3. Other interior work during the month included spot patching and painting of 9 bathrooms and painting as needed following interior building alterations or repair throughout the 700 and 1100 Areas. Spray painting of all steam radiators in 703 Building is now in progress.

The Commercial Facility exterior paint program, which was started in August and involved 35 facilities, was completed early in the month. The Division I exterior paint program was discontinued on October 28, after completion of 77 houses this month this figure bringing the grand total on this program to 135 houses. The ticket booths at Bomber Bowl were spray-painted this month.

The anchoring of ranch type coal bin walls, necessary to prevent movement of these walls when under pressure of weight of coal was started this month and 218 houses have been completed. This work being accomplished very efficiently by butting a section of angle iron against the sill and anchoring this angle iron to the concrete floor through use of a "Drive-It" tool.

The raising, leveling and shimming of floors was completed in 53 houses to correct a condition of binding doors and unlevel floors caused by shrinkage of lumber and deflection of floor joists.

Utility closets in 17 prefabs were lined with celotex to eliminate damage caused by moisture condensation on walls.

) Replacement of floor linoleum in laundry and wash rooms of all women's dormitories and three men's dormitories was completed during October, this work having been done in a manner that will eliminate damage formerly caused by water leaking from these floors to walls and ceilings of rooms on lower stories.

Interior alteration of Building 762, necessary for the occupancy of this building by the newly formed Project Engineering Divisions, was completed.

Replacement of steam condensate lines in two apartment buildings was completed this month, a total of 4 buildings, or 50% of the work, now being finished.

The installation of 2 exterior vault doors on the north vault of the Building 703, and an enclosed stairway, connecting one of these doors on first floor to the other on the second story, was completed this month, and governor mechanisms have been installed on Knowles fire doors in Jefferson and Columbia Schools.

Work on Tract houses completed this month included installation of a new boiler and oil burner at K-777, water pump and tank at NN 1040, a septic tank and drain field at L-998, and pump vents on septic tanks at K 772 and K-787.

Work necessary in connection with the draining of village irrigation system is in progress, #3 grid being completed, and #4 approximately 30% complete.

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252

Community Public Works Divisions

General (Continued)

Winterizing of evaporative air coolers throughout 700 and 1100 Areas is approximately 90% complete, considerable work having been performed to correct faulty water connections which did not provide for proper drainage and have caused freeze damage in the past.

A record of miscellaneous jobs completed during October includes replacement of 4 refrigerator units; re building of 4 ranges; installation of tile board in 37 bath rooms; linoleum replacement on 71 sink and table tops and 14 floors; replacement of 4 residence stop and waste valves 2 kitchen sinks, 33 laundry trays 4 hot water tanks; major repair of 6 water heaters; installation of 48 furnace smoke pipes, 45 house rain gutters, gutters and downspouts at Post Office, weather stripping on windows of 8 prefabs; repair of 100 screen doors, 101 roofs, 3 shower stalls; recovering of 5 mattresses, 10 chairs, and repair of 20 chairs.

The Service Order Group completed a total of 2310 service orders during the month, 92.4% of this work being for Housing Division, 3.5 % for General Division, 2% for concessions, 1.2% for Public Works and remainder for various other divisions. A status report of service orders shows:

On hand at beginning of month	226
Received during month	2372
Completed during month	2310
On hand at end of month	288

UTILITIES SECTION

Organization and Personnel

Number of employees on payroll:	<u>Exempt</u>	<u>Non-exempt</u>	<u>Total</u>
September 30, 1949	9	58	67
October 31, 1949	9	60	69

Personnel changes made during the month:

Transfers from Transportation	1
Transfers from Construction	1

Steam

With the increase in heating steam requirements it was necessary to operate three boilers from October 19 through October 24 to meet the steam demand.

A considerable amount of maintenance and repair work has been done on the coal elevating system during the month. Some sections of the elevator housing have become badly worn, and it has been necessary to repair several sections of the housing. All other maintenance work done during the month has been of a minor routine nature.

Community Public Works Divisions

Steam (Continued)

A 3" steam line has been installed from our existing distribution system at the men's dormitories and connected to the system at the multiple apartments. This line was completed and put in service on October 28, 1949. At the time the new line was put in service operation of the multiple apartment boiler house was discontinued. Some additional heating at the Pasco Warehouse Area was required in the Transportation garage and in some of the warehouses.

Water

A. Domestic Water

The 2.2 million gallon reservoir at Columbia field has been drained and cleaned and is to be left empty for the winter season. We are now in process of winterizing all irrigation outlets connected to the domestic water system.

A fire protection water line has been connected to the raw water line at the south end of Wellsian Way to supply fire protection water in the fuel yard area.

DOMESTIC WATER SYSTEM

	<u>Well Production</u> <u>Million Gallons</u>	<u>Avg. Daily</u> <u>Production</u>	<u>Total Consumption</u> <u>Million Gallons</u>	<u>Avg. Daily</u> <u>Consumption</u>
Richland	92.5567	2.9857	127.0724	3.4539
North Richland	22.2770	0.7186	38.6622	1.2472
Columbia Field	63.5436	2.0498		
300 Area			<u>32.5398</u>	<u>1.0497</u>
	178.3773	5.7541	178.2744	5.7508

B. Irrigation

Operation of all irrigation systems was discontinued October 21. All systems are now in the process of being winterized.

Sewerage

On Saturday, October 1, 1949, the 14" valve to 30" forced main discharge line at the sewage lift station was replaced. Some difficulty was encountered in getting the sewage flow stopped to facilitate work on this valve. Because of this the lift station was shutdown for a longer period than was anticipated and a considerable amount of sewage was allowed to overflow into the retention basin. The sewage was returned to the system as soon as repairs were completed. The retention basin was then sprinkled with lime.

A considerable amount of trouble has been encountered with the #1 and #2 mixers in the primary digester at the #2 Disposal Plant. These mixers were pulled and on inspection the flow tubes in the digester were found to be free to move far enough to come in contact with the mixer blades. Angle iron guides were welded to the mixer frame to center the tube in the correct position. This has apparently eliminated the trouble.

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Community Public Works Divisions

Sewerage (Continued)

The gas fired hot water boilers at the #1 Disposal Plant have been completely overhauled and cleaned during the month.

	Total Sewage Flow <u>Million Gallons</u>	Average Daily Flow <u>Million G.P. D.</u>	Average Rate Flow <u>Gals per Min.</u>
Plant 1	35.800	1.1548	802
Plant 2	<u>65.200</u>	<u>2.1032</u>	<u>1461</u>
	101.000	3 2580	2263

LABOR SECTION

Organization and Personnel

Number of Employees on payroll:	<u>Exempt</u>	<u>Non exempt</u>	<u>Total</u>
September 30, 1949	10	135	145
October 31 1949	10	131	141

During the month the following personnel changes were made:

Transfers from Purchasing & Stores	1
Transfers from Medical	1
Transfers from Transportation	1
Transfers to Transportation	2
Transfers to Power	1
Transfers to Engineering	1
Terminations	3

Grounds Maintenance

Village nursery maintenance consisted of routine cleaning and pruning.

Duane playground is 75% complete. A total of 1,152 cubic yards of top soil was necessitated for this work.

387 trees were replanted on Duane Avenue Shelterbelt.

30 yards of top soil were required on seeding 1/2 acre grass at 306 Abbot.

33 yards of top soil were delivered to Village tenants at work order request from Tenant Relations during October.

Lawn irrigation maintenance consisted of irrigation to 181 acres of public lawns in Village.

Maintenance of lawns for approximately 25 vacant houses per week, continued during October.

11.

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Community Public Works Divisions

Grounds Maintenance (Continued)

Mowing of all public areas has stopped this season. The mowing crew is at present being utilized on grounds cleanup.

Fall collection of hose and aprinklers assigned to tenants for care of inner block areas is 90% complete.

Furniture

Six shipments of personal furniture were handled. Two men were required on handling government furniture and fixtures during the month.

Miscellaneous

Approximately 30 work orders completed covering excavations for utility installation and maintenance. Several excavations have been made on installation of condensate line in apartments.

Irrigation Canal

The main canal running through town was shut down 10 21-49. Water to 3000 Area Well Field will be discontinued 11-11-49. Winterizing of No. 3 system was started 10-17-49.

Seasonal weed burning on canal has started. Shaping of canal bank and removal of silt from bottom will be started as soon as canal is dry enough to allow shipment to work.

Road and Street Maintenance

Road maintenance and drainage of low areas has progressed satisfactorily.

Approximately 500 yards of sand has been stockpiled for winter use on iced streets.

Materials used by Road Crew for maintenance in October:

Pre-mix used on streets	71 tons
Pre mix used on walks	2 tons
Pre mix used on steps	8 tons
Pre-mix used on parking compounds	45 tons
3/4 minus aggregate on streets and roads	255 tons
Bitumels	175 gals.
6" Invasion Pipe for drainage	300 lin.ft.

Coal delivered from 700 Area Storage:

1131 Garage	42½ tons
#2 Fire Station	3 tons
United Protestant Church	4½ tons
1182 Bldg.	2 tons
Pasco T 131	6 tons
1133 Bldg.	2 tons
#5 Warehouse	2 tons

COMMUNITY COMMERCIAL FACILITIES DIVISION

October, 1949

ORGANIZATION AND PERSONNEL

OCTOBER

Number of employees on payroll:

Beginning of month	15
End of month	16
Net increase	1

COMMERCIAL FACILITIES:

The following figures indicate trends in commercial activities as related to various basic items:

	<u>September</u>	<u>October</u>
Cafeteria meal customers	45,443	43,671
Percent of room day occupancy - Desert Inn	56%	61%
Gallons of ice cream sold	4,274	3,779
Carnation milk & cream deliveries	67,418	69,524
Darigold milk & cream deliveries	3,068	3,015
Morning Sun Dairy milk and cream deliveries	11,201	13,323
Theater customer count	44,436	35,851
Gallons of gasoline sold	152,880	173,896

Total number of Commercial Facilities Operators' employees, full and part-time as of October 31 - 988. This shows a net increase of 28 over last month's 960.

Hanson's Barber Shop opened for business on October 1 in Uptown Commercial Area.

Construction was started October 2 on Tri-City Herald Building to house circulation and news gathering offices.

Construction was started October 7 on building to house Parker's Hardware in Uptown Commercial Area.

Green Hut Restaurant, located in Densow's Drug Store in Richland Heights, opened for business on October 8.

The Spencer-Kirkpatrick Insurance Agency opened for business in Dawson-Richard's Building on October 11.

Davis Furniture Company, including Charm Beauty Salon and Kortan's Music Store, located in Uptown Business District opened for business on October 13.

Construction was started October 13 on Kaiser's Food and Drugstore building located at northeast intersection of McMurray and George Washington Way.

Construction was started October 14 on American Fuel Company Building near the intersection of Lyman Road and Wellsian Way.

October, 1949

Construction was started by Joseph and Cannon October 21 on multiple business building to house self-service laundry and other retail shops in Uptown Commercial Area.

Construction was started on October 31 on National Bank of Commerce Building to be located in Uptown Commercial Area.

Alteration Permits were written for installation of neon sign for Hanson Enterprises, Inc. and remodeling of The Mart.

Sale of Government-owned equipment to The Mart was completed on October 20.

The following routine items were processed:

Letters regarding Patrol Reports	27
Work Orders	35
Back Charges	11
Patrol Orders	25

CONTRACTS AND NEGOTIATIONS:

Supplemental agreements were entered into with the following firms and/or individuals:

L. C. Foisy, operator of the Recreation Building - Supplemental Agreement IV, dated July 15, 1949, amending basic operating agreement to provide for the sale of beer for consumption off the premises.

Riding Academy - Supplemental Agreement III, dated October 1, 1949, to provide for the relinquishment of a portion of the acreage assigned to the facility for subsequent transfer to Richland Riders' Club, and the further acquisition of additional acreage for use as pasturage.

Klopfenstein's was authorized to sublet a portion of its building to McCann's of Seattle, for boys' wear department.

Dawson-Richards was authorized to sublet space to Spencer-Kirkpatrick for use as an insurance agency.

Vance Properties, Inc. was authorized to sublet space in the Desert Inn to International & Domestic Travel Service for use as a travel agency.

Hanson Enterprises, Inc. was authorized to sublet space to S. J. Patterson for establishment of a window cleaning and janitorial service.

Commercial Facility Leases were entered into with the following firms for the construction of buildings and operation of businesses as outlined below:

Robert Kaiser - lease dated October 24, 1949 - for construction, maintenance and operation of a food store and drugstore to be known as Kaiser's Market.

Willard W. Parker - lease dated October 10, 1949 - for construction, maintenance and operation of a hardware store to be known as Parker's Hardware.

Conrad Diettrich and Karl C. Diettrich - lease dated October 24, 1949 - for construction, maintenance and operation of a retail food store to be known as Diettrich's Market.

Midstate Amusement Corporation executed an Assignment of Lease on the Richland Theater, dated September 30, 1949, covering assignment of its right, title and interest in the lease to Richland Theater Company.

Greyhound Post Houses, Inc., on October 3, 1949, assigned its right, title and interest in and to the Operating Agreement, as amended, to the partnership of Ray Moller and Fern Moller, with Greyhound Post Houses, Inc. continuing to supervise and guarantee performance of bus depot operation.

Invitations to Bid were mailed to prospects on a storage and warehouse facility to be established in the Light Industrial Area.

COMMERCIAL FACILITIES EXPANSION PROGRAM:

Number of businesses operating as of September, 1949	73
New facilities opened for business this month	<u>7</u>
*Total Commercial Facilities in operation	80
New facility buildings under construction	12
New ground leases	0

*Five 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:

- Auto Agency
- Book & Stationery Store
- Golf Driving Range
- Jewelry Store
- Shoe Store
- Storage Facility
- Welding
- Women's Wear (Corset Shop)

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

October, 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll	<u>October</u>
Beginning of month	40
End of month	40

RICHLAND HOUSING

Housing Utilization as of Month End

<u>Houses Occupied by Family Groups</u>	<u>Conven-</u>	<u>Block</u>	<u>T</u>	<u>Pre-</u>	<u>Pre-</u>	<u>Pre-</u>	<u>Apt.</u>	<u>Tract</u>	<u>Total</u>
	<u>tional</u>			<u>Cut</u>	<u>Ranch</u>	<u>fab</u>			
Operations	2208	268		332	835	1140	63	39	4935
Commercial Facilities	96	6		25	64	59		2	252
Community Activities	10			1	5	6	1	5	28
Post Office	5				3	14		3	25
Government	103	33		12	27	25	3	3	206
Schools	42			5	13	47	1		108
Kellex Corporation		5		3		1	1		10
Morrison-Knudsen	2			1					3
Atkinson-Jones	10	17		6	12	3	2		50
J. G. Turnbull	1	2		5	5	8	1		22
Giffels and Vallet	1			1	6	5			13
J. A. Terteling			10	1	2				13
Newberry Neon	2	1		1					4
Urban, Smythe & Warren	1			1	1	1			4
Vernita Orchards								**8	8
TOTAL HOUSES OCCUPIED	<u>2481</u>	<u>332</u>	<u>10</u>	<u>444</u>	<u>973</u>	<u>1309</u>	<u>72</u>	<u>60</u>	<u>5681</u>
Houses assigned (leases written)	7			4	5	6			22
Houses assigned - awaiting tenants	12	1		2	22	17	2		56
Government houses - unassigned								*39	39
TOTAL HOUSES	<u>2500</u>	<u>333</u>	<u>10</u>	<u>450</u>	<u>1000</u>	<u>1332</u>	<u>74</u>	<u>99</u>	<u>5798</u>

* This includes 32 Tract Houses boarded up for salvage.

** This figure includes one tract house leased by Graysport and one by Newport-Kern Kibbe.

COMMUNITY HOUSING DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2479	33	31	2481	Plus 2
Block Type	329	6	3	332	Plus 3
T Type	10	0	0	10	None
Precut Type	438	14	8	444	Plus 6
Ranch Type	981	26	34	973	Minus 8
Prefab Type	1313	27	31	1309	Minus 4
Apartments	73	2	3	72	Minus 1
Tract	63	1	4	60	Minus 3
Total	5686	109	114	5681	Minus 5

Dormitory Statistics

Dormitories	Occupants	Vacancies	Total Beds	
Men - Occupied	13	479	37	516
Men - Unoccupied				
Women - Occupied	14	*466	116	582
Women - Unoccupied	1			

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	70
Exchanged houses	25
Moves (within the Village)	39
Total new leases signed	109
Turnovers	6
Houses sent to renovation	53
Houses assigned "As Is"	36
Terminations	62
Total Cancellations	114
Applications Pending	231

Tract house K-745 was vacated on October 10, 1949 and turned over to the A.E.C. for sale.

Tract house K-782 was vacated on October 31, 1949 and turned over to the A.E.C. for sale.

Due to the large number of vacancies in women's dormitories, dormitory W-17 was closed on October 15, 1949.

October 22 a ranch house located at 2409 Swift caught fire and burned. Most of the damage was confined to the attic and estimated at \$1500. It will take approximately thirty days to repair.

Tract house O-1163, located at 505 Davenport is being renovated to be leased.

A concrete floor slab in the ranch house at 1513 Sanford settled and sank about three inches below normal floor level. It will require approximately three weeks to jack the floor up to its normal position.

A program to winterize all vacant houses was inaugurated during the month. This will continue throughout the winter.

TENANT RELATIONS

The processing of Service Orders, Work Orders and Backcharges during the month is as follows:

	Issued from Sept.29 to October 31	Incomplete October 31	Issued Previous Month
Service Orders	2280	242	1905
Work Orders	423	1045	330
Backcharges	232	10	212

77 Conventional houses exterior painting completed as compared to 58 the previous month.

9 Bathrooms repaired and spot painted.

66 Home Fire Inspections were reported and processed. 111 homes were visited.

1116 Pounds of grass seed were issued as compared to 2376 the previous month. Issuing of grass seed stopped as of October 25, 1949

ITEMS OF INTEREST

	Total Outstanding	Total Outstanding Previous Month
Laundry Tubs	22	52
Bathtub Replacement	52	43
Faucets	13	10
Sink Linoleum Replacements	50	80
Bathroom Tileboard	50	66
Window Glass (Includes reputtying)	13	10

Alteration permits issued during the month of October totaled 68 as compared to 88 during the month of September.

Automatic washers	9	Construction of fence	4
Construction of toolhouse	2	Additional wiring	10
Basement excavation	7	Basement Partition	2
Construction of driveway	7	Thermostatic control of furnace	3

692 Inspections were made during the month of October A breakdown of the inspections shows the following distribution:

Window shades	77	Walls	65
Grass Seed	61	Linoleum	57
Bathrooms	56	Sidewalks	41
Top Soil	41	Leaking Basements	29
Floor Boards	18	Lot Lines	18
Miscellaneous	229		

In addition to the above routine the inspectors have been working ahead of the Maintenance crew, contacting the George Washington Way apartment tenants in regard to the installation of the condensate system. Two inspectors spent the entire week from October 24 through October 28 making house inspections for recommended work.

DORMITORY PROGRESS REPORT

A considerable amount of cleanup work has been done around buildings and grounds. Trimming along walkways and driveways remains to be completed.

Sanding operations in M-12 continue.

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DORMITORY PROGRESS REPORT

A survey was made of work to be done in shower stalls as soon as man power permits.

Because of colder weather, steam repairs during the month were above normal.

) The air conditioners and outside hose bibbs were winterized during the month.

Several of the buildings have had new linoleum laid in the showers and laundry rooms to prevent water damage to buildings.

Four buildings are in process of being renovated.

M. S. Warehouse Monthly Report

INVENTORY ITEMS TOTAL	ITEMS	TOTAL OPENING INVENTORY	140,847.20
		AMOUNT	
Received inventory items	552	2,397.72	
Received on store order	<u>2524</u>	<u>1,867.18</u>	
Total received	3076	4,264.90	
Disbursed inventory items			
Furniture	22	359.74	
Free issue	2273	1,973.47	
Cash	43	78.14	
Dorm supplies	3286	749.34	
Warehouse supplies	5	1.01	
Dorm linens	281	704.11	
Dorm shades, etc.	<u>55</u>	<u>57.58</u>	
Total	5965	3,923.39	
INVENTORY ITEMS BALANCE			101,445.03
) PLANT ITEMS INVENTORY		39,743.68	
Received	23	2,915.60	
Disbursed	10	830.32	
PLANT ITEMS BALANCE			41,828.96
Price adjustment			20.85
GRAND TOTAL INVENTORY			143,294.84
	<u>Pieces</u>		
Dorm furniture exchanged	48		
Ranges exchanged	10		
Refrigerators exchanged	9		
Sent to maintenance	57		
Received from maintenance	63		

MS Warehouse has taken over delivery and pick up of linens resulting in some savings which will be reflected in a cleaning program in dormitories.

An inventory is being conducted in the dormitories, accounting system being set up for same. Some savings are reflected in this inventory by eliminating extra furniture (non-standard) when rooms are vacant.

COMMUNITY SAFETY DIVISION
OCTOBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on Payroll	<u>October</u>
Beginning of month	3
End of month	3

GENERAL

The work sheets on the Fire Prevention Survey have been completed as far as the information from Commercial Facilities Operation. These sheets are being forwarded to the Fire Protection and Prevention Division; for their assistance in the survey. These sheets include the school property, and all Government-Owned Commercial Facility property.

Mr. L.A. Bowman, Traffic Consultant for A.E.C. spent a week in Richland studying the proposed traffic changes and improvements. His report was submitted to Mr. Clarence Lange. This information and recommendation will be incorporated in our Traffic Survey.

The Traffic Analysis for 1948 was presented by the National Safety Council, October the 10th, at a luncheon held in the Desert Inn. Mr. Paul Hill, a representative of the National Safety Council, made the presentation.

"No Respector of Persons", a program started in October, will be a thirteen weeks program over K P K W.. The time is set for every Thursday at 6:20 P.M.. Mr. Leith Loder, the narrator, is a member of the A.E.C. Security. Each week he will give a six minute story describing accidents in the careers of famous people.

The "Motor Manners" program, which was started October the 3rd, was well publicized. We were given good coverage in approximately twelve papers, including papers as distant as Los Angeles and Montana.

The Village Safety Supervisor attended the Managers Conference of the National Safety Congress, on October the 21st and 22nd. This was a two day meeting which was held prior to the National Congress. It was at this meeting that discussion was given relative to cities such as Oak Ridge and Richland being compared in the National Traffic Contest with ordinary cities. It was the opinion of some of the Judges that due to the fact that they were government cities, there should be no comparison. It was pointed out to these judges, with considerable discussion, that Richland had a good semblance of a normal city, and in some respects, a more serious condition, relative to traffic and traffic control, in view of the increase of children in comparison to other cities, as well as the large number of vehicles operating in Richland as compared to other cities. Richland has almost the same ratio in motor vehicles as, possibly, Lansing, Michigan, which has a very high ratio per population. At the conclusion of the conference, it was the opinion of several of the judges that Richland should be entered in open competition. Oak Ridge still remains questionable, but very likely will be entered the same as Richland. In the event that we do compete

Community Safety

-2-

with all other cities; Richland stands good chance of attaining first place among cities up to 25,000. If this occurs, it is the opinion of Mr. Earl Campbell, of the National Safety Council, that Richland could and should be held up as the Model City. This would bring considerable amount of publicity to Richland. Quite a few visitors will be in Richland in the future for the purpose of looking over the traffic problem, parking problem, traffic control problem, and the general safety of the city.

It is felt by this office that the record achieved by Richland is enviable to many cities, and that Community Divisions should take full advantage of it. For example: A Traffic Record like this is contributed to by a good recreational program that is sponsored by the Community Activities Division, and should be given full support by other divisions. Also, the Public Works Division has definitely aided this program by activities involving engineering problems.

COMMUNITY FIRE DIVISION

October 1949

Organization and Personnel

Number of employees on payroll	<u>October</u>
Beginning of the month	133
Termination	<u>2</u>
End of the month	131

	<u>Richland</u>	<u>North Richland</u>
Response to alarms	15	4
Fire Loss (Estimated)		
Hanford Works	\$1,708.00	0
Personal	159.00	20.00
Investigation of minor fires and incidents	14	1
Safety meetings held	16	8
Inside drills	78	28
Outside drills	22	39
Alarm boxes tested	173	74

Miscellaneous Activities:

1. Two crash-fire and rescue schools held for Government Airport employees.
2. Conducted safety meeting at Fire Station No. 1 for 45 employees from 705 Building.
3. Tested 10,800 feet of 2½ inch and 4,050 feet of 1½ inch hose.

Fire Prevention:

Fire Inspections		Fire Extinguishers	
700 Area Buildings	68	Inspected	722
1100 Area Buildings	44	Recharged (CO2 & Foam)	14
Commercial Buildings (Gov't owned)	63	Installed (Pump cans)	103
Government Airport Buildings	20	Removed (Soda-acid)	100
Schools, Clubs, Churches	29	Winterized (Pump cans)	112
Dormitories	30		
Homes	<u>66</u>		
Total	320		

Fire Prevention Week Activities:

At the request of the Community Fire Division, The Greater Richland Chamber of Commerce sponsored the campaign. Activities included the following:

1. Public Schools:

All of the 5161 enrolled students participated in one or more ways in Fire Prevention Week observance.

Each school conducted more than one fire drill during the week, several with simulated blocked exits. The high school conducted a daily drill

1. at different class periods.

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Three separate contests were held resulting in 1730 posters, 708 essays and 785 slogans submitted by students.

A total of 35 fire prevention playlets or skits, many original, were presented. Several were performed before parent audiences.

Each school used outside speakers furnished by Speaker's Bureau for classroom and assembly talks. (See Civic section)

Student-faculty committees thoroughly inspected each school building for detection of hazards and submitted reports of their findings.

Approximately 5100 home inspection forms were sent home and over 3500 or about 70% were returned properly completed. Any percentage above 35% is considered excellent return.

Lower grades were particularly active in varied fire prevention events such as presenting original songs, learning by toy telephone to dial the Fire Department, witnessing experiments in fire safety, painting fire murals, presenting original poems and using student-painted fire pictures to denote blocked exits during fire drills.

Practically all classes witnessed demonstrations and heard talks by the Fire Department. (See Fire Department section)

Classroom and corridor bulletin boards and some trophy cases were utilized for posters, bulletins and displays on fire prevention. Several excellent table displays were arranged.

2. Civic Clubs:

The American Legion and Villagers, Inc. jointly provided trophies for the student poster, essay and slogan contests. A joint committee from these organizations judged the three contests and awarded a trophy to the school with the best overall participation.

The Village players offered an attractive plaque for the best play or skit staged by students and judged them for winning group.

The Kiwanis Club obtained Jay W. Stevens, Assistant Manager of the National Board of Fire Underwriters from San Francisco, as its Fire Prevention speaker. Kiwanians staged a comical fire prevention skit at the luncheon. Mr. Stevens also addressed all high school students.

The two Richland Clubs of Toastmasters International and the Toastmistress Club formed a Speaker's Bureau whose members made numerous fire prevention talks before safety meetings of company employees, clubs, school classrooms and assemblies.

Parent-Teacher organizations made over 4000 individual contacts at programs and by distribution of literature.

3. Youth Organizations:

Boy Scout, Campfire Girls, Cub Scouts, Brownie Groups and Girl Scouts participated in a variety of activities including distribution of fire prevention literature; vacant lot, alley and church basement cleanup; witnessing demonstrations and lectures on fire prevention at their meetings and fire station visitations.

4. Commercial Facilities:

Every firm properly completed and submitted a self-inspection form.

One firm devoted its show window to a "Win A Casket" display and another devoted a window to a youth group fire prevention display.

Merchants displayed posters and affixed fire prevention stickers on book matches and packages.

Several merchants used fire prevention mats in newspaper advertising.

"Going To Blazes" and a Fire Prevention Week trailer were shown to 5200 patrons of the Richland Theaters.

Radio Stations KPKW (Pasco) and KWIE (Kennewick) made numerous spot announcements and both stations presented special 15 minute broadcasts devoted to the campaign.

5. Churches:

Fire Prevention Week messages were delivered from each pulpit on October 9th and in church bulletins the week previous.

Church organizations reported 100% on self-inspection of church buildings.

A used clothing drive co-ordinated with the campaign netted approximately 7200 pounds of usable clothing.

A member of the Speaker's Bureau addressed church boards on the subject "Why Churches Burn".

6. Employee and Community Relations Division:

Almost daily news and photo releases were dispatched to northwest and Tri-City newspapers and/or radio stations prior to, during and after Fire Prevention Week.

This division photographically covered all events of the campaign.

Excellent art work was provided for displays and reports.

3.

7. Community Division:

At the request of the Community Manager, all divisions made comprehensive inspection of assigned buildings and areas, submitting reports of their activities.

8. Fire Department:

Group visitations to the fire stations for explanation and demonstrations of fire apparatus, firefighting equipment and alarm equipment were utilized by 11 school classes of 237 pupils, 29 Boy Scout and other youth organizations of 238 boys and girls and 4 groups of General Electric employees of 106 adults, totaling 634 people.

Fire truck demonstrations and accompanying fire prevention talks were made at all schools to 22 groups totaling 3,343 students.

Fire extinguisher and fire alarm demonstrations were held before 110 adults and 455 juveniles at various evening functions.

Fire Prevention Week material posted or distributed is as follows: 450 posters; 1,944 stamps and stickers; 28,900 leaflets and booklets; 6,500 inspection forms; 77 playlets, skits, readings; 47 newspaper mats and cartoons; 29 special signs for fire trucks, trash trucks, etc. This totals 37,947 items utilized.

A Fire Prevention Week message was printed on every paycheck envelope issued October 1st to monthly and October 7th to weekly Hanford Works employees, a total of 7,700 envelopes.

Six 16mm. fire prevention movies made available by the Safety Division were shown to over 600 employees in safety meetings.

9. Participation in National Fire Prevention Week contests:

Reports of Richland's activities are being prepared for both the National Fire Waste and U. S. Chamber of Commerce 1949 contests.

10. Recognition:

The Community Fire Division is certain that Fire Prevention Week was a notable success resulting from the extra-curricular efforts by many organizations and individuals but especially commends the co-operation of the Richland Public Schools, The Kiwanis Club, the Employee and Community Relations Division, the American Legion, Villagers, Inc., Village Players, and two Toastmaster and the Toastmistress Clubs, churches, youth organizations, Midstate Amusement Corporation, Parent-Teachers Organizations, Dawson-Richards Clothing and all Community Divisions.

Miscellaneous Fire Prevention Activities:

Routine Inspections were made of all alarm and sprinkler systems.

Meetings were held with all fire wardens in various buildings to review their duties.

COMMUNITY DIVISIONS

COMMUNITY PATROL

OCTOBER 1949

ORGANIZATION AND PERSONNEL

	<u>October</u>
Number of employees on payroll:	
Beginning of month	83
End of month	<u>82</u>
Net Decrease:	1
Reason: 1 Removal from Payroll - Sick Leave	

GENERAL

The Community Patrol Division cooperated with the Community Fire Division in preventing fires and in emphasizing fire prevention during Fire Prevention Week, October 9 through 14. All Patrol personnel were alerted to especially watch for fire hazards, etc., in cooperation with this program.

On October 10, 1949, the North Richland Patrol began wearing wool uniforms on all shifts.

On October 15, 1949, Capt. J. S. Johnson of the Crime Prevention Section spoke to the Lewis and Clark Parent-Teachers Association on Juvenile Problems.

On October 28, 1949, the "No Hunting" restriction was partially lifted to permit hunting during the duck hunting season in the territory along the Yakima from the irrigation ditch north and west along the Yakima River to the Van Giesen Street bridge.

During the month, Patrol received commendations from two local business firms expressing appreciation for the services rendered to them by the Patrol.

Progress on the Charles E. Wilson 50th Anniversary Program is progressing satisfactorily.

During the month of October, 13 prisoners were processed through the Richland Jail.

During the month of October, 59 gun registrations were taken by Richland Patrol.

During the month of October, a total of 130 Unusual Incident Reports were received, which consisted mainly of Larceny, Domestic Trouble, Destruction of Personal Property. Regular Traffic Violation and Offense Statistics are presented in separate tables attached to this report.

TRAFFIC

On October 5 and 6, 1949, Capt. A. E. Barron attended the Governor's Traffic Safety Conference at Olympia, Washington. This conference was held due to the increase of traffic accidents since the close of the war.

Lt. Robert W. Denslow, Accident Prevention Bureau of the Washington State Patrol, and Mr. Paul Hill, National Safety Council, were visitors in Richland on October 10, 1949, to present an analysis of the Richland Traffic Safety Record for 1948. As is evidenced by current reports emanating from the meeting of the National Safety Council recently held in Chicago, Illinois, Richland is outstanding in the nation for cities of 10,000 to 25,000 population for achievement in the traffic field.

On October 12, 1949, the speed limit on Stevens Drive in front of the Barracks Area and on George Washington Way in North Richland was changed, with the approval of the Community Traffic and Safety Committees, from 25 miles per hour to 35 miles per hour. The speed limit on Van Giesen Street between Perkins Avenue and the By-Pass Highway was also changed on October 18, 1949, from 25 miles per hour to 35 miles per hour. These changes were the result of several traffic surveys conducted recently which showed a low traffic volume count and the absence of traffic congestion.

A program was started during the last week of October to reduce the number of violations of the traffic law covering the riding of bicycles during hours of darkness. Mr. P. A. Wright, Superintendent of Schools, was contacted for support in this program. Providing the school principals contact the children and stress the dangers involved, youngsters may voluntarily cooperate. Patrolmen will enforce the traffic laws covering not only riding without lights but other violations such as "Stop" Sign, Riding Double, Cutting in and out of Traffic, etc. Articles will appear in the local newspapers enlisting support of the parents, and posters covering the subject, will be placed in public places.

Community Patrol Traffic Section was responsible for effecting a savings in the manufacture of "traffic delineators." The cost of these delineators was reduced from approximately nine cents each to approximately two cents each by making them ourselves. Present plans are to use between 400 and 500 of the delineators within the next month.

TRAINING

Ptm. D. R. Montgomery and T. R. Stout attended the F. B. I. State-Wide Basic Law Enforcement School at Fort Lewis, Washington, from October 3 through 14, 1949. This school covered all phases of police work. Ptm. Montgomery turned in the highest pistol score of the entire class of 28 officers. Ptm. Stout received second place. This phase of the program consisted of time firing fifty rounds of ammunition on the Practical Pistol Course which is the same as the F. B. I. course.

On October 3 and 5, 1949, test practices on blockade procedure were run by the Richland and North Richland Patrols.

Community Patrol Division - Continued

Beginning October 18 and extending through November 16, 1949, the F. B. I. is sponsoring a police training school for the Richland Patrol. Duplicate sessions on different days of the week at different hours of the day are being held in Dormitory W-10, Richland. Topics to be covered are:

- The Law of Evidence from a Law Enforcement Officer's Viewpoint.
- Collection and Preservation of Evidence
- Practical Crime Scene Investigation (Burglary)
- Techniques and Mechanics of Arrest
- Writing the Report for the Prosecutor
- Preparing a Case for Trial
- Testifying in Court
- Moot Court

Capt. J. S. Johnson and Sgt. A. L. Reil attended a Juvenile Control School in Tacoma, Washington, from October 17 through 21, 1949. This school was sponsored by the Tacoma Police Department and conducted by the F. B. I. Capt. Johnson and Sgt. Reil also attended a Safe Cracking and Lock Picking School in Tacoma on October 24, 1949.

Sgts. R. L. Jones and G. A. Mumper also attended the Juvenile Control School in Spokane, Washington, from October 24 through 28, 1949. This school was sponsored by the Spokane Police Department and conducted by the F. B. I.

Subjects covered in the lieutenant's training classes for the month of October were as follows:

- The Law of Arrest
- Road Blocks
- Police Problems in Tri-City Area
- The Use of a Notebook in Police Work

Advance training for Community Patrol members at the Small Arms Range for the month of October was divided into field instruction as follows:

- Pistol 2 hours
- Machine Gun 2 hours

Progress of scores and qualifications on the Army-L Course were as follows:

	<u>August</u>		<u>September</u>		<u>October</u>	
	No.	Percent	No.	Percent	No.	Percent
Unqualified	3	5%	4	6%	0	0
Marksman	10	18%	10	16%	11	24%
Sharpshooter	6	11%	8	12%	5	11%
Expert	38	66%	43	66%	30	65%

No scores were kept on the Machine Gun Course. Each man, however, fired practice shots and received the regular instructions on the handling and firing of the weapon.

Community Patrol Division - Continued

ACTIVITIES AND SERVICES (RICHLAND)

	<u>August</u>	<u>September</u>	<u>October</u>
Check on absentees	6	5	4
*Persons assisted	222	176	181
Doors & windows found open in commercial facilities	89	47	55
Lost children found	12	15	29
Ambulance runs	34	35	33
Lost dogs reported	7	8	4
Dog, cat, loose stock complaints	55	41	32
Persons injured by dogs	14	7	9
Bank escorts & details	45	40	40
Fires investigated	25	26	26
Miscellaneous escorts	38	160	158
Complaints investigated	143	134	171
Missing persons reported	<u>3</u>	<u>5</u>	<u>4</u>
Totals	693	699	746

*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; etc.

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	<u>August</u>	<u>September</u>	<u>October</u>
Check on absentees	0	0	0
*Persons assisted	122	126	98
Doors & windows found open in commercial facilities	11	68	9
Lost children found	1	4	1
Ambulance runs	0	0	2
Lost dogs reported	0	0	0
Persons injured by dogs	0	2	1
Dog & cat complaints	2	3	1
Bank escorts & details	14	27	16
Fires investigated	2	7	3
Miscellaneous escorts	21	17	16
Complaints investigated	13	19	5
Missing persons reported	<u>0</u>	<u>0</u>	<u>0</u>
Totals	186	273	152

*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

OCTOBER 1949

<u>Patrol</u>	<u>Entire Patrol</u> <u>9-30-49</u>	<u>Entire Patrol</u> <u>10-31-49</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	2	1
Clerks	<u>2</u>	<u>2</u>
Totals	4	3
Grand Totals	83	82

COMMUNITY PATROL DIVISION
PATROL DIVISION - TRAFFIC CONTROL STATISTICS

October - 1949

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Richland	15	15	0	0	1	1	2	4
North Richland	4	0	0	0	1	0	2	0
Totals	19	15	0	0	2	1	7	4

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Richland	0	10	4	4	0	0	11	1
North Richland	0	0	2	0	0	0	2	0
Totals	0	10	6	4	0	0	13	1

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Richland	1	2	2	0	126	130	3	0	9	4	0	0	141	136
North Rich.	0	0	0	0	0	4	0	0	1	1	0	0	1	5
Totals	1	2	2	0	126	134	3	0	10	5	0	0	142	141

COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Drunk Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.	Sept.	Oct.
Richland	35	19	11	7	2	1	0	0	3	3	8	9	3	1	19	17	79	57
N. Rich.	5	7	5	1	1	2	0	1	0	0	0	2	0	0	6	4	18	17
Totals	40	26	16	8	3	3	0	1	3	3	8	11	3	1	25	21	97	74

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on October 26, 1949, at intersection of George Washington Way and Knight Street - 7,216 Cars.

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COMMUNITY PATROL DIVISION
RICHLAND JUSTICE COURT CASES

October 1949

VIOLATION	NO. OF CASES	NO. OF CONVICTIONS	TOTAL FINES	TOTAL SUSP.	SENTENCED TO JAIL	SENTENCE SUSPENDED	LICENSE REVOKED	AVERAGE FINE PAID	CASES DISMISSED	WARRANTS ISSUED
Drunken Driving *	1	1	\$77.50				1	\$77.50		
Reckless Driving**	1	1	\$52.50					\$52.50		
Negligent Driving	9	9	\$230.00	\$55.00				\$25.56	1	2
Speeding ***	23	22	\$260.00					\$11.82		1
Stop Sign ****	7	7	\$35.00	\$3.00				\$5.00		
Improper Passing	1	1	\$7.50					\$7.50		
No. Drivers License	8	8	\$45.00	\$5.50				\$5.74		2
Improper Parking	2	2	\$7.00					\$3.50		
Negligent Riding on a Motorcycle	1	1	\$17.50					\$17.50		
No License Plates	3	3	\$22.50					\$7.50		
Failure to Dim Headlights	1	1	\$7.50					\$7.50	1	
F.T.Y.R.O.W.	1	1	\$7.50					\$7.50		
Public Intoxication	9	9	\$112.50					\$12.50		
Disobeying a Police Officer	1	1	\$5.50					\$5.50		
Threatening Offense against person of another	1	1	\$2.50					\$2.50	1	
Third Degree Assault	1	1	\$12.50	\$12.50		1		\$12.50		
Indecent Exposure	1	1								
Total	71	68	\$895.50	\$76.00	1	1	1	\$254.62	3	5

Total Fines \$895.50
Less Suspensions \$76.00
Total Fines \$819.50

* 2 Cases amended to Negligent Driving.
** 1 Case driving privileges suspended for three months.
*** 3 Cases included with other violations.
**** 1 Case included with other violation.
1 Case picked up for Benton County Sheriff who held Extradition Warrant for Desertion from Calif.

1213173

CRIME PREVENTION SECTION
MONTHLY REPORT
OCTOBER, 1942

COMMUNITY PATROL DIVISION

Classification of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses		Offenses Cleared		Perpetrators Involved
			September	October	By Arrest	By Other Action	
Assault.....	2	0	2	2	2	0	2 (a)
Breaking and Entering.....	1	1	1	0	0	0	0
Burglary.....	1	0	0	1	0	0	u
Larceny (Except Auto & Bike)							
Over \$50.00.....	2	0	11	2	1	1	1 u
Under \$50.00.....	18	0	17	18	0	4	2 (b)
Larceny by Check.....	1	0	4	1	0	0	u (c)
Forgery.....	1	0	0	1	0	1	1 (c)
Bike Theft.....	18	0	15	18	18	18	u
Destruction of Personal Property.....	3	0	2	3	0	0	u
Destruction of Government Property....	4	0	2	4	0	0	u
Loss or Theft of Gov't. Property.....	2	0	2	2	0	1	1 (d)
Investigation.....	2	0	8	2	2	2	2 (e)
Attempted Suicide.....	0	0	1	0	0	0	0
Disorderly Conduct.....	0	0	1	0	0	0	0
Drunkenness.....	8	0	2	8	8	0	8 (f)
Disturbance.....	9	0	13	9	0	6	8 (f)
Public Nuisance.....	0	0	2	0	0	0	0 (g)
Missing Persons.....	2	0	5	2	0	2	2 (g)
Offense Against Family & Children....	2	0	7	2	0	2	2
Prowlers.....	6	4	3	2	0	0	u
Sodomy.....	0	0	1	0	0	0	0
Co-Habitation.....	1	0	0	1	1	0	1
Indecent Exposure.....	2	0	1	2	1	1	2 (h)
Vandalism.....	17	0	6	17	0	8	15 (i)
Malicious Mischief.....	8	0	4	8	0	5	9 (j)
Pickup for Outside Agency.....	1	0	1	1	1	0	1
Unattended Death.....	0	0	1	0	0	0	0
Auto Theft.....	1	0	1	1	0	1	3 (k)
TOTAL.....	112	5	113	107	13	52	57

(Continued on Page Two)

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COMMUNITY PATROL DIVISION

CRIME PREVENTION SECTION--MONTHLY REPORT, OCTOBER, 1949

- (a) 1 Case Perp. by 1 Juv. Age 20.
- (b) 1 Case Perp. by 1 Juv. Age 10.
1 Case Perp. by 1 Juv. Age 16.
- (c) 1 Case Perp. by 1 Juv. Age 16.
- (d) 1 Case Perp. by 3 Juv. Ages 16, 17, & 17.
- (e) 1 Case Perp. by 1 Juv. Age 15.
- (f) 1 Case Perp. by 1 Juv. Age 14.
1 Case Perp. by 2 Juv. Ages 4 & 5.
1 Case Perp. by 1 Juv. Age 10.
1 Case Perp. by 1 Juv. Age 12.
1 Case Perp. by 1 Juv. Age 14.
- (g) 1 Case Perp. by 2 Juv. Ages 10.
- (h) 1 Case Perp. by 2 Juv. Ages 10 & 7.
- (i) 1 Case Perp. by 2 Juv. Ages 14.
1 Case Perp. by 2 Juv. Ages 10, 13 & 14.
1 Case Perp. by 3 Juv. Ages 10 & 7.
1 Case Perp. by 2 Juv. Ages 10 & 7.
1 Case Perp. by 2 Juv. Ages 10 & 7.
1 Case Perp. by 2 Juv. Ages 15 & 16.
1 Case Perp. by 2 Juv. Ages 10 & 11.
- (j) 1 Case Perp. by 2 Juv. Ages 7.
1 Case Perp. by 1 Juv. Age 14.
1 Case Perp. by 3 Juv. Ages 17, 17 & 18.
- (k) 1 Case Perp. by 3 Juv. Ages 17, 17 & 18.

Value of Property Recovered \$6,443.25 (18 bikes)
 No Colored Persons Involved.
 u Represents Unknown.

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 (Jan-June 1948)	One Month Average	Six Months (Jan-June 1948)	September 1949	October 1949
Murder.....	181	.031	0	0	0
Robbery.....	3.47	.58	1.00	0	0
Aggravated Assault...	1.75	.29	6.66	1.33	1.33
Burglary.....	35.69	5.95	4.63	.66	.66
Larceny.....	127.06	21.18	47.16	30.00	25.33
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 (Jan-June 1948)	One Month Average	Six Months (Jan-June 1948)	September 1949	October 1949
Murder.....	.140	.023	0	0	0
Robbery.....	4.90	.82	0	0	0
Aggravated Assault..	.78	.13	6.66	1.33	1.33
Burglary.....	36.91	6.15	4.63	.66	.66
Larceny.....	92.22	15.37	47.16	30.00	25.33
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 (Jan-June 1948)	Six Months (Jan-June 1948)	September 1949	October 1949
Robbery.....	55.5	0	0	0
Burglary.....	59.9	8%	100%	0
Larceny.....	45.2	13%	13%	5%
Auto Theft.....	71.6	0	100%	100%

Note: Statistics of Juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

October, 1949

COMMUNITY DIVISIONS

COMMUNITY - ACTIVITIES DIVISION
October

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 October 31, 1949

Administration	6
Clerical	18
Principals & Supervisors	16
Teachers	245
Health Audiometer	1
Building Custodians	51
Cooks	29
Nursery School & Ex. Day Care	10
Bus Drivers	2
	<u>378</u>

CLUBS AND ORGANIZATIONS

On October 10, 1949, the regular monthly meeting of the Recreation Advisory Committee was held. The Committee recommended for approval, subject to proper security clearances, the Joint Council of Technical Societies. The minutes of the September 20, 1949, meeting were approved October 13, 1949, by the Atomic Energy Commission. Organizations receiving formal approval include: Key Club, Columbia Duplicate Bridge Club, Disabled American Veterans Auxiliary, Beta Sigma Phi - XI Lambda Chapter, Royal Order of Amaranth (Masonic) Artemisia Court, Zadok Council of Royal & Select Masters, Rotary Club, and Orthopedic Guild.

As of October 31, 1949, organizational personnel included:

Villagers, Inc.	7
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
High Spot Club	1

Community - Activities Division

Red Cross	3
Castle Club	1
Post Office	50
Veterans Administration	2
Girl Scouts	2
Masonic Lodge	1
	<hr/>
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National Fire Prevention Week was sponsored from October 9 through October 15, by the Greater Richland Chamber of Commerce in conjunction with the Richland Fire and Safety Divisions. The program was community wide with Richland Schools holding contests, assemblies, fire drills, and general clean-up activities. A cup was presented by the Community-Activities Division to the school presenting the best over-all fire prevention program for the week. Boy Scouts, Girl Scouts, and Camp Fire Girls also participated in the activities of the week. Toastmasters Club formed a speakers bureau to provide prepared talks before school groups and civic organizations. The Fire Division presented many demonstrations on the proper use of fire extinguishers and turning in alarms.

A Ham and Bacon Shoot was held on Sunday, October 2, at the Richland Rod and Gun Club Range. Over 50 hunting enthusiasts participated in this pre-hunting practice shoot.

On Tuesday, October 4, Brownie Troop #44 held its first meeting. This troop will be for the second grade students at the Jefferson Grade School.

The newly formed Model Railroad Club, with a charter membership of 43, held its first meeting in Richland on Monday, October 3.

An outstanding musical program for contributors to the Community Chest was presented in Carmichael Junior High School Auditorium on Saturday, October 15, before a near capacity house. The program consisted of many featured solists, duets, and quartets. Admission to the program was the display of a red feather or further contribution to the chest drive.

The Richland Council of Beta Sigma Phi netted over \$100.00 for the local Community Chest Drive. This fund was obtained in sponsoring a Red Feather Dance on Monday, October 10, with services donated by the Tri-City Musicians Association and the Castle Club.

Only 63.4% of the Community Chest quota was met at the close of the drive on October 15. An extension of the drive was voted upon in an emergency meeting held on Monday, October 17. It was announced on October 27, that 71% of the quota had been reached through this date.

On October 25, the Spalding Grade School PTA presented a carnival in the Spalding Grade School. Prizes were given to children for the best costumes entered in the parade. Each classroom participated in the carnival. It was well attended by the village residents.

Community - Activities Division

On October 4, 82 villagers donated blood to the Red Cross Blood Bank on its October visit to Richland.

Arrangements were made by the Community-Activities Division to have the Fire Department demonstrate the use of extinguishers and fire alarm systems at the Youth Council Handicraft class held on October 4.

All churches, clubs and organizations using government-owned buildings or privately-owned buildings were contacted by the Community-Activities Division to determine the number of hours of electrical consumption in their respective buildings. This information was compiled and forwarded to the Community - Public Works Division, Engineering Section to be used as a basis in computing the monthly electrical charge. This survey was in keeping with the newly established rental policies which become effective November 1.

A work order was issued by the Community-Activities Division, upon the request of the Safety and Fire Division in conjunction with the Richland Fire Prevention Week Program, to install proper fire exits in the Richland American Legion Building.

On October 13, a news released was issued by the Community-Activities Division regarding the assignment of government-owned land as use for pasture land. This policy was established to control the location of pasture for livestock. The City limits were defined as follows: On the east, the Columbia River and Bradley Road; on the south, Lyman Road; on the west By-pass Highway to Van Giesen. On the north Van Giesen Street to Kadlec Road, Kadlec Road north to McCutchen Road, east to Thayer Drive then north of Thayer Drive to McMurray Road, east on McMurray Road to George Washington Way, north on George Washington Way to Newcomer Road and east on Newcomer Road to the Columbia River. All pasture land assigned will be outside of the above mentioned boundaries. Those presently occupying pasture land within the city limits have been requested to select another site. The fee for the land will be \$.50 per acre per year with a \$1.00 minimum charge.

On October 19, representatives of the Marine Corp League and the Community - Activities Division inspected Tract House O-1204 located on George Washington Way near the Coordinate Club. This inspection was made for the purpose of determining whether the building would be suitable for the Marine Corp League club house. The League expressed considerable interest in obtaining the house for this purpose.

CHURCHES

The community wide clothing drive conducted by the Protestant Churches of Richland on Saturday, October 15, 1949, collected an estimated 7200 pounds of clothing. Fifty-two hundred pounds of this clothing in good repair were sent to the Church World Service for distribution in the war devastated areas of Europe and Asia. Two thousand pounds of clothing needing renovations were shipped to Good Will Industries in Spokane. The Community-Activities Division assisted in obtaining vehicles and storage facilities for this drive.

Community - Activities Division

The following is a tabulation of full-time paid church personnel, as of October 31, 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
Mo. Synod Lutheran (Redeemer)	1	1	2
National Lutheran	1	2	3
Nazarene	1	0	1
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
	<u>18</u>	<u>7</u>	<u>25</u>

The Free Methodist Church submitted to the Community-Activities Division three choices for their church site. These locations and their descriptions were forwarded to the Town Planning Board Committee for consideration.

On October 26, blueprints and specifications of the Church of Jesus Christ of Latter Day Saints, located on the corner of Jadwin and Goethals, were submitted to the Community-Activities Division which in turn were forwarded to the Community-Public Works Division, Engineering Section for approval.

Temporary power, water, and sewage lines have been installed to the property line of the Reorganized Church of Jesus Christ of Latter Day Saints located on the corner of Swift Boulevard and Long Avenue. The cement block foundation on this building is nearly complete.

The Nazarene Church located on the corner of Humphries and Wright have completed approximately 35% of their interior work. The church is planning on holding Thanksgiving Service in the Sanctuary.

The Northwest United Protestant Church site located on Sacramento Boulevard adjacent to the Spalding Grade School was approved by the Atomic Energy Commission on October 31.

The following is a list of church organizations constructing their own buildings:

Community - Activities Division

<u>CHURCH</u>	<u>DATE STARTED</u>	<u>ESTIMATED PERCENT COMPLETED</u>
Nazarene Church	April 12, 1949	95%
Latter Day Saints Church	February 5, 1949	45%
Reorganized Latter Day Saints	August 22, 1949	5%
Southside United Protestant	November 5, 1948	98%
Richland Baptist	November 27, 1948	98%

PARKS AND RECREATION

Recreation

During the month the Recreation Section initiated several new athletic programs. These are under the supervision of a Recreation Section employee with volunteer instructors assisting.

On October 20, the weight lifting class was started with 26 teen-agers and 17 adults participating. This group meets Monday, Wednesday, and Thursday evenings in the Columbia High School boys' gymnasium.

A fencing program was started October 26, in the Spalding Grade School recreation room. Twenty persons have enrolled in this program to be held each Thursday night.

On October 31, the first of a series of open recreation programs was inaugurated. These will be held throughout the fall and winter in the Spalding Grade School gymnasium. The schedule is as follows: Monday - womens recreation, Tuesday - "Co-Rec", Thursday - mens recreation.

Assistance was given many groups by Recreation Section personnel in the planning of recreation programs. These included the Richland Lions Club - sponsors of the Halloween program, the West Side United Protestant Church, Volleyball League, Womens Basketball League, Lewis & Clark PTA (equipment for playgrounds), and youth organizations.

Park Development

On October 18, the Town Planning Board reviewed the revised Richland park system and recommended that Management approve the allocation of areas defined for development purposes.

During the month arrangements were completed for winterizing outdoor recreation facilities. This includes repair and storage of equipment.

Due to the construction of the dike the Archery Range located east of the Desert Inn was removed. The Range will be re-installed at completion of the dike construction in this area.

Community - Activities Division

At the request of the Richland Kiwanis Club the assignment of the tract of land known as Camp Kiwa has been cancelled and the area has been cleared. This action was taken due to building damage resulting from the flood and vandalism to buildings and equipment.

Community Services

Parades - Arrangements were completed for the El Katif Shriners Parade held October 1, and the Columbia Basin Shrine Parade held on October 8. Arrangements were also made for the Columbia High School Homecoming Parade held on October 20. Fourteen government vehicles were obtained for use as floats in the Homecoming Parade. A short parade route was established for the Costume Parade held on October 31, for the Halloween program sponsored by the Lions Club.

Tours - School busses and drives were obtained for the purpose of tours of Richland for out of town visitors on October 8 ("Hello Neighbor Day" sponsored by the Greater Chamber of Commerce of Richland) and on October 22 (the Post Office Supervision Conference held in Richland.)

Elections - Ten voting booths were provided Patrol for the union election held on October 11 and 12. These booths were picked up and returned to the County Courthouse at Prosser.

Miscellaneous - Microphones and amplifiers were provided the Boy Scouts for their fall outing held in Riverside Park on October 28, and to the Richland Lions Club for their bon fire held at the Columbia High School recreation area on October 31.

MAJOR ACTIVITIES FOR THE MONTH

October	1	"El Katif" Shrine Parade	Village
	2	Ham & Bacon Shoot	Rod & Gun Club
	8	"Hello Neighbor Day"	Village
	8	Columbia Basin Shrine Benefit Football Game	Bomber Bowl
	9	All Junior Horse Show	Riders Club
	10	Red Feather Dance	Castle Club
	9 -15	National Fire Prevention Week	Village
	15	Communitith Chest Concert	Carmichael Jr. Hi
	20	Pep Rally	Columbia Hi. Sch.
	21	Homecoming Celebration	Bomber Bowl
	25	Carnival	Spalding Gr. Sch.
	31	Halloween Party	Village
	31	Lions Club Benefit Football Game	Bomber Bowl

The number and types of organizations presently serviced by the Community - Activities Division include 14 business and professional clubs, 24 churches and church organizations, 5 civic organizations, 19 fraternal organizations, 8 music and art associations, 10 private instructors, 47 recreation and hobby groups, 8 schools and 8 parent teachers associations, 2 social clubs and organizations, 12 veteran and military organizations, 6 welfare organizations, 19 Boy Scout groups, 15 Camp Fire Girl groups, 42 Girl Scout troops, 9 other youth groups, and 11 miscellaneous organizations.

Community - Activities Division

Effective November 1, 1949, the Rod and Gun Club will discontinue its use of Tract K-728. Activities of the organization will limited to the outdoor range.

On October 31, 1949, arrangements were completed for the disconnecting of utilities to the Masonic building on November 7, 1949, in order to permit continuation of the dike construction. The November 7, date was agreed upon by authorized representatives of the U. S. Engineer Corps, Atomic Energy Commission, General Electric Manufacturing, General Electric Community, and the Masonic Club. Meetings of the Club and lodge organizations will be scheduled in the several school buildings.

GENERAL ELECTRIC COMPANY
HANFORD WORKS
COMMUNITY ACCOUNTING DIVISION

MONTHLY REPORT FOR OCTOBER, 1949

ORGANIZATION

Employees-Beginning of Month	28	Exempt	5	Male	9
Employees Terminated or Transferred	3	Non-Exempt	<u>22</u>	Female	<u>18</u>
Transfers In	1	Total	<u>27</u>	Total	<u>27</u>
New hire	<u>1</u>				
	<u>27</u>				

The Assistant Cost Supervisor was transferred as Administrative Assistant to the Public Works Division and was replaced by the Supervisor of the Community Accounts Payable Group, who was made available by placing Accounts Payable work under the Supervisor of the General Accounts Section. The Secretary to the Assistant Community Accountant was transferred as Secretary to the Public Works Division Superintendent and was replaced by transferring an employee from the Services Division. An Accounts Receivable employee terminated voluntarily to go to a different climate in an attempt to improve her health. She was not replaced.

All but one employee have applied for Group Health Insurance under the new plan.

ACCOUNTS RECEIVABLE

Rents

	<u>October</u>	<u>September</u>
House Leases Processed		
New Leases	146	212
Modifications	14	10
Cancellations	140	168
Total Active House Leases	5,695	5,689

Dormitory		
New Assignments	155	160
Removals	168	184
Total Occupancy	948	961

Rental Revenue was as follows:	<u>October</u>	<u>September</u>
Equipment	26.35	23.18
*Houses	254,482.82	256,084.84
*Dormitories	13,072.49	13,768.54
*Facilities	<u>38,168.27</u>	<u>40,181.99</u>
Total	\$305,749.93	\$310,058.55

* Includes utilities which are collected as a part of the rental.

There are eight facilities still retaining equipment on a rental basis.

Community Accounting Division

Telephone

	<u>October</u>	<u>September</u>
Number of work orders processed	176	128
Number of working phones	2,655	2,620
Revenue including services	\$5,539.90	\$5,362.16

The final toll tickets to be handled by the Community are now being posted and will be included on the December statements which will record the new rental rate increases which were approved by the AEC effective December 1, 1949. All future toll tickets will be posted by the Interstate Telephone Co. Spokane Office, and those statements will be sent to us to be included with each month's rental invoices.

Miscellaneous

	<u>October</u>	<u>September</u>
Invoices issued	262	218
Miscellaneous revenue	\$2,475.65	\$1,101.35

The miscellaneous invoices are continually increasing in volume each month. Most of this is accounted for by the increase in responsibility of tenants for routine maintenance of residences. Most of the amounts involved are small and because they all must be collected in cash, (no payroll deductions are permitted for these items) the open receivable balance requires constant checking:

The following building Permits were issued in October:

<u>Lessee</u>	<u>Amount</u>
A. R. Nieman	\$ 82.35
Fred Oringdulph	44.95
E. Erickson	165.05
A. R. Nieman	105.50
National Bank of Commerce	196.20
Total October Revenue	594.05
Previously Reported	3,736.61
Total to date	\$4,330.66

Government-owned equipment located in the respective facilities was sold during October at the following agreed upon price:

Northwestern Fuel Co.	\$ 2,730.31
The Mart	10,091.91
Total October Sales	12,822.22
Previous Sales	92,267.75
Total to date	\$105,089.97

Community Accounting Division

Twenty-seven collection letters were written during the month resulting in the collection of twelve accounts amounting to \$312.45.

Bad accounts were written-off during the month of October as follows:

Amounts over \$1.00 - 5 Accounts totaling	\$58.58
Minor amounts - 18 Accounts	1.80
Total written-off for October	\$60.38

ACCOUNTS PAYABLE

Statistics

	<u>October</u>	<u>September</u>
Accounts Payable Vouchers Processed	251	251
Freight Bills Processed	10	14
Purchase Orders Received	45	47
Net Amount of Purchase Orders	\$ 4,071	\$ 4,749
Receiving Reports Received	61	61
Total Net Amount Disbursed	\$34,371	\$28,379

By coincidence, the payable vouchers processed as well as the receiving reports received were identical in both September and October. It appears that material purchases will vary very little from month to month.

One credit item in Accounts Payable which has been open since January has been transferred to the receivable ledger to permit the item it adjusted to be billed to the Government. This was the only item remaining to be billed under the 'old' financing procedure.

The new subcontracts were received during October. One involved the Aerial Survey awarded to Abrams Aerial Survey Corporation, and the other was awarded to Bailey Plumbing and Heating Company covering the extension of the Central steam line to the multiple apartment units.

A summary of the active subcontracts is shown below:

Subcontractor	Sub-Contract Number	Amount Awarded	Paid this Month	Total Paid	Amount Retained
Frederickson, Dr. J. L.	-----	* 857.50	280.00	857.50	---0---
Newland Cafeteria	-----	* 5.58	5.58	5.58	---0---
Richland Maintenance Co.	-----	*42,814.96	7,070.20	42,814.96	---0---
West Coast Painters Co.	G-219	58,526.79	7,929.91	26,570.88	2,926.31
Abrams Aerial Survey Corp.	G-268	14,200.41	0	0	---0---
Bailey Plumbing & Heating Co.	G-275	3,071.00	0	0	---0---
		<u>119,484.24</u>	<u>15,285.69</u>	<u>70,248.92</u>	<u>2,926.31</u>

* Total amount of contract will be total of estimates as submitted.

Community Accounting Division

The Community Division estimate of Cash disbursements for November amounted to \$57,900, and estimated cash receipts were \$88,500.

COST

Reports

The September Operating report was completed and distributed on October 18, 1949.

An additional revision will be made in the report inasmuch as costs involving schools will be divorced from Civic Activities and shown on a separate section report.

The Comptroller's Appropriation and Project Report for September was issued on October 19, 1949.

A more detailed explanation of variances between cost items from month to month will be set forth in the Monthly Cost Variance Report.

Budget

The Mid-Year Review of the 1950 Operating and Construction Budget is now underway and is expected to be completed by November 15, 1949.

Estimated assessments by the Community have been prepared and forwarded to the respective Divisions.

An analysis of the Inventory Accounts is underway in order to provide the General Division for consolidation purposes the expected activity in these accounts for the balance of the current fiscal year.

Work Orders

A summary comparison of service order statistics for the last two months is listed for information:

	<u>Craft</u>	<u>Service Orders</u>		<u>September</u>	<u>October</u>
		<u>Sept.</u>	<u>Oct.</u>		
1.	Plumbing	631	580	\$1,759.85	\$1,378.20
2.	Electrical	1,424	1,604	3,345.86	3,549.48
3.	Heating & Vent.	A	596	---0---	1,595.81
4.	Glazing	109	91	440.72	407.59
5.	Lock and Key	166	196	487.87	661.50
6.	Carpentry	218	216	694.05	871.21
9.	Sheet Metal	B	25	---0---	176.30
		<u>2,548</u>	<u>3,308</u>	<u>\$6,928.35</u>	<u>\$8,640.09</u>

Community Accounting Division

- A. This craft was discontinued the first portion of August and resumed in October.
- B. This craft was initiated October 1st to prefabricate and install smoke pipes.

Statistics covering regular work orders:

	<u>Sept.</u>	<u>Oct.</u>	<u>Net Change</u>
Active Routine	479	483	74
Active Normal	735	1,500	765
	<u>1,214</u>	<u>1,983</u>	<u>769</u>
Work orders Received	711	1,081	
Work Orders Completed	<u>654</u>	<u>312</u> *	
	57	769	

* Work Orders closed out on 10/21 instead of 10/25 which would normally have been the closing date.

GENERAL LEDGER

The September trial balance and supporting financial statements were forwarded to the General Division for consolidation on October 17, 1949.

Statistics

	<u>No.</u>	<u>Amount</u>
Second Class Invoices Issued	20	\$ 69,527.96 Cr.
Second Class Invoice Received	72	\$161,530.18


DESIGN DIVISIONOCTOBER, 1949**DECLASSIFIED**PERSONNELTotal Number of Employees on Payroll

	<u>Beginning of Month</u>	<u>End of Month</u>	<u>Net Increase or Decrease</u>
Design Division	252	254	7 2
On Loan to Design Division	<u>17</u>	<u>18</u>	1 1
	269	272	3 3

INVENTIONS OR DISCOVERIES

No inventions or discoveries were reported for the month of October.

PILE AREA "H" - PROJECT C-165-A

All of the construction forces were removed from the 100-H Area on October 21, 1949, which is the date the area was accepted by the Manufacturing Division. The unfinished items are being completed by the Operations Division. The as-built drawings are expected to be completed by Giffels and Vallet by December 1, 1949, and the General Electric as-built drawings will be completed by January 1, 1950.

REPLACEMENT PILE "DR" - PROJECT C-206-A

All as-built drawings have been completed and a final work order was issued to the Operating Division to cover the work required to complete this project.

PILE AREA "G" - PROJECT C-300Project Proposal

Approval was received from the A.E.C. for Phase II of the Pile Area "G" project proposal. This approval is contained in directive HW 104, Modification 2, dated October 31, 1949.

Metallurgical Program

The Division Metallurgist visited many A.E.C. sites and Industrial Laboratories to determine where assistance could be obtained in preparing and investigating the properties of special alloys. The results of this trip are summarized in HDC 1490.

1213189

DECLASSIFIEDMetallurgical Program - (Continued)

The corrosion test program has been started in conjunction with the Technical Division. This program at present is centered about nine different aluminum alloys which might be used in process tubes.

A total of 225 grams of 98% pure gadolinium oxide was received and will be used in the alloy development program. The General Electric Research Laboratory and the Remington Arms Company have both agreed to prepare small experimental quantities of sheet rod materials alloyed with boron and gadolinium.

Heat Transfer Program

The procurement of the bids for the experimental equipment was delayed through a major portion of the month by the lack of A.E.C. approval of the project proposal.

The design of the test arrangement in Building 189-D is proceeding satisfactorily.

Third Safety System

The design of the ball 3-X System is progressing satisfactorily. A test request was prepared to cover the experimental phase of this program. Another engineer was assigned to the Control group and his immediate responsibility is the design of a liquid third safety fluid system which will be injected into the special process tubes which will be used for irradiation of the materials other than plutonium.

Vertical Sheet Rod Test

Phase II of the test program was started. This part of the program includes the use of a close fitting step plug. The preliminary tests indicated that the time required for the sheet rod to drop with the step plug in place and with a gap of 0.020" between the plug and each side of the sheet rod was approximately the same as that without the sheet rod. However, appreciable scoring of the step plug occurred and upon examination it was found that the sheet rod was bowed approximately 0.040". The sheet rod is being straightened and the step plug guiding surfaces are being chrome plated and ground.

The test will be resumed on approximately November 14, 1949.

Recirculation Water System

The schematic designs for the recirculation test system have been completed. The design lay-out drawings of the test equipment are being prepared.

Automatic Charging and Discharging Equipment

A series of meetings were held to review the design and proposed operating procedures of the equipment. It was decided to test the slug ejector counter separately.

1213190

DECLASSIFIEDRadial Creep Tests of Aluminum Process Tubes

Strain data have been taken for a period of approximately five weeks with the tube sections immersed in an oil bath held at 200° F. Those data were taken on four tubes, two of which had an internal pressure of 400 p.s.i. and two were held at 600 p.s.i. The total diametral expansion to date is 0.0004" for the 400 p.s.i. tubes and 0.0008" for 600 p.s.i. tubes. The tests are continuing.

Report by Power, Water, and Mechanical Group

On October 13, 1949, a cost estimate for an experimental recirculation system, as prepared by the Estimating Section, was transmitted to the 100 Area Section. This cost estimate was made for an all stainless steel system to operate at high pressures, with 2000 gallons storage tank capacity and full retention for a period of 40 minutes. Costs for distillation and vacuum deaerator units were included in the estimates submitted.

Work by the Power, Water and Mechanical Group on all schematic drawings and all equipment layout drawings for the experimental recirculation system, was terminated at the request of the 100 Area Section on October 19, 1949. All such drawings prepared by the subject group were submitted to the 100 Area Section as of that date.

Investigations at the request of the 100 Area Section, are being continued by the Power, Water and Mechanical Group on the subject of the control of slime, algae and other growths in the experimental recirculation system. These investigations are to be directed particularly to the use of two possible systems of control. One system to be studied, is the application of ultra-violet light to the problem of slime control. The other system to be studied is one in which the use of pressure filters as a method of control of the unwanted growths is to be explored.

As requested by the 100 Area Section, Purchase Requisition No. D-15972, with attached drawing No. SP-2283, was held by the Power, Water and Mechanical Group until notification on October 26, 1949, that this material was to be returned to the 100 Area Section. This purchase requisition, as written, describes a two unit, stainless steel, retention tank to operate in an experimental recirculation system at atmospheric pressure, to give a full 40 minute retention period.

100 DR WATER PLANT - PROJECT C-342

The design criteria for the DR Water Plant were discussed with Charles T. Main representatives, and several additional items of information were supplied.

A preliminary discussion was held with the Atkinson Jones engineers assigned to the temporary construction facilities for the project with reference to supplying construction power and communication service.

DECLASSIFIED100 DR WATER PLANT - PROJECT C-342 - (Continued)

The rearrangement of the equipment in the primary substation yard was studied and a review was made of a recommendation report submitted by the Electrical Division on ways and means of supplying power to the 100-D Area when certain parts of the primary substation are under repair or maintenance. Preliminary plans were developed for the relocation of the 230 KV transmission lines adjacent to the primary station.

Field trips were made by Power, Water and Mechanical Group personnel with representatives of the architect-engineer to assist the latter in accumulating field experience in connection with work on the 100-DR Water Plant.

The Power, Water and Mechanical Group has been requested by the 100 Area Section to be prepared to furnish, when requested, the necessary information for the installation of the water service facilities which will be required during the construction of the 100-DR Water Plant.

234-5 BUILDING PROGRAM - PROJECT C-198

The work for Phase II and Phase III has been grouped into eleven units for submitting justification letters to the A.E.C. At the present date approval has been returned on Temporary Construction and Alteration to Coal Conveyor, 284-W. Justification for the Crucible Shop has been submitted and a reply has been received. Justification for the Chemical Development Laboratory and the completion of Rooms 146 and 147 in the Analytical Laboratory were approved by the Separations Committee for transmittal to the A.E.C.

Meetings with Schenectady personnel were held in Richland to discuss the status of the 234 Project, cost control methods being used, the 45 proposed changes in the remote mechanical line, and the responsibility for installation drawings. The preparation of installation drawings is to be the responsibility of the 234-5 Design Group at Hanford.

A liaison man from the "S" Division has been assigned to work in Schenectady. He will be responsible for the coordination of information between Hanford and Schenectady and will keep Hanford Works informed of the status of the work on the remote mechanical line.

All Richland 234-5 Design prints, in addition to Design approval, will be approved by the "S" Division in all cases and the Technical Division unless they have designated beforehand that their approval is not required.

Work orders were issued to Minor Construction to cover all work on Temporary Construction, Phase II.

Work orders for 16 of the 33 items which have been outlined as additional items to complete Phase I have been issued.

Work is progressing on re-estimating the design cost for the installation of the RM Line.

DECLASSIFIED234-5 BUILDING PROGRAM - PROJECT C-198 - (Continued)

The project engineer in charge visited Schenectady during the week of October 24 - 28 to review their methods of cost control, to arrange for their sending additional information to Hanford on which to base the installation cost estimate, and to obtain general information regarding the Schenectady work.

At the request of the 234-5 Section, work was started October 17, 1949, by the Power, Water and Mechanical Group on the preparation of a report describing the status of the balancing work on the ventilation system of the subject building. It is intended that this report will not only include the balancing work which has already been done, but that it will incorporate a study of the work which will be necessary in order that the ventilation system may be turned over to Power Division personnel for routine operation and maintenance. It is intended to include in the report, recommendations and plans for accomplishing the work to be done, together with cost estimates of the work as recommended.

Design drawings and a work order for an improved all weather atmospheric reference were issued by the Power, Water and Mechanical Group on schedule prior to October 21, 1949.

RAIA - PROJECT C-343

The following design studies are at or nearing completion:

- a. Adequacy of installed dissolvers for Rala process.
- b. Purification step precipitate separation method.
- c. Materials for the fabrication of extraction step equipment.

Engineering flow sketch studies are under way on parts of the purification step and dissolving step. Personnel have been assigned for layout and general engineering work.

A quotation has been received from the General Engineering and Consulting Laboratory on the design, development, and construction of an electrolytic cell for the Rala process. Further negotiation is under way with the General Engineering and Consulting Laboratory on this subject.

ENLARGING 251 SUBSTATION - PROJECT C-295

An official preliminary inspection of the construction work at the substation site assigned to the Atkinson Jones Company was made on October 28. The final inspection is scheduled for November 4. The portion of the work at the substation assigned to the Atkinson Jones Company is substantially completed.

Design work on the extension of the 13.8 KV lines in the 200 West Area to the site of the Redox Main Plant was begun during the month and is now 75% complete.


DECLASSIFIEDDEVELOPMENT OF NEW AREAS FOR COMMERCIAL FACILITIES - PROJECT C-288

Liaison work for Architect-Engineer, Division Engineer of D&C, Public Works and AEC on the plans for these projects has continued. The revised project proposal defining the new scope of work has been prepared and is awaiting cost information before submitting for approval.

DESIGN OF RECORDS DEPOSITORY - PROJECT MC-964

Final Preliminary Plans and Specifications were received from the Architect on October 19, 1949. These were received by all concerned and the combined comments were transmitted by teletype on October 24, 1949. Final plans and specifications were promised from the Architect two weeks from date of notice to proceed and are expected in Richland about November 10, 1949.

PROJECT & RELATED PERSONNEL
OCTOBER - 1949

DECLASSIFIED

	9-30-49	10-31-49
<u>GOVERNMENT EMPLOYEES</u>		
Civilian Personnel - ATOMIC ENERGY COMMISSION	330	338
Civilian Personnel - G.A.O.	8	8
Total	338	346
<u>RICHLAND VILLAGE PERSONNEL</u>		
Commercial Facilities (Includes No. Richland)	960	988
Organizations, Clubs, Etc.,	79	74
Schools	376	378
Churches	25	25
Total	1440	1465
<u>CONSTRUCTION SUB-CONTRACTORS</u>		
Atkinson & Jones	983	539
Newberry Neon	137	79
Urban, Smyth, Warren Co.,	254	53
Kellex Corp.,	327	337
Giffels & Vallet, Inc.,	29	19
Morrison-Knudsen Co.,	1	1
National Carbon Co.,	37	37
J. A. Terteling & Son	225	219
Troxell	-	9
E. J. Bartells Co.,	81	7
Howard P. Foley	36	20
Charles T. Main, Inc.,	-	147
No. Electric Mfg. Co.,	10	6
Newport - Kern - Kibbe	19	-
Great Lakes Carbon	134	134
Graham, Anderson, Probst & White Inc., &		
J. Gordon Turnbull	36	36
McCorkle Const. Co.,	58	53
Dayley Bros.	28	18
Edmund P. Erwen	15	12
Best	-	4
Bailey Plumbing & Heating	20	10
Vail	-	3
J. P. Head	2	10
Selden's.	-	3
John H. Foster	3	-
Charles Barnes	-	7
TOTAL	2435	1763
GENERAL ELECTRIC PERSONNEL	7519	7512
GRAND TOTAL	11732	11086