PRIVACY ACT MATERIAL REMOVED

727782 HW 14596-DEL

[redacted]

DECLASSIFIED

28456

[redacted]

REPOSITORY PNL
COLLECTION Atmospheric Releases
BOX No. N/A
FOLDER N/A

1 - H. A. Winne
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
#16 - 700 File
#17 - 700 File

Classification Cancelled And Changed To
DECLASSIFIED
WITH DELETIONS
By Authority of WA Snyder 6-11-91
RLO-CG-4
By J E Savely 8-6-91
Verified By TL [illegible] 8-9-91

October 18, 1949

CLASSIFICATION REVIEW FOR DECLASSIFICATION BUT LEFT UNCHANGED
By [illegible]
Date 5-2-73
U.S. AEC Division of Classification

HANFORD WORKS MONTHLY REPORT

SEPTEMBER 1949

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GENERAL SUMMARY

SEPTEMBER, 1949

Manufacturing Divisions

A total of 60 tons of metal was discharged from B, D, and F piles at an average concentration of 396 MWD/ton. The operating efficiency was 87.7 percent; and the operating levels remained at 275 MW at B and F piles and 305 MW at D pile.

The 105-H Pile Building was accepted from Construction on September 28, with certain exceptions, and preparations are being made for its activation. The remainder of the area, including the water and power facilities, is not yet complete, but transfer with specific exceptions is anticipated during October.

A total of 69 tons of acceptable slugs was canned at a yield of 91.1 percent. The machining yield was 92.1 percent. The melt plant produced 20 tons at a yield of 68.8 percent. ? about 72 - 12

Fifty-three batches were started in the Canyon Building, with 51 being processed through the Concentration Buildings and 50 through the Isolation Building. The average purity of completed batches at Isolation was 98.5 percent.

Effective September 19, 1949, the Expansion Problems Section was dissolved. The remaining assignments for the Section were returned to the respective using Divisions for continuation as necessary. The general policies and procedures established by the Section will be continued.

The Project Engineering Division was reorganized effective September 15, 1949 to comprise a Design, a Control, and a Minor Construction Division. This centralization of services, authority, and responsibility ensures more effective designing, planning, and completion of plant and project facilities. Each division is headed by a Superintendent: S. F. Schure, Design; J. W. Brands, Control; and J. M. Heffner, Minor Construction, under J. S. McMahon.

Technical Divisions

No increase in elevation of the center of the roof and no significant outward motion of the top center of the side shields were observed at any of the piles during the month. However, tube bowing traverses demonstrate that graphite expansion is continuing in the cooler regions of the piles.

The early addition of Freon during graphite purification is recommended for any future purification work.

A series of technical tests during start-up of the H Pile in October have been formulated. Of particular interest is the measurement of the reactivity temperature coefficients of a dry Hanford lattice.

Corrosion pits have been detected beneath deposits of corrosion products inside of process tubes. Further study is in progress.

Nine extraction runs were made on Line 3 of the P-10 Project, and Line 4 was calibrated and ready for operation at month end. Slugs with seven months exposure were extracted experimentally without difficulty.

A carefully planned study of all tank calibrations, sampling methods, and basis assays is being carried out in all of the Separations Plants in an effort to improve material balance accountability. Production testing of cheaper grades of hydrofluoric acid has been essentially completed with satisfactory results. Plant assistance activities in Purification and Fabrication succeeded in correcting off-standard conditions in "wet chemistry" operations. Considerable attention has been devoted to ironing out operating difficulties in Hoods 17, 19, 22, and 26 in Building 234-5.

Additional Redox development studies in packed column operation have extended performance data for 1-inch Raschig ring packing and established preliminary operating data for the solvent extraction treatment of simulated recovered metal waste feeds. Installation of the new canyon ventilation system in Building 321 is approximately 95% complete. Installation of test equipment for waste metal feed preparation studies is approximately 50% complete. Life-testing of several possible "hot" pumps has been successfully continued.

In the research laboratory, the sodium diuranate waste metal feed preparation process has been tested on a 20 ml. scale with current metal waste, producing a 270-fold reduction in phosphate content. A near-satisfactory precipitation method of uranium recovery from off-standard Redox waste has been developed.

The behavior of various ruthenium species during ozoniation has been studied further as have Filtrol scavenging of zirconium and columbium, hexone reaction kinetics, Redox system pH's, the "pulse" column, and Redox-234-5 coupling by plutonium phenylarsonate precipitation.

In the 234-5 process development laboratory, additional runs have been carried out with sulfate-free plutonium peroxide processed through reduction in an effort to substitute peroxide for oxalate purification. Volume reduction during recovery concentration has also been further studied. Improvements in plutonium shape radiographic and autoradiographic techniques have been developed.

Stack gas treatment studies have been devoted to testing "AA" Fiberglas for establishment of final design for the projected dissolver off-gas filters. Similar studies of the pilot model silver reactor for removal of iodine from dissolver off-gas have been carried out. A five-day continuous run with a pilot unit operating on plant dissolver off-gas has produced total radioactivity removal efficiencies as high as 99.99% and iodine removal efficiencies as high as 99.2%.

Improvement continued in the experimental production of Li-Al alloy billets and their fabrication into slugs for pile irradiation. Direct alloying of the lithium and aluminum now is practiced in the induction furnace,

which obviates the capsule preparation step originally employed. Another 12 of these billets were extruded at Detroit on September 30, reportedly with much improved rod yield.

The lead-dip canning and inspection of slugs prepared from induction heat-treated alpha-rolled and gamma-extruded uranium were completed, and this experimental material now is ready for evaluation in the production piles. The slugs made from two of the U-238 billets supplied by Oak Ridge also were lead-dip canned in preparation for observation of pile behavior.

Steps were taken to restaff the B Plant Control Laboratory as required by increasing 200 Area run schedules, and additional personnel were assigned to the Building 234-5 Laboratory to provide three shift coverage.

Analytical research has shown the mandelic acid procedure for determining zirconium to provide a means for removing this element from separations plant wastes, with or without columbium as desired, and separating it from other fission products such as Ba, La, Ru, Ce, and Pr. Conceivably this analytical separation method can be used to advantage in a potentially important process for the isolation of these two elements.

An analytical study evaluating the behavior of various electrode systems in the presence of high beta-gamma activities has shown certain electrodes to be stable indefinitely, while other systems behave erratically when subjected in solution to the radiation; the pH of the highly active medium may be measured accurately with glass electrodes. These findings indicate that instruments dependent upon the electrodes found to behave satisfactorily may be used with assurance in high activity solutions (e.g., in Redox and Rala).

Health Instrument Divisions

Personnel additions and removals from the roll resulted in a net loss of four people. There were five Special Hazards Incidents reported; none involved significant exposure.

The Operational Division report shows no improvement in the frequency of skin contamination and indicates an increase in the number of incidents which could lead to serious injuries unless the trend is stopped.

In the Development Division, a slight increase in atmospheric radiation levels was noted. A decided increase in active particles collected at local and outlying monitoring stations was observed. In Bioassay, six significant Pu results from previous months were not confirmed by resamples in this period. The maximum uranium content found in urine of 300 Area workers was 33 µg/liter.

In the Biology Division no unusual radioactivity was noted in the course of routine biological monitoring. Activity of aquatic forms such as bottom algae, plankton and midge larvae continued to increase over the previous high levels, accompanying the slight rise in river water activity. However, radioactivity in caddis flies and young fish remained at levels similar to those of last month while activity in large fish has decreased

slightly. Because of favorable collecting conditions, a record number of samples was analyzed for beta activity.

Plant Security and Services Divisions

There was one lost-time injury during the month which ended a run of 143 consecutive days without a disabling injury.

There were no losses from industrial fires during the month.

A Forms Control Engineer was appointed effective September 1, 1949. Initial results indicate that worthwhile savings can be realized from a complete review and study of all plant forms and associated procedures.

Effective September 28, 1949, Patrolmen were assigned to the 100-H Area Main Badge House to prepare for the change-over from Construction to Operations.

Employee and Community Relations Division

Open requisitions decreased from 206 at the beginning of the month to 174 at the end of the month. Total plant personnel decreased during the month from 7,522 to 7,519. Turn-over rate, including terminations due to lack of work, was 2.13% during September. Turn-over rate, exclusive of terminations due to lack of work, was 2.01%. Requirements for additional comptometer operators have now been met.

Three employees retired during September, two of which were on optional retirement. Forty-four visits were made to the Kadlec Hospital, and two visits were made to private homes for the purpose of contacting employees confined because of illness. Two employee deaths occurred during the month of September. Eleven awards, totaling $535.00, were approved by the Suggestion Committee during September. Planning for the programming of the new General Electric Health Insurance Plan has been completed, and an advance copy of the plan has been forwarded to all Hanford Works supervisors.

Ten meetings, in which 380 supervisory employees participated, were held by the Training and Program Development Group during September. There were 137 employees given orientation during the month of September.

September was an extremely active month in the Community Relations Division, as evidenced by the fact that the Nucleonics Department News Bureau released to the "Local List" of newspapers and radio stations a total of 40 separate news releases and photographs with captions.

It is significatnt to note that a large portion of this material concerned the new dial telephone system which is to be cut over early in October. Because it was necessary to disseminate a wide variety of information which telephone users should have prior to the cut-over, the News Bureau planned a very complete program of public information releases.

Public Relations wise, the News Bureau participated in two talks during the month. The Assistant General Manager addressed the Ellensburg Rotary Club, and was substituted for in an address before the Sunnyside Chamber of Commerce by the Community Relations Division Head. The News Bureau prepared

publicity releases concerning the Assistant General Manager's Ellensburg talk, and this same release was used at Sunnyside.

Community Relations wise, the News Bureau has been responsible for releases of all public information concerning National Fire Prevention Week and has played a large part in preparation of material that will be submitted as part of the Community Fire Division's record book of the event.

The 67 leading daily newspapers, wire services, and radio stations in the Pacific Northwest served by the Nucleonics Department News Bureau received a total of 9 releases during the month.

Special Programs, which handles all material prepared for dissemination to employees in the form of booklets, posters, and other methods assigned from news material in Hanford Works NEWS, played a large part in the formation of the publicity program which preceeds the actual signing of applications for participation in the G. E. Group Health Insurance Plan. In addition to actually preparing the publicity news stories for release, Special Programs also prepared the new G. E. Group Health Insurance Plan booklet together with a letter to accompany the booklet when it is mailed to employees' homes. The letter will be signed by the Nucleonics Department General Manager.

In addition to the Plan booklet, Special Programs has also prepared a self-mailing promotion piece which will be sent to employee homes as a follow-up of the booklet and will urge employees to sign up for participation prior to the deadline by which all applications must be in.

The Wilson 50th Anniversary Program contains several special activities of an employee information nature, and Special Programs was active during the month of September in the preparation of publicity materials to support these activities. One example is the special suggestion system poster which was prepared and placed on all suggestion boxes during the month.

Because Special Programs is assigned responsibility for public information concerning Kadlec Hospital, it was responsible for preparation during the month of local releases announcing the closing of the North Richland Hospital and the establishment of new medical-dental offices in the business section of North Richland. In addition, Special Programs is also handling releases of information concerning new polio cases in Richland as they are diagnosed. A release of this type was used during the month to re-emphasize necessary precautions to be taken to avoid an increase in the polio rate.

Community Relations wise, Special Programs assisted in the promotion of Emily Post's "Motor Manners" booklet. The work of this included arranging for photographs and preparation of news releases.

The Women's Feature Writer prepared two women's pages which were published in the Works NEWS during the month. In addition, the feature story called "Pick Up Patterns" resulted in requests for 90 patterns.

A total of 259 requests was received during the month by the Women's Feature Writer for listing of rides or riders in the special column she prepares each week for the Works NEWS. The Women's Feature Writer also prepared a 2,000 word article for release by the News Bureau during the

month. This feature, now complete with photographs and captions for the photographs, was requested previously by a Northwest newspaper and will be furnished to that newspaper for publication at an early date. The article concerns construction of new Richland churches.

Five issues of the Works NEWS were published during the month of September. A total of 7,800 copies are being printed each week.

A safety puzzle entitled "What's Wrong with This Picture?" containing 61 examples of unsafe acts was published in the September 2 issue of Hanford Works NEWS. As a result of the exchange which we have with other plant newspaper editors, requests have been received from several of these editors and from the Works NEWS Coordinator's office in Schenectady for permission to reprint the picture puzzle and for the key answer sheet.

Work was completed during the month by the Works NEWS on the start of a column in which questions of employees and answers to those questions will be published. The column, to be entitled "Can You Tell Me?" will be published the last Friday of each month. Preparation for publication of this column included the write-up of the plan which will be followed and on which approval could be obtained from Nucleonics Department Management, and the preparation of a letter to all supervisors announcing the new column in advance of the announcement in the Works NEWS.

The activities of the Labor Relations and Wage Rates Division have been 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 Office Workers Union withdrew their petition for investigation and certification without prejudice. Notices were received from the N.L.R.B. of petitions for the investigation and certification of the Technical Engineers and Architects Association, the Building Service Employees International Union, and the International Brotherhood of Teamsters, Chauffeurs, Warehousement and Helpers of America. A Decision and Direction of Election was received from the N.L.R.B. authorizing an election for all guards, including village patrolmen. The election was scheduled for October 11 and 12. Four meetings were held with the Council Grievance Committee. Meetings were held with supervisors to explain the wage system changeover procedure. Three reimbursement authorization requests were submitted to the A.E.C. for approval. Approval was received on the reimbursement of nine additional classifications.

Purchasing and Stores Divisions

Following is a personnel summary indicating total number of employees of the Purchasing and Stores Divisions as of 8-31-49 and 9-30-49:

	Total Personnel as of 8-31-49	Total Personnel as of 9-30-49	Net Change
Exempt	46	46	0
Non-Exempt	257	256	- 1
TOTALS	303	302	- 1

General Summary

The work load in the Purchasing Division increased approximately 10 percent over the previous month.

All shipments of coal to the Project were discontinued on the fifteenth due to the coal strike. There were indications, however, at month end that shipments would be resumed shortly.

As a result of negotiations between the Traffic Section and the carriers, a rate reduction was obtained on Ferric Sulphate which will result in approximate annual savings of $15,300.

Arrangements were concluded whereby Ferric Sulphate will be delivered in covered hopper cars as compared with the previous practice of requesting shipments in paper bags loaded in box cars which will result in approximate annual savings of $36,000.

Stores active inventories were reduced by a total of $192,276.50. This was accomplished by the disposal of obsolete materials and a continuing review and adjustment of stock levels.

The Stores Division was assigned responsibility for the control of all subcontractor-held inventories. All work in connection therewith will be handled as heretofore by subcontractor personnel but under the specific direction and guidance of Stores Division supervision.

Thirty-five representatives of Government agencies and private businesses were escorted through the project for the purpose of inspecting scrap and surplus property.

Community Divisions

Appropriation Request No. 66, "Cleaning of Coal Fired Furnaces", was approved by the Appropriations and Budget Committee and the informal letter request forwarded to the Commission.

Appropriation Request No. 61-R, "Maintenance of Prefab Roofs", was approved by the Appropriations and Budget Committee and informal letter request forwarded to the Commission.

Project C-345-R, "Attic Duct Insulation, Precut Houses", was approved by the Commission during the month.

A total of 22 fire alarms was answered--six in North Richland and sixteen in Richland.

Two hundred fifty applications for housing remain unfilled, which is an increase of forty.

Six new business establishments were opened for business during the month of September.

No appreciable changes were made in the activities of any of the Community Divisions during the month.

[redacted]

General Summary

Medical Division

The Medical Division roll decreased by 18 from 412 to 394.

A group of medical consultants have been secured to assist us in long range planning at this project. They are -

Dr. Herman Smith	Chicago
Dr. Robert A. Moore	St. Louis
Dr. S. T. Cantril	Seattle
Mr. William S. McNary	Detroit

The first meeting of this group is scheduled for November 11 and 12 in Richland.

The North Richland Medical Center is to be closed on October 7.

An increasing incidence of poliomyelitis has received careful attention. Ten cases have been reported this year, nine during September.

While the cost of operating the Medical Divisions is below the budget figure, the net cost of operating the community medical program is considerably above the budget due to marked decrease in revenue occasioned by construction curtailment and population decline.

General Accounting Divisions

The Atomic Energy Commission authorized the Company by letter dated September 26, 1949, to announce to employees the revised Group Disability Insurance Plan. The letter indicates that reimbursement authorization covering the revised plan will be issued in the near future.

Considerable time has been spent in securing interpretation of the Agreement Between Hanford Atomic Metal Trades Council and General Electric with respect to payment practices under various circumstances. During the past four months, meetings have been held with interested individuals for discussion of the provisions of the Agreement. Several letters have been written requesting clarification of certain provisions of the Agreement. Although several of these questions are still unanswered, work is progressing satisfactorily on the calculation of adjusted salary payments retroactive to April 11, 1949.

Plant Accounting Statements were prepared in September showing balances in Plant Accounts as of June 30, 1949 which reflected closing entry prepared in August covering evaluation of plant assets. Balances as of June 30, 1949 may be summarized as follows:

[redacted]

General Summary

(Amounts in Thousands)	Cost	Depreciation Reserve	Net Book Value
Classified Facilities in Service			
Improvements to Land	$ 21 803	$ 5 896	$ 15 907
Buildings and Other Structures	142 513	23 624	118 889
Equipment	179 956	65 964	113 992
Unclassified Facilities	55 089	488	54 601
Property Held for Future Use	5 111	460	4 651
Property Not Used or Useful	12 561	12 561	- 0 -
Major Construction Program Facilities	48 238	5 067	43 171
Construction Work in Progress	113 194	- 0 -	113 194
Retirement Work in Progress	18	- 0 -	18
Total	$578 483	$114 060	$464 423

Advances from AEC were reduced from $5,500,000 at the beginning of the month to $4,500,000 at the month end. Items comprising the balance advanced by AEC are:

Cash in Bank - Contract Accounts	$3,870,130
Salary Accounts	55,000
Travel Advance Account	50,000
Unliquidated Portion of Advances Prior to June 1, 1949	40,012
Advances to Subcontractors	300,193
Accounts Receivable - AEC	87,482
Cash in Transit	97,183
Total	$4,500,000

[redacted]

[redacted]

STAFF

General Manager	G. R. Prout
Assistant General Manager	R. S. Neblett
Assistant General Manager	F. K. McCune
Assistant to the General Manager (Technical and Education Matters)	W. I. Patnode
Assistant to the General Manager	J. R. Rue
Assistant to the General Manager and Manager of the Plant Security and Services Divisions	G. G. Lail
Department Comptroller	F. E. Baker
Counsel	L. F. Huck
Community Manager	E. L. Richmond
Manager, Design and Construction Divisions	F. R. Creedon
Manager, Manufacturing Divisions	C. N. Gross
Manager, Technical Division	A. B. Greninger
Manager, Health Instrument Division	H. M. Parker
Manager, Medical Division	W. D. Norwood, M.D.
Manager, Employee and Community Relations Division	H. E. Callahan
Manager, Purchasing and Stores Divisions	W. A. Jeffrey

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HW 14596

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FORCE REPORT
SEPTEMBER - 1949

	Non - Exempt		Exempt		Total	
	8-31-49	9-30-49	8-31-49	9-30-49	8-31-49	9-30-49
GENERAL	20	20	14	14	34	34
LAW DIVISION	2	3	3	3	5	6
DESIGN & CONST. DIVISIONS						
Administrative	18	19	6	6	24	25
Construction	93	85	110	96	203	181
Const. Acctg.	58	55	9	8	67	63
Design	123	122	127	128	250	250
North Richland Realty	84	77	16	13	100	90
MANUFACTURING DIVISIONS						
General	3	4	7	7	10	11
Project Engineering	76	81	56	57	132	138
Mfg. Accounting	44	44	7	8	51	52
OPERATING DIVISIONS						
"P" Division	250	251	67	66	317	317
"S" Division	296	295	72	73	368	368
Power	448	454	78	79	526	533
MECHANICAL DIVISIONS						
Maintenance	465	489	69	75	534	564
Electrical	228	248	48	47	276	295
Instrument	180	185	45	46	225	231
Transoirtation	645	650	64	64	709	714
TECHNICAL DIVISIONS						
General	1	1	6	5	7	6
Pile Technology	24	24	52	52	76	76
Separations Technology	59	58	97	96	156	154
Metallurgy & Control	308	309	116	114	424	423
MEDICAL DIVISION	323	307	89	87	412	394
H. I. DIVISIONS						
General	4	2	6	6	10	8
Operational	118	120	55	56	173	176
Development	74	69	25	24	99	93
Biology	20	23	17	18	37	41
ACCOUNTING DIVISIONS						
Gen. Accounting - Payroll	75	82	7	8	82	90
Gen. Accounting	77	77	12	11	89	88
EMPLOYEE & COMMUNITY REL. DIV.	53	52	27	27	80	79
PLANT SECURITY & SERV. DIV.						
Patrol & Security	518	522	57	57	575	579
Safety & Fire	116	115	34	36	150	151
Gen. & Office Services	234	224	22	22	256	246
PURCHASING & STORES DIV.						
Purchasing	33	34	27	27	60	61
Stores	222	222	22	24	244	246
COMMUNITY DIVISIONS	615	589	146	147	761	736
GRAND TOTAL	5907	5912	1615	1607	7522	7519

[redacted]

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PERSONNEL DISTRIBUTION - SEPTEMBER - 1949

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL												
Clerical	-	-	-	-	-	-	-	-	-	-	14	14
Total	-	-	-	-	-	-	-	-	-	-	20	20
	-	-	-	-	-	-	-	-	-	-	34	34
LAW DIVISION												
Clerical	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	3	3
	-	-	-	-	-	-	-	-	-	-	6	6
DESIGN AND CONST. DIV'S												
ADMINISTRATIVE												
Supervisors	-	-	-	-	-	-	-	-	-	-	5	5
Engineers	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	16	16
Others	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	25	25
CONSTRUCTION										18	-	18
Supervisors	-	-	-	-	-	-	-	-	2	28	13	60
Engr's & Inspectors	-	-	-	-	13	-	4	-	-	48	2	56
Clerical	-	-	-	-	5	-	-	1	18	16	1	47
Others	-	-	-	-	12	-	-	-	20	110	16	181
Total	-	-	-	-	30	-	4	1				
CONST. ACCT'G										7	-	7
Supervisors	-	-	-	-	-	-	-	-	-	55	-	55
Clerical	-	-	-	-	-	-	-	-	-	1	-	1
Others	-	-	-	-	-	-	-	-	-	63	-	63
Total	-	-	-	-	-	-	-	-				

2.

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
DESIGN & CONST. DIV'S.												
DESIGN												
Supervisors	-	-	-	-	-	-	-	-	-	-	13	13
Engr's & Estimators	-	-	-	-	-	-	-	-	-	-	116	116
Clerical	-	-	-	-	-	-	-	-	-	-	55	55
Others	-	-	-	-	-	-	-	-	-	-	66	66
Total	-	-	-	-	-	-	-	-	-	-	250	250
NO. RICHLAND REALTY												
Supervisors	-	-	-	-	-	-	-	-	-	10	-	10
Engr's	-	-	-	-	-	-	-	-	-	3	-	3
Clerical	-	-	-	-	-	-	-	-	-	15	-	15
Others	-	-	-	-	-	-	-	-	-	62	-	62
Total	-	-	-	-	-	-	-	-	-	90	-	90
MANUFACTURING DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	11	11
PROJECT ENGINEERING												
Supervisors	-	-	-	-	-	-	1	-	-	-	37	38
Engineers	-	-	-	-	-	-	3	2	-	-	14	19
Drafting Personnel	-	-	-	1	-	-	6	2	-	-	38	47
Clerical	-	-	-	1	-	-	1	-	-	-	16	18
Others	-	-	-	-	-	-	3	-	-	-	13	16
Total	-	-	-	2	-	-	14	4	-	-	118	138

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MANUFACTURING DIV'S.												
MFG. ACCT'G.												
Supervisors	-	-	-	-	-	-	-	-	-	-	8	8
Clerical	-	-	-	-	-	-	-	-	-	-	44	44
Total	-	-	-	-	-	-	-	-	-	-	52	52
OPERATING DIV'S												
"P" DIVISION												
Supervisors	11	11	1	12	11	-	-	13	-	-	7	66
Operators	36	38	-	36	35	-	-	93	-	-	-	238
Clerical	2	2	-	1	2	-	-	3	-	-	3	13
Total	49	51	1	49	48	-	-	109	-	-	10	317
"S" DIVISION												
Supervisors	-	-	-	-	-	23	36	-	-	-	14	73
Operators	-	-	-	-	-	108	168	-	-	-	-	276
Clerical	-	-	-	-	-	6	9	-	-	-	4	19
Total	-	-	-	-	-	137	213	-	-	-	18	368
POWER												
Supervisors	13	13	-	12	18	5	8	1	3	-	-	73
Engineers	-	-	-	-	-	-	-	-	2	-	-	2
Operators	86	79	-	87	76	24	47	11	1	-	-	411
Clerical	1	1	-	1	1	-	1	-	5	-	-	10
Others	5	5	-	6	6	1	8	1	5	-	-	37
Total	105	98	-	106	101	30	64	13	16	-	-	533

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MECHANICAL DIVISIONS												
MAINTENANCE												
Supervisors	2	5	-	7	8	5	13	5	17	-	2	64
Engineers	-	-	-	3	1	-	-	-	1	-	6	11
Journeymen	17	26	-	40	39	35	85	46	118	-	-	406
Clerical	-	1	-	3	1	2	2	2	5	-	1	17
Others	2	1	-	5	8	3	14	9	24	-	-	66
Total	21	33	-	58	57	45	114	62	165	-	9	564
ELECTRICAL												
Supervisors	2	2	-	2	3	1	5	3	2	-	21	41
Engineers	-	-	-	-	1	-	-	1	1	-	3	6
Craftmen	13	11	-	20	13	12	21	18	-	-	94	202
Clerical	1	-	-	1	3	-	3	1	-	-	23	32
Others	-	-	-	3	1	-	1	1	2	-	6	14
Total	16	13	-	26	21	13	30	24	5	-	147	295
INSTRUMENT												
Supervisors	2	3	-	2	2	2	5	7	-	-	5	28
Engineers	2	1	-	-	-	-	2	9	-	-	4	18
Mechanics	2	3	-	4	4	5	15	14	-	-	3	50
Clerical	1	1	-	1	1	1	1	5	-	-	4	15
Others	10	9	-	10	8	10	17	46	-	-	10	120
Total	17	17	-	17	15	18	40	81	-	-	26	231

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MECHANICAL DIVISIONS												
TRANSPORTATION												
Supervisors	2	1	-	3	1	1	1	1	22	-	26	58
Engineers	-	-	-	-	-	-	-	-	-	-	5	5
Drivers(based on Area Serv.)	1	4	-	6	1	3	4	7	170	-	41	237
Journeymen	9	3	-	4	1	-	6	-	13	-	73	109
Trainmen	-	-	-	-	-	-	-	-	24	-	-	24
Servicemen	3	2	-	14	3	3	5	6	56	-	20	112
Clerical	-	-	-	1	1	1	1	1	6	-	17	28
Others	4	6	-	5	2	1	9	3	70	-	41	141
Total	19	16	-	33	9	9	26	18	361	-	223	714
TECHNICAL DIVISIONS												
TECHNICAL GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	-	-	1	1
Total	-	-	-	-	-	-	-	-	-	-	6	6
PILE TECHNOLOGY												
Supervisors	2	-	-	-	-	-	-	10	-	-	-	12
Chemists-Engr's-Tech. Grads.-Physicists-& Technologists	4	8	-	2	-	-	-	28	-	-	1	43
Laboratory Ass't.	4	3	-	-	-	-	-	7	-	-	-	14
Clerical	-	1	-	1	-	-	-	3	-	-	-	5
Others	1	1	-	-	-	-	-	-	-	-	-	2
Total	11	13	-	3	-	-	-	48	-	-	1	76

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
TECHNICAL DIVISIONS												
SEPARATIONS TECHNOLOGY												
Supervisors	-	-	-	-	-	1	3	19	-	-	1	24
Chem.-Engr's-Tech. Grads.	-	-	-	-	-	5	13	55	-	-	-	73
Clerical	-	-	-	-	-	-	2	7	-	-	1	10
Others	-	-	-	-	-	-	1	43	-	-	3	47
Total	-	-	-	-	-	6	19	124	-	-	5	154
METALLURGY & CONTROL												
Supervisors	1	2	-	-	-	6	7	32	-	-	5	53
Chemists- Engr's Tech. Grads. & Met.	5	3	-	1	-	18	21	83	-	-	1	132
Lab. Asst.	1	5	-	-	-	41	22	69	-	-	-	138
Clerical	-	1	-	-	-	2	1	36	-	-	34	74
Others	2	-	-	-	-	-	-	24	-	-	-	26
Total	9	11	-	1	-	67	51	244	-	-	40	423
MEDICAL DIVISION												
Supervisors	-	-	-	-	-	-	-	-	-	1	39	40
Physicians	-	-	-	-	-	-	-	-	-	6	23	29
Dentists	-	-	-	-	-	-	-	-	-	1	8	9
Technicians	-	-	-	-	-	-	-	-	-	2	22	24
Clerical	-	-	-	1	1	-	-	1	-	11	75	89
Others	2	2	-	4	3	4	5	2	-	8	173	203
Total	2	2	-	5	4	4	5	3	-	29	340	394
H. I. DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	5	5
Engineers	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	8	8

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
H. I. DIVISIONS												
OPERATIONAL												
Supervisors	1	1	-	2	1	3	4	8	-	-	1	21
Engineers	4	4	-	3	5	6	11	2	-	-	-	35
Clerical	-	-	-	1	-	1	-	-	-	-	-	2
Others	7	8	-	12	9	17	31	28	4	-	2	118
Total	12	13	-	18	15	27	46	38	4	-	3	176
DEVELOPMENT												
Supervisors	-	-	-	-	-	1	3	4	-	-	-	8
Engineers	-	-	-	-	-	5	4	6	-	-	1	16
Clerical	-	-	-	-	-	1	1	3	-	-	2	7
Others	-	-	-	-	-	11	26	16	-	-	9	62
Total	-	-	-	-	-	18	34	29	-	-	12	93
BIOLOGY												
Supervisors	-	-	-	1	-	-	1	1	-	-	-	3
Engineers	-	-	-	7	-	-	7	-	-	-	1	15
Clerical	-	-	-	1	-	-	-	-	-	-	-	1
Others	-	-	-	14	-	-	7	1	-	-	-	22
Total	-	-	-	23	-	-	15	2	-	-	1	41
ACCOUNTING DIVISIONS												
GEN. ACCTG.-PAYROLLS												
Supervisors	-	-	-	-	-	-	-	-	-	-	8	8
Clerical	-	-	-	-	-	-	-	-	-	-	82	82
Total	-	-	-	-	-	-	-	-	-	-	90	90
GEN. ACCT'G ACCT'G												
Supervisors	-	-	-	-	-	-	-	-	-	-	11	11
Clerical	-	-	-	-	-	-	-	-	-	-	77	77
Total	-	-	-	-	-	-	-	-	-	-	88	88

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
EMPLOYEE & COMM. REL.												
Supervisors	-	-	-	-	-	-	-	-	-	-	26	26
Emp. Rel. Counselor	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	43	43
Others	-	-	-	-	-	-	-	-	-	-	9	9
Total	-	-	-	-	-	-	-	-	-	-	79	79
PLANT SECURITY & SERV. DIV'S												
PATROL & SECURITY												
Supervisors	5	6	-	6	5	5	8	7	11	-	4	57
Patrolmen	37	46	-	63	67	64	119	67	6	-	37	506
Clerical	-	-	-	-	-	-	-	-	12	-	2	14
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	42	52	-	69	72	69	127	74	31	-	43	579
SAFETY & FIRE												
Supervisors	9	1	-	-	1	1	4	5	10	-	5	36
Firemen	39	-	-	8	-	-	10	13	-	-	14	84
Inspectors	9	4	-	4	-	4	1	1	3	-	1	27
Clerical	-	1	-	-	-	1	-	-	-	-	2	4
Total	57	6	-	12	1	6	15	19	13	-	22	151
GENERAL & OFF. SERV.												
Supervisors	-	-	-	1	-	1	2	-	-	-	18	22
Laundry Oper.	-	-	-	-	-	-	33	-	-	-	16	49
Janitors & Servicemen	4	5	-	7	1	6	13	13	-	-	34	83
Off. Mach. Oper.	-	-	-	-	-	-	-	-	-	-	42	42
Clerical	-	-	-	-	-	-	-	-	-	-	50	50
Total	4	5	-	8	1	7	48	13	-	-	160	246

	100-B Area	100-D Area	100-DR Area	100-F Area	100-H Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
PURCHASING & STORES DIV'S												
PURCHASING												
Supervisors	-	-	-	-	-	-	-	-	6	-	21	27
Clerical	-	-	-	-	-	-	-	-	-	-	33	33
Total	-	-	-	-	-	-	-	-	6	-	54	60
STORES												
Supervisors	-	-	-	-	-	-	-	-	-	8	16	24
Clerical	1	-	-	-	-	-	1	-	-	31	190	223
Total	1	-	-	-	-	-	1	-	-	39	206	247
COMMUNITY DIVISIONS												
Supervisors	-	-	-	-	-	-	-	-	-	24	123	147
Patrolmen	-	-	-	-	-	-	-	-	-	28	28	56
Firemen	-	-	-	-	-	-	-	-	-	44	57	101
Journeymen	-	-	-	-	-	-	-	-	-	-	148	148
Servicemen	-	-	-	-	-	-	-	-	-	-	51	51
Truck Drivers	-	-	-	-	-	-	-	-	-	-	17	17
Power Operators	-	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	-	68	68
Others	-	-	-	-	-	-	-	-	-	-	145	145
Total	-	-	-	-	-	-	-	-	-	96	640	736
GRAND TOTAL	365	330	1	430	374	455	866	906	621	427	2743	7519

[redacted]

MANUFACTURING DIVISIONS

SEPTEMBER 1949

SUMMARY

Production Divisions

A total of 60 tons of metal was discharged from B, D, and F piles at an average concentration of 396 MWD/ton. The operating efficiency was 87.7 percent; and the operating levels remained at 275 MW at B and F piles and 305 MW at D pile.

The 105-H Pile Building was accepted from Construction on September 28, with certain exceptions, and preparations are being made for its activation. The remainder of the area, including the water and power facilities, is not yet complete, but transfer with specific exceptions is anticipated during October.

A total of 69 tons of acceptable slugs was canned at a yield of 91.1 percent. The machining yield was 92.1 percent. The melt plant produced 20 tons at a yield of 68.8 percent.

Fifty-three batches were started in the Canyon Buildings, with 51 being processed through the Concentration Buildings, and 50 through the Isolation Building. The average purity of completed batches at Isolation was 98.5 percent.

Effective September 19, 1949, the Expansion Problems Section was dissolved. The remaining assignments for the Section were returned to the respective using Divisions for continuation as necessary. The general policies and procedures established by the Section will be continued.

Project Engineering Divisions

This Division was reorganized effective September 15, 1949 to comprise a Design, a Control, and a Minor Construction Division. This centralization of services, authority, and responsibility ensures more effective designing, planning, and completion of plant and project facilities. Each division is headed by a Superintendent: S. F. Schure, Design; J. W. Brands, Control; and J. M. Heffner, Minor Construction, under J. S. McMahon.

C. M. Gross

C. M. GROSS, MANAGER
MANUFACTURING DIVISIONS

[redacted]

[redacted]

DECLASSIFIED

MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF SEPTEMBER, 1949

Richland, Washington
October 10, 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
Albert M. Fassler (Transportation Division)	Automatic Safety Lock for Air Hammer.

C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

[redacted]

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WITH DELETIONS

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October 6, 1949

P DIVISION

SEPTEMBER, 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.

A total of 60.22 tons of metal, at an average concentration of 396 MWD/ton, was discharged from the piles during the month.

The 105-H Building was accepted from the Construction Division on September 28 with certain exceptions noted under the Operating Experience section of this report. At month end P Division operating personnel are making preparations for activation of the H pile.

On September 28 the operation of the 300 Area oxide burning process was reduced from a two shift to a one shift five day operation. This change in schedule was possible as a result of working off the backlog of uranium oxide.

The shipment of 200 tons of canned slugs to Building 105-DR for storage was completed on September 9 and the shipment of 250 tons of canned slugs to Building 105-H for the initial loading charge was completed on September 26.

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - September, 1949

Beginning of Month	317
End of Month	320
Net Increase	3

[redacted]

One operator and one steno-typist terminated voluntarily. One operator returned from leave of absence and one operator was rehired to fill a vacancy in the 300 Area. In addition, one steno-typist was transferred from the Construction forces and one was hired to fill vacancies in the 100 Areas.

Two Shift Supervisors, B. E. Dalton and J. D. Darby, were removed from the rolls of the 300 Area, effective September 1. T. M. Hall, Shift Supervisor, returned from leave of absence. W. N. Koop and C. E. Jones were added to the P Division rolls as Supervisors in Training; these men were transferred from the Technical and Health Instrument Divisions, respectively.

Twenty-five operators and three supervisors were transferred to 100-H Area from the other 100 Areas. This completes the transfer of operating personnel in preparation for the start-up of H pile.

III. AREA ACTIVITIES

PILE SUMMARY	PILE B	PILE D	PILE F
Time Operated (%)	91.6	85.6	91.5
Operating Efficiency (%)	89.7	83.4	89.9
*Power Level (MW)	275	305	275
*Inlet Water Temperature (°C)	18.0	18.4	18.1
*Outlet Water Temperature (Maximum °C., 10 tubes, 0.240" Zone)	54.8	52.5	55.2
Number of Scrams	1	1	1
Number of Purges	1	1	0
Helium Consumption (cu. ft.)	19503	65427**	23348
Metal Discharged (tons)	17.52	26.31	16.39
Inhours Gained (this month)	5	1	6
*Inhours Poisoned	511	525	539
*Inhours in Rods	65	71	55

* Month end figures.
** Includes consumption of 15,000 cu. ft. at DR pile.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (hours)
9-1-49	B			21.8
9-8-49		F		36.5
9-10-49			B	19.3*
9-10-49			D	.7*
9-10-49			F	.6*

Outage Breakdown (Con't.)

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length Outage (hours)
9-14-49	D			46.1**
9-21-49	B			21.5
9-27-49	F			24.4
9-28-49	D			56.9

* Unit scrammed due to Critical Y power condition. 100-B could not be restarted because duration of condition exceeded recovery time.

** Includes outage to discharge temporary poison.

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:

1.485"	1.490"
4670-D	4665-B
	4666-B
	4677-D
	4681-B
	4682-B

105-103-P (Corrosion Rates at Elevated Temperatures - Supplement A)
During the September 27 outage at F pile, smaller orifices were installed in tubes 2670-F, 3564-F, 3674-F, and 2851-F. At month end, the reduced flow was not affecting operation of the pile at nominal level.

105-114-P (Van Stone Corrosion Studies)
During the September 8 outage at F pile, examination of three tubes fitted with stainless steel front nozzles and sacrificial magnesium upstream dummies revealed the tubes to be free of corrosion products and the Van Stone flanges to be in good condition.

Three tubes fitted with galvanized upstream nozzles revealed no appreciable Van Stone pitting or corrosion products.

Four rear and three front Van Stone flanges protected by sacrificial magnesium gaskets were inspected and all were found to be in good condition.

105-168-P (Replacement of Pile Helium Atmosphere with CO_2) The CO_2 concentration was maintained at 60% in B and F piles and 40% in 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 of B and F piles. In the D pile, however, a purge was necessary at the end of the month because of a sudden unexplained increase in film formation rate.

During the purge of the 105-D pile (9-28-49) a screen on the solids injection system split, permitting large particles of solids to enter the process water system. This resulted in severe plugging of the screens on C and D riser and the subsequent charging of these screens necessitated approximately 15½ hours of additional outage time. After startup, there was evidence of cone screen plugging on five tubes and the unit was shut down for an additional 2.8 hours to change these screens.

The orifices in the inlet end of the process tubes were changed to the next larger size on 13 tubes in B pile, 43 tubes in D pile and 21 tubes in F pile during the month to relieve high exit water temperature conditions following startup.

During the month, segmental discharge of four tubes was attempted. Two tubes at B pile were discharged without incident. The tape would not enter one tube at D pile and it could not be discharged; the other tube was processed without incident.

A total of 55.12 tons of Group V (alpha rolled, triple dipped, completely transformed) material was discharged during the month at an average concentration of 406 MWD/ton without incident.

Four process tubes were replaced during the month (channels 0574-B, 3469-D, 1659-D and 1758-D) and the tube was removed from channel 4280-F for corrosion studies.

The 105-H area was accepted from the Construction Division on September 28, 1949 with certain exceptions. The work required to complete the unaccepted items will be performed by the Manufacturing Division Mechanical Divisions personnel on work order

authorization from the Construction Division. Included in the work yet to be completed are these major items:

1. Balance building ventilation system.
2. Make unit flow test.
3. Complete installation and testing of gas analysis instrumentation.
4. Replace inlet and outlet caps.
5. Complete installation of B test hole insert.
6. Change all cross header screens and identify headers and tubes.
7. Complete installation and testing of pannelit gauges.

Mechanical Experience

At month end all horizontal and vertical safety rods are in satisfactory operating condition with the exception of #32-F which is tied out due to excessive binding.

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

1. No. 31-B rod was replaced with a stainless steel rod and guide.
2. Replacement of electrical leads on #16-B and #17-B rods continued during the month.
3. The pneumatic testing of all vertical safety rod thimbles was completed during the month. Thimbles #18-F and #31-F were replaced and #26-F remains to be replaced. No. 23-F, reported leaking (see HW-14338-A), was retested and found to be satisfactory.
4. The tip of #5-D rod was replaced on September 15 after a water leak was observed in the tip.

The air inlet duct to the rear face of D pile was found to be blocked with water during the September 15 outage. The duct was pumped dry and the drain cleaned. At month end, the condition of the duct appears satisfactory.

On September 3, a partial failure of the horizontal rod hydraulic shim pump drive system occurred at B pile. Investigation revealed that excessive leakage of oil at #9 drive motor had resulted in the transfer of considerable oil from the shim pump sumps to the accumulator pump sumps via the drain line. The shim pump sumps were refilled and the motor is scheduled for overhaul to prevent reoccurrence of the condition. The emergency accumulator system was not affected by this trouble.

The inspection of the front ends of 35 tubes in D pile revealed corrosion product deposition in several tubes but no evidence of pitting in any except 1794-D. This tube was pitted at the

Van Stone flange and also in the tube downstream of the flange. Further evaluation of this problem is being made by the Technical Divisions.

The tie-in of the 107-DR effluent line at 1904-D was completed during the month.

Pile Area Development

A removable shield was developed at F pile during the month for use while cutting vertical safety rod thimbles. Personnel exposure during thimble replacement was reduced 50% by use of this device.

A revision of the Control Room RXG (Beckman) circuits was made in all piles during the month. The revision provides a separate fuse for the heater and electrometer circuits and is expected to minimize scrams caused by fuse failure in the heater circuit.

Process Control Activities

During the month, forty-one procedure revisions and twelve log sheet revisions were processed in preparation for the activation of the H pile. In addition the group undertook new responsibilities in connection with project and cost engineering, began a training program for two new supervisors, and continued the routine production accounting and scheduling work, suggestion processing and development investigation.

Gas Processing Building

Operations in these buildings were normal during the month. Sixteen thousand pounds of liquid CO_2 were unloaded into storage at 110-H on September 22.

Special Hazards

Slight decreases in the intensity of the beam at the top far edges of D and F piles were reported during the month.

300 AREA - METAL FABRICATION

Production Statistics

Production for the month of September was as follows:

Billets produced	20 Tons
Rods Machined	72 Tons
Bare Pieces Machined	53 Tons
Acceptable Pieces Canned	69 Tons

P Division

Melt Plant

The casting yields were as follows:

	August	September	To Date 1949
Billet	66.0	68.8	68.1
Solid Metal	84.6	84.4	85.6

An increase in billet yield was obtained by processing current rather than stock pile material, using approximately 55% TXB, 31% UM, and 14% remelt per furnace charge. In addition, about 90% of the TXB charged was processed from pickled chips.

The new Cochran Bly saw was used satisfactorily for billet cropping throughout the month.

Machining

Machining yields were as follows:

% Yield		
August	September	To Date 1949
71.3	72.6	69.9

The higher yield this month resulted from a reduction in turning scrap. Rod diameters ranged from 1.408" to 1.460", with an average of approximately 1.425". The amount of solid scrap on some of the lots machined was high because a number of rods were eliptical and had deep surface grooves and voids.

A total of 21 thermocouple slugs was machined on September 14. These slugs are to be used for 100 Area test purposes.

Chip Recovery

The Chip Recovery yield was as follows:

% Yield		
August	September	To Date 1949
90.5	92.1	90.6

The entire Chip Recovery process was operated four shifts, with the press being operated eight additional shifts. A total of 20,257 pounds of TXB was produced, of which 92.7 percent was processed from pickled chips.

[redacted]

P Division

Oxide Burning

The material burned was as follows:

Weight Out - Pounds		
August	September	To Date 1949
41,831	95,776	280,920

Oxide burning was continued on a two-shift five-day week schedule until September 26, at which time operation was decreased to a one-shift five-day week. The backlog of oxides for burning had been sufficiently reduced, as a result of using the outgassing furnace for roasting, to warrent this change in scheduling.

Canning Operation

The canning yield was as follows:

% Yield		
August	September	To Date 1949
91.6	91.1	91.2

Canning rejects, by cause, were:

	%		
	August	September	To Date 1949
Non seating	0.8	1.7	0.9
Marred Surface	2.5	2.8	2.6
Al-Si on Outside of Can	1.6	0.7	1.1
Frost Test	1.5	1.4	2.0
Bad Welds	0.7	0.6	0.7
Miscellaneous	1.3	1.7	1.5
	8.4	8.9	8.8

The canning yield was slightly lower this month than in August. Defective thermocouples in the canning baths on two occasions resulted in an abnormal number of pieces being rejected for non-seating. A mechanical failure of an electric hoist caused 108 pieces to be spilled in a degreaser and rejected for marred surface. Al-Si rejects were reduced appreciably through improved crimping techniques.

All pieces canned on August 1 and 2 which have been held for investigation (see Document HW-14338-A) were re-etched and those having caps containing excessive copper, as indicated

by off color, were rejected. Only seven pieces were rejected and the remainder was released as acceptable.

A total of 686 slugs was canned by the lead dip process in conformance with Production Test No. 313-109-M, (Heat Treating Uranium by Electrical Induction). One hundred sixteen slugs fabricated from depleted uranium were canned by the lead dip process under Production Test No. 313-110-M, (Lead Dip Canning of U-238).

The following special request pieces were canned:

Request No.	Contents	No. of Pieces
P-10-A	Lithium Aluminum Alloy	312
ORNL	Alpha Rolled Uranium (Pb Dip Canned)	80

In addition 3070 lead slugs and 42 uranium receptacle slugs were canned.

Slug Recovery

	% Recovered		Average Wt. - Lbs.	
	September	To Date 1949	September	To Date 1949
Z Slugs	95.3	88.8	3.906	3.911
X Slugs	4.3	9.2	3.862	3.858
Rejects	0.4	2.0	---	---
	100.0	100.0		

Inspection and Testing

Autoclave rejects were as follows:

August	September	To Date 1949
0.08/M	0.08/M	.06/M

Three complete autoclave failures occurred in September.

No penetration was found within 0.010" of the outer can wall on any of the pieces tested during the month. Only one test sample showed penetration at 0.015".

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

P Division

	% Usable		
	August	September	To Date 1949
Aluminum Cans	94.9	93.8	94.6
Aluminum Caps	86.4	90.5	93.5
Steel Sleeves	*	84.4	86.4

* No new sleeves were inspected.

A total of 3480 aluminum cans received from Scoville Manufacturing Company was inspected and 97.7% were acceptable.

Material Handling

An additional 21,402 canned slugs were transferred to 100-DR for storage and 128,502 canned slugs were shipped to 100-H for initial loading.

One hundred thirty-five tons of rods were received from Simonds Saw and Steel Company and 21 tons of oxide (MD-6) were shipped to Mallinckrodt Chemical Works.

305 Test Pile

The test pile was operated on a one-shift five-day week schedule. Ninety-four tests were run on canned slugs, 29 on billet eggs, 384 on graphite bars, and the following on special work requests:

Request No.		No. of Tests
97 & 98	To test the effectiveness of boric acid type P column to be used as a temporary P column in the 105 piles.	15
99	To make boron calibration of 305 pile.	4
100	To determine purity of SR-65 pieces.	24
101	To calibrate instrument.	1
102	To calibrate instrument.	1
103	To test P-10-A slugs.	12
104	Standardize instruments for obtaining data on PT-225-105.	1
105	Sort P-10-A slugs to be used in the 105 piles.	96

Special Hazards

No unusual conditions developed during the month.

P Division

Development

Test runs were completed this month to determine the feasibility of using the outgassing furnace to burn oxides. Results indicated that this furnace was more efficient and has about twice the capacity of the existing propane burner. It was converted for the routine burning of oxides on September 6. An estimated manpower savings of about $3,000.00 will result from the use of the electric furnace to reduce the current backlog of oxides, and an annual manpower savings thereafter of about $3500.00 based on present production rates.

A pneumatic cylinder and foot switch were installed on one Lodge and Shipley lathe to actuate the starting and stopping mechanism. The results have been very satisfactory and show a time savings of 11% for facing canned slugs. It is planned to make this installation on the two remaining lathes, which require manual operation of the clutch and brake.

A suggestion to degrease billet eggs prior to testing was adopted. The evaluation of this suggestion indicated that almost all of the retests on billet eggs resulted from contamination that could be readily removed by degreasing. Based on actual testing experience for the first six months of the year, it is estimated that about $870.00 can be saved annually by degreasing billet eggs and thus eliminating the cost of retesting in most cases. In addition to the above savings it is expected that more accurate T.D.S. values will be obtained.

[redacted]

S DIVISION

SEPTEMBER, 1949

OPERATING SECTION

1. GENERAL

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

The over-all material balance for T and B Plants (including the Isolation Plant) averaged 99.6 and 97.1 percent, respectively, for a combined average of 98.5 percent. Waste losses for the two plants averaged 2.9 percent.

Canyon and Concentration Building Production Performance Data - (9-1-49 to 9-30-49, inclusive)

	B Plant	T Plant	Combined
Number of charges started	27	26	53
Number of charges completed	23	28	51
For completed charges:			
Percentage of starting product in waste:			
This month	2.4(a)	2.7(a)	2.6
Last month	2.7(b)	2.5(b)	2.5
Cumulative to date	4.4(c)	4.1(c)	4.3
Percentage of starting product recovered:			
This month	94.2	98.5	96.5
Last month	101.8	96.7	98.2
Cumulative to date	97.3	95.5	96.4

[redacted]

S Division

	B Plant	T Plant	Combined
Percentage of starting product accounted for:			
This month	96.6	101.2	99.1
Last month	104.5	99.2	100.7
Cumulative to date	101.7	99.6	100.7
Gamma decontamination factor (Log.)			
This month	7.59	7.52	7.55
Last month	7.47	7.45	7.46
Cumulative to date	7.36	7.34	7.35

(a), (b), (c): Include waste from processing recycle. The recycle wastes are estimated as: (a) 0.011%-T Plant; 0.013%-B Plant. (b) 0.002%-T Plant; 0.014%-B Plant. (c) 0.102%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (9-1-49 - 9-30-49, inclusive)

	% of Incoming Product				
	Prepared for Shipment	Recycle	* Waste	Retained Samples	Material Balance
Average for this month	94.6	4.53	0.27	0.03	99.4
Average for last month	92.6	6.25	0.07	-0.23	98.7
Average to date	95.8	4.68	0.06	0.02	100.6

* Includes Technical sample taken on a no loss basis.

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	369
End of month	370
Net increase	1

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

4 transfers from other Divisions (3 weekly roll, 1 monthly roll)
2 terminations (weekly roll)
1 retirement (weekly roll)
1 allowed leave of absence (weekly roll)
1 returned from leave of absence (weekly roll)

Changes in Supervisory Organization:

S. D. Smiley, Assistant Superintendent, was placed in charge of the S Division Expansion and Control Section.

V. R. Chapman was promoted to Assistant Superintendent in charge of S Division operations.

[redacted]

R. K. Smith was promoted from Shift Supervisor to Senior Supervisor on September 1, 1949.

L. A. Berry was transferred from the Technical Divisions on September 6, 1949, as Supervisor-in-Training.

C. T. Groswith, Assistant Chief Supervisor, was transferred to the S Division Expansion and Control Section as Contact Engineer for Phases II and III of Project C-198.

T. Prudich, Chief Supervisor, 234-5 and 231 Buildings, was assigned the additional responsibility for T Plant administration in the 200 West Area.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

T and B Plants

Extraction Waste Losses

Extraction waste losses continued to increase as expected as the average MWD/ton level of the metal processed increased.

	T PLANT		B PLANT	
	September	August	September	August
Original analysis	0.99	0.84	0.89	0.84
Throw-away loss	0.69	0.55	0.58	0.48
Average MWD	324	276	346	298

Harshaw Single Distilled Hydrogen Fluoride - T Plant

Two thousand pounds of Harshaw Chemical Company single distilled hydrogen fluoride in cylinders, representing material containing the maximum impurities under the vendor's specifications, were used during the month for the formation of lanthanum fluoride cakes in the T Plant Concentration Building process in twelve runs on a production test basis (Production Test 224-T-12). Waste losses for the runs in which this material was used were normal. If additional data yet to be obtained, using HF in stock and meeting higher specifications, bear out the indicated lack of deleterious effects from the material tested, plant specifications will be relaxed sufficiently to accept material of lower specifications. Acceptance of the vendor's specifications is necessary to assure a supply of single distilled HF, since higher purity cannot be guaranteed. A savings of approximately nine and one-half cents per pound of HF will result in the use of single distilled material.

Second Cycle Production Section - B Plant

Considerable difficulty was experienced with operation of the pre-

[redacted]

cipitator to centrifuge jet in the second cycle product section (Section 17) in B Plant. It was found necessary to remove the screen from the inlet pipe to the transfer jet when it was found to be plugging frequently with material thought to be the relatively insoluble beta form of bismuth phosphate. An acid flush to clean the precipitator tank and to remove product which was thought possibly to be held up in the precipitator was made with a total pick-up of only 2.52 percent of a normal run resulting.

WASTE DISPOSAL

241-BY Tank Farm - Project C-271

As reported previously, the sub-contractor's phase of this project has been completed. In the General Electric phase, the overflow lines between the BX and BY Area were completed. Several items remain to be completed.

TX Tank Riser Shielding

Concrete forms for the fabrication of 42" riser plugs have been completed and seven plugs have been poured to date. Installation of these plugs will be started in October.

Product Content of Coating Wastes - B and T Plants

Samples of twelve coating wastes (five in T Plant and seven in B Plant) were obtained from the waste neutralization tank in Section 15 and analyzed for product content. Results of the analyses showed the product content to range from 0.21 percent to 1.80 percent for an average loss of 0.50 percent. Results from a few samples of coating solutions obtained directly from the dissolvers gave slightly lower results. Studies conducted early in the history of the process showed that losses of approximately 0.30 percent could be expected. The investigation will be continued in October.

Waste Status

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

B Plant

Bldg. 241 Tanks	Waste	Percentage Full			Reserve Capacity in Batches to Process			
		B	C	BX	B	C	BX	Total
x101,2,3	Metal	100	100	100	0	0	0	0
x104,5,6	Metal	-	100	71.6	-	0	112	112
x201,2,3,4	Metal	0	100	-	-	0	-	0
x107,8,9	1st Cycle	100	100	-	0	0	-	0
x110,11,12	1st Cycle	-	100	-	-	0	-	0
x107,8	1st Cycle	-	-	100	-	-	0	0
x110,11	1st Cycle	-	-	6.3	-	-	276	276

B Plant

Bldg. 241 Tanks	Waste	Percentage Full B	C	BX	Reserve Capacity in Batches to Process B	C	BX	Total
x104,5,6	2nd Cycle	56.4	-	-	277	-	-	277
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 T	U	TX	Reserve Capacity in Batches to Process 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
x101,2,3,4	Metal	-	-	9.5	-	-	653	653
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	-	-	27.0	-	-	612	612
x115,118	1st Cycle	-	-	0	-	-	410	410
x110,11,12	2nd Cycle	86.2	-	-	80	-	-	80
x113,14,16,17	2nd Cycle	-	-	0	-	-	1123	1123

MECHANICAL PERFORMANCE

Connector Failures - B and T Plants

Four connectors in the Canyon Buildings developed leaks and required replacing. These were:

1) The Section 8 extraction precipitator to centrifuge "A" jet assembly in B Plant.

2) A second Section 8 extraction precipitator to centrifuge "A" jet assembly in B Plant which had been regasketed after removal from Section 17 for inspection and subsequently installed in Section 8.

3) The Section 8 extraction centrifuge to cake dissolving tank jet assembly in T Plant.

4) The solution transfer line from Section 4 metal solution storage to the batch make-up tank in Section 6, between the wall connector and the 6-1 tank.

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

Semi-Parallel Operation of Canyon Equipment - T Plant

The necessary mechanical re-arrangements of idle Sections 18 and 19 for semi-parallel operation of T Plant were completed during the month. Testing of the equipment and recalibration of process tanks have been completed. Although production schedules for several months to come are not sufficient to require semi-parallel operation of the plant, it is planned to place it into effect in the near future in order to develop and refine the techniques and scheduling required for this type operation.

The installations necessary for placing the B Plant Canyon in semi-parallel operation are currently being made.

Precipitator Heating-Cooling Jacket Leak - B Plant

The heating-cooling jacket of the first decontamination cycle by-product precipitator in B Plant developed a leak of approximately 1,200 lbs. of water per hour during the month. This tank, which was placed in service in April, 1949, had been modified with compression bands about the top and bottom of the jacket, in an effort to eliminate jacket failure. High radiation levels preclude close inspection of this tank, but inspection by means of the crane optical indicates that the leak is in a welded seam of the jacket.

Lanthanum Fluoride Precipitate Centrifuges - T Plant

Inspection of the reinforced type skimmers in the B-2 centrifuge (lanthanum fluoride product) in the T Plant Concentration Building disclosed that the reinforcement webbing had almost completely corroded away after fourteen months' usage. Subsequent inspection of the D-2 (lanthanum fluoride by-product) and E-2 (lanthanum fluoride product) skimmers, which have been in service approximately 48 months, disclosed that these skimmers were in very good condition. It is therefore suspected that metal other than 25-12 Cb stainless steel was used in the fabrication of the B-2 centrifuge skimmers. The defective skimmers will be replaced in October.

IV. EXPANSION AND CONTROL SECTION

In view of the eminent completion of 100 Area expansion projects, those S Division personnel on loan to the Manufacturing Divisions Expansion Problems Section were returned to the S Division and combined with the recently formed 234-5 Project 432 Contact Engineer's Group and the S Division Process Control Group to form the S Division Expansion and Control Section.

Redox

The following scope material was transmitted to the Kellex Corporation during September:

25 Engineering Flow Diagrams
3 Process Equipment Layout Drawings

All comment has been made by interested Divisions on the Instrument Flow Diagrams, and agreement reached on disposition of the comments. At month-end, tracings of the revised drawings were ready for approval and transmittal to the Kellex Corporation.

The S Division Contact Engineer has made comments on the following drawings and letters:

Steam and water distribution line drawings, from present facilities to the Redox Area and the 241-S Waste Storage Area.

Steam, Water, and Nitrogen header drawings for the 202-S Building.

Electrical one-line diagram for the 202-S Building.

13 Design Instruction Letters specifying the mechanical features of the Redox Plants and accessory facilities.

Comment issue of process piping layout drawings has been made, and is now under study by the Contact Engineer.

Field testing, under operating conditions, is being arranged for at 221-B Building on an air-operated gang valve proposed for the Redox Plants. A sampler, of the Q-Smith type, is under test at the 272-E Shop. Final drawings on the 241-S Waste Storage Area (G. E. Designed) are now being received for approval.

Rala

The Separations Steering Committee, formerly known as the Redox Steering Committee, has taken over the responsibility for the direction of the Rala Project. Design work on this project has been reorganized on the pattern established for Redox design. A working committee, consisting of C. H. Holt, Jr., W. M. Harty, and O. V. Smiset, is directing Rala design work, and reporting to the Separations Committee.

The working committee is currently reviewing work done to date on this project, with the object of providing the firmest design basis possible within existing time limitations, for the development of Rala Plant design. The several mechanical and chemical development studies needed to establish this design basis have been agreed upon, approved by the Separations Committee, and are now being started.

234-5 Building - Phases II and III

Reported under separate cover in Document HW-14658.

PROCESS CONTROL

First Cycle Waste Evaporation Project Proposal

The design of waste evaporators to be located in the 200-E and 200-W Areas is essentially complete. The preliminary plan was to construct one evaporator with a capacity of 500 GPH in each area for the evaporation of first and second decontamination cycle wastes. Recent developments indicate that more stringent restrictions on the cribbing of wastes may necessitate the storage and/or evaporation of all 200 Area wastes. The adequacy of the 500 GPH evaporators is therefore questionable at this time. The problem is under investigation.

Pipe Creeping Through Concrete - Canyon Buildings

The creeping of steam piping through concrete toward the cells has been recognized as a problem of concern since its discovery approximately one year ago. During the past month a special 35 ton hydraulic puller was used in an attempt to correct this condition on the No. 54 steam pipe in Section 16 in B Plant. This particular pipe had crept toward the cell 3 13/16" on the gallery side and approximately 1" on the cell side. To date the pipe has been returned 2 11/16" toward its original position on the gallery side. While the line has not yet been tested, the results are encouraging. It is also of interest to note that the flexible stainless tube liner which was installed in the steam pipe to flange No. 2 in Section 17 in August and reported in the August report, continues to operate satisfactorily, offering a second line defense method in case of complete failure of steam piping through concrete.

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 September 21, 1949 from X-103-U tank.

Agitator Shaft Seals - 224 Concentration Buildings

The sealing of agitator pedestal supports in the 224 Concentration Buildings, in an effort to eliminate plutonium contamination of the air in the operating cells which is discharged to the atmosphere, is in progress. Three precipitator tanks in 224-T have been sealed to date. During the early part of the coming month, the work will be continued in the 224-B Concentration Building. Air monitoring equipment installed in this building will permit better evaluation of the progress as these tanks are sealed. The water seal installed on the A-1 precipitator tank agitator shaft in B Plant during August continues to function satisfactorily.

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S Division

273-E Pickling Bath

As evidenced by the rapid drop in the level of the liquor in the 273-E maintenance pickling bath and by acid reaction and soft condition of the concrete at a test hole on the east side of the bath, it has developed a leak. The problem is under study.

[redacted]

POWER DIVISION
SEPTEMBER 1949

GENERAL

Coal shipments from the mines were discontinued on September 15 in connection with the coal miners' strike. Adequate stocks are on hand at present.

The coal storage pits in all areas were surveyed during the month and results indicated a favorable comparison to book figures.

Work is in progress to prepare the export line air trap vents for winter conditions.

On September 10 at 6:58 p.m., a severe voltage surge occurred on the electrical system which caused nearly all equipment in the areas to be interrupted.

PERSONNEL AND ORGANIZATION

No. of employees on payroll	September
Beginning of month	527
End of month	533
Net Increase	6

The indicated net increase is the result of the hiring of seven new employees, the transfer into the Division of two employees, and the transfer out of the Division of three employees.

100 AREAS

All areas experienced a new low rate of coagulant feed since the start of operations. A minimum of 5.4 ppm coagulant was obtained and results were entirely satisfactory.

Tests have been conducted on the condenser water system in the 100 B and 100 D Areas to determine the feasibility of operating the condenser water system with electrical driven pumps alone. Preliminary information indicates satisfactory operation with substantial operating savings possible.

On September 22 work was started in the 185 Deaerator Building in the 100 F Area to remove auxiliary deaerator piping and accessories.

Power Division

In the 100 B Area on September 21, the No. 10 process pump motor in the 190 Process Pump House failed during an attempted start.

In the 100 D Area on September 29, a 4-inch strainer in the solids injection system in the 105 Valve Pit failed during a solids purge, permitting relatively coarse particles of diatomaceous earth to pass into the process water.

In the 100 F Area, on September 21, a new 4-inch steam supply line to the Health Instrument animal farm was placed in service.

The No. 10 pump in the 100 F Area, 190 Process Pump House was out of service from September 12 to September 20, while electrical repairs were being made to the motor control circuit.

In the 100 D Area, the emergency generator was not available for service six hours on September 28 while repairs were being made.

100-H AREA

Construction work at this location was rapidly nearing completion at month's end. Preliminary acceptance inspections were made on the 181 River Pump House, the 182 Reservoir Pump House, and the 183 Filtration Plant on September 22, 28, and 29, respectively. Major items in these buildings remaining to be completed, include one motor driven pump unit at the 181 River Pump House, one filter plant supply pump, and several barometric condensers at the 182 Reservoir Pump House, and the repair of the east clearwell floor in the 183 Filtration Plant.

The water control valves in the 190 Tank Room have not operated satisfactorily. Major alteration to this equipment is now planned. The loose paint has been removed from the floor of two process water storage tanks at this location.

Work continues on the alignment and run-in of equipment in the 190 Process Pump Room with some improvement noted in equipment operation.

All outside steam and water lines are ready for service except the 14-inch export line to the 105 Pile Building.

The calibration of combustion controls is in progress in the 184 Boiler House.

The No. 4 pump in the 1906 Waste Water Pump House failed during the attempted run-in operation.

Power Division

200 AREAS

Planned shut downs of the ventilation system in the 234-5 Building were effected on September 10, 17, and 24, in order to adjust control equipment and to reduce fluctuations in zone pressures.

In the East Area work is in progress on the construction of extensions to the sewage disposal tile fields serving the "B" plant and 2700 Area.

300 AREA

On September 19, an 8-inch check valve was installed in the supply line from the east elevated water tank, replacing a faulty 8-inch altitude valve.

WHITE BLUFFS AND 101 AREA

Operations were normal throughout the month. There were 966,300 pounds of ice in storage at month's end.

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POWER DIVISION STATISTICS

From September 1, 1949

Through September 30, 1949

			AREAS			
			100-B	100-D	100-F	100-H
RIVER PUMP HOUSE (Bldg. 181)						
River stage - Feet above sea level		(max)	388.5	380.4	366.8	372.4
		(min)	386.2	378.7	365.3	370.7
		(avg)	387.8	379.7	366.0	371.6
River temperature	avg. °F.		62.6	63.5	64.4	-
Water to Reservoir	gpm avg. rate		39300	40800	37401	22351
RESERVOIR (Bldg. 182)						
Water to Filter Plant	gpm avg. rate		33644	35891	33039	20536
Water to Condenser System	gpm avg. rate		3882	3125	3823	1815
Water to Export System	gpm avg. rate		1774	1784	539	-
	gpm nor. rate		4097	4097	4097	-
Chlorine added #1 inlet	pounds		16355	23018	11000	0
FILTER PLANT (Bldg. 183)						
Filtered water Power House	gpm avg. rate		271	250	246	141
Filtered water to Process	gpm avg. rate		31863	30934	30085	0
Filtered water to Const.	gpm avg. rate		0	0	0	0
Filtered water to DR Process	gpm avg. rate		0	0	0	0
Filtered water Fire & San.	gpm avg. rate		163	169	212	0
Chlorine for Water Treatment	pounds		7110	4234	8000	13500
	ppm avg.		1.7	1.9	1.5	1.82
Lime for Water Treatment	pounds		24290	29734	21800	19700
	ppm avg.		2.0	2.3	1.8	2.7
Coagulant Water Treatment	pounds		66200	89739	71350	68000
	ppm avg.		5.4	6.9	6.0	9.2
Raw Water pH	pH avg.		8.02	7.97	8.10	8.0
Finished Water pH	pH avg.		7.74	7.76	7.70	7.77
Alkalinity, M.O. - Raw	ppm avg.		61	60	57	60
Finished	ppm avg.		59	57	54	58
Residual Chl. - Settled	ppm avg.		.35	.37	.26	.68
Finished	ppm avg.		.11	.10	.14	.41
Iron - Raw	ppm avg.		.06	.06	.07	.04
North Clearwell	ppm avg.		.02	.02	.02	.01
South Clearwell	ppm avg.		.01	.02	.02	.01
Hardness - Finished	ppm avg.		72	72	76	66
Turbidity - Raw	ppm avg.		2.7	2.6	1.0	2.0
Filtered	ppm avg.		-	0	0	0

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DECLASSIFIED

Power Division

From September 1, 1949

Through September 30, 1949

		100-B	100-D	100-F	100-H
POWER HOUSE (Bldg. 184)					
Steam generated - Total	M pounds	85294	84391	88254	43200
Avg. rate	lbs./hr.	118300	117047	122405	59917
225 psi Steam plant (est.)	M pounds	71978	71213	74488	
15 psi Steam plant (est.)	M pounds	351	351	351	
Coal consumed	Tons	6561	6442	6791	3429
Coal in storage (est.)	Tons	24225	29222	20719	15861
DEAERATOR PLANT (Bldg. 185) AND 190-H TANK ROOM					
Water flow	gpm avg. rate	31613	30684	29835	0
Chemicals consumed:					
Dichromate	pounds	22000	22000	20000	3000
Sodium Silicate	pounds	0	0	0	0
Chemical Analysis:					
pH	pH avg.	7.65	7.67	7.65	-
Dichromate	ppm avg.	1.9	1.9	1.9	-
Silica	ppm avg.	-	-	-	-
Dissolved Iron	ppm avg.	.02	.02	.02	-
Free Chlorine	ppm avg.	.05	.13	.14	-
PROCESS PUMP ROOM (Bldg. 190)					
Total water pumped	gpm avg. rate	31438	30509	29660	0
	gpm nor. rate	32207	33208	31420	0
Water temperature	avg. °F.	65.8	65.8	65.7	-
VALVE PIT (Bldg. 105)					
Chemicals consumed:					
Solids	pounds	2200	2850	850	850
Chemical analysis:					
A, B, C, & D Headers					
	Standard limits				
pH	7.5-7.8	pH (max)	7.65	7.65	7.70
		(min)	7.60	7.55	7.60
		(avg)	7.64	7.61	7.65
S_1O_2		ppm (max)	-	-	-
		(min)	-	-	-
		(avg)	-	-	-
$Na_2Cr_2O_7$	1.8-2.2	ppm (max)	1.9	2.0	2.0
		(min)	1.7	1.9	1.8
		(avg)	1.8	1.9	1.9
Iron		ppm (max)	.02	.03	.03
		(min)	.01	.01	.01
		(avg)	.02	.02	.02
Chlorides		ppm avg.	1.6	1.8	1.4

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DECLASSIFIED

) Power Division

From September 1, 1949

Through September 30, 1949

200 AREAS

		200-E	200-W
RESERVOIR (Building 282)			
Raw Water Pumped	gpm avg. rate	1712	2391
Filter Plant (Building 283)			
Filtered Water Pumped	gpm avg. rate	330	733
Chlorine Consumed	lb.	280	328
Alum Consumed	lb.	1649	3640
Chlorine Residual - Sanitary Water	ppm	.7	.3
POWER HOUSE (Building 284)			
Steam Generated - Total	M lb.	13029	24775
Steam Generated - Ave. Rate	lb./hr.	18095	34409
Coal Consumed (Est.)	tons	1328	1762
Coal in Storage (Est.)	tons	10809	12876

)

300 AREA

POWER HOUSE (Building 384)		
Steam Generated - Total	M lb.	6899
Steam Generated - Avg. Rate	lb./hr.	9570
Coal Consumed - Total (Est.)	tons	616
Coal in Storage (Est.)	tons	2327
SANITARY AND FIRE SYSTEM		
Sanitary Water from 3000 Area	Gal.	37,013,300
Well Water Pumped - Total	Gal.	828,000
Well Water Per Day	Gal/day	1,261,370
Well Water	gpm avg. rate	876
Chlorine Residual	ppm	.40

MISCELLANEOUS AREAS

WHITE BLUFFS		
Ice Manufactured	lbs.	39,000
101 SHOPS		
Coal Consumed	tons	95

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[redacted]

INSTRUMENT DIVISION
MONTHLY REPORT

SEPTEMBER, 1949

GENERAL

For employees in the Instrumnnt Trainee classification a series of classroom discussions have been planned. This program will begin next month to supplement the present on-the-job training and is necessary to accelerate their training to meet job requirements.

100 AREAS

General

Complete shift coverage was inaugurated at 100-H Area on September 26, 1949. Work back-log has also increased with the receipt of work orders from H. I. and Technical Divisions covering such jobs as foil tests, extra P. C. set-up, special monitoring equipment, etc.

Construction forces were removed from 105-H on September 23, 1949 with only small clean-up crews remaining in the power buildings.

Overtime work was necessary on 100-H Area to complete acceptance tests on schedule with the construction forces.

100-H Area

Acceptance testing is virtually complete. Removal of construction forces added some corrective maintenance work to backlog. This, however, was met by borrowing and utilizing manpower from the operating 100 Areas and the 300 Area Development Group.

Process water to the unit is expected by October 12, 1949. At that time it is anticipated that further complications may arise in the Power Calculation and Pressure Monitor systems. Arrangements have been made for the representatives of the Bailey Meter Company, now on the plant site, to remain until operation of power level instruments has proven satisfactory under normal conditions. The pressure monitor units are being recalibrated by construction forces and installed by the Instrument Division to conform to the new orifice pattern. These units develop leaks when used and all units are to be returned to the vendor for repair as soon as possible. This repair service will also be completed on the units for 105-DR.

[redacted]

200 AREAS

General

Erratic operation of all electronic instruments in the 200 Areas has been experienced during the past month due to the wide voltage fluctuations in the power system. Line voltage fluctuations between 97 and 140 volts have been noted on indicating instruments. This is outside the limits of control of the Sola regulating transformers as well as the self-contained electronic voltage regulating systems.

234-5 Building

Hood 8. H. F. rotameter repair was greatly reduced during the month. It appears that steam-tracing of H. F. lines has reduced condensation sufficiently to reduce the problem.

Hoods 25-26. Leak detection on the vacuum systems has been completed. The G. E. mass spectrometer leak detector was dismantled, cleaned and reassembled in an effort to regain the high sensitivity which is possible with this instrument. One thermocouple in Hood 25 was found to be faulty at the terminal block and was replaced.

Neutron Counters. Alarms have been installed on the stationary process counters. The instruments are ready to operate pending the establishment of final primary element location and the desired tolerance levels.

Supply Air Throttling Dampers. It has been determined that the slow response of the pilot positioners to a change from the controller is responsible for the sluggish operation of the control system. A Taylor valve positioner has been substituted for the Johnson Service positioner on the Zone 2 damper. Indications at this time are that more nearly satisfactory control is possible with increased sensitivity of pilot positioners.

300 AREA

Manufacturing Sections

A slight increase has been noted in the number of Technical Division work orders assigned to the Machine Shop; however, the work load is not increasing sufficiently to utilize the manpower provided for this service. To date six machinists have been added to the rolls for the second shift.

[redacted]

C-219 - Additional Health Instruments

The project is approximately 94% complete. All circuit elements and fabrications are complete for the 12 Probe Type C.P. Meters. Wiring of the units can be started upon receipt of special cable which is now on order.

C-290 - Fabrication of Neutron Spectrometer

The Technical Division is continuing its series of checks on the mechanical assembly of the instrument. The special BF_3 chamber has been received. Details for the design of the chamber mount have not been completed.

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

The Constant Air Monitor Probes requested on this project have been fabricated. An estimate has been submitted to cover the manufacture of additional instruments included in the project.

P-11 Project

Fabrication of shop made instrument equipment is now under way.

Several months of experimentation has produced a technique for the quartz coating of aluminum surfaced mirrors. Ordinary optical mirrors last about three weeks in the canyon buildings before the acid fumes destroy their surface. The first quartz coated mirrors have been installed approximately three months without serious deterioration. The coated mirrors will stand about fifty times as much abrasion as uncoated mirrors, therefore, they can be cleaned instead of being replaced.

All the optical instruments for the 100-H Area were installed and tested.

A suitable substitute for Beckman P-1 tubes is still being sought. Field tests are being correlated with shop experimentation to find a usable tube.

A spray of water from a leaky hose seeped into the AC-switch of the E-balcony Micromax recorder in Building 321 and caused a short circuit. The extended handle of the switch has been removed and the hole plugged to prevent recurrence. The switch for the Brown recorder, located in the canyon, was also moved inside the case as a precautionary measure.

[redacted]

Temperature Mapping for 100 Areas

The rotating mercury jet switch has been found to be applicable at a rate of 400 to 500 contacts per second. Amplitude of introduced noise is only about 5 microvolts. Improvements in shielding and the use of copper contacts reduced the undesired transients of switching voltages. A report describing the mercury jet switch including a discussion of the proposed temperature mapping system is being prepared. Drawings have been completed and work is proceeding on the IBM system of temperature mapping.

DESIGN AND CONSTRUCTION

100-H Area

Difficulty was experienced with the 30 inch butterfly valves in the 190 Building tank inlet lines. These valves were not sized properly and were incapable of the great pressure drop encountered. This matter was discussed with the vendor and the manufacturer and arrangements made to furnish new valves and new control drives for this service.

Redox

Nineteen Instrument Engineering Flow Diagrams and two drawings of suggested panel layouts were completed and received final approval.

Instrument specification sheets for those instruments covered by the above are complete in rough draft form. Further details must be added to these sheets as range, scale and other information is developed.

[redacted]

[redacted]

MAINTENANCE DIVISION
MONTHLY REPORT
SEPTEMBER 1949

GENERAL

The Maintenance Division backlog of work at the end of the month was 16,829 mandays, of which 11,959 mandays was Minor Construction work. The total backlog decreased 7.6% over August.

100 AREAS

Process tube #0574 was removed from the "B" pile for technical study and replaced with a 72-S aluminum tube. Process tubes #3469, #1758, and #1659 were replaced in the "D" pile. The last two replacements were necessary because of stuck process material. For the same reason, tube #4280 was removed from the "F" pile. Replacement will be made at a later date.

Vertical safety rod #31 was removed from the "B" pile and replaced with a chrome plated rod and rod guide; also, #18 and #31 were replaced in the "F" pile, and due to gas leakage the thimbles were also replaced.

It was necessary to buff and clean the front face Vanstone flanges on the DR pile in an attempt to stop pitting from corrosion. This was occurring from atmospheric moisture.

During the past month, a total of nine members of supervision and forty-eight mechanics have been assigned and located in the 100-H Area. Four rotating shifts have been established and preparation for start-up is proceeding as individual facilities are being completed by construction and turned over to Operations.

200 AREAS

Special de-entrainment filters have been fabricated and are being installed in the caustic lines to process hoods 5, 6, 7, 29 and 30 in the 234-5 Bldg. to overcome frequent line plugging. Also, the stainless steel weight factor and specific gravity lines to hoods 5, 6 and 7 developed corrosion leaks and were replaced with Saron tubing.

The 234-5 Machine Shop completed manufacture of a replacement male punch for the process fabrication press. The replaced punch, manufactured on another site, had shown a strain crack on the face upon arrival.

The control board and assessory piping was reworked and tested in Sections 18 and 19 in the "B" Canyon Building in order to activate these cells for production use.

The 200 East Area fabrication shop completed twenty cell connection and vessel piping details for replacement purposes to insure continuity of operations.

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A special device was fabricated and successfully used to pull a Canyon Building cell pipe line back to normal position. The pipe line had crept into the concrete wall to such an extent that it had been abandoned because of inaccessibility to the flange.

300 AREA

Enlargement of the remelt furnace in the 313 Building was completed and placed in operation.

Two inserted tooth metal cutting saws have been place in production service in the 314 Building. In order to sharpen these saws a special Cochrane-Bly saw grinder has been installed in the Maintenance Shop.

101 SHOPS-GENERAL

Extensive roof repairs were commenced during the month.

Experimental work on drilling equipment for graphite tube bars and end milling equipment has been curtailed during the past month due to fabrication requirements on the Nine-Tube Mock-Up for the Technical Division.

101 SHOPS-OPERATION

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

Machining work on the Nine-Tube Mock-Up for the Technical Division is nearing completion. It is anticipated that this work will be completed and all materials delivered to the 300 Area not later than October 5, 1949.

The fabricating and assembling of the Ink Facilities for the Technical Division has been completed and test runs made which indicate that satisfactory test results will be obtained.

Special machining work on graphite test dowels for the Technical Division was completed during the month.

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ELECTRICAL DIVISION

SEPTEMBER, 1949

GENERAL

The backlog of scheduled work for the Division at month end is 10,928 mandays, a reduction of 946 from the previous month end. This includes a further elimination of 437 mandays since several projects are approaching completion with actual time expenditure less than estimates. A substantial part of the remaining reduction was in the Telephone Section, associated with work necessary prior to change-over to dial system.

The total Divisional personnel at month end was 295, a net increase of 19 as predict in the June report. Most of the men have been assigned to 100-H for start-up, or to 100-F because of heavy minor construction backlog.

The load chart for the peak day of the month, September 13, is attached showing a peak of 60,100 KW for the entire system with coincidental demand of 20,100 KW for the combined 66 KV and 115 KV systems (Richland, 300 Area and vicinity). The increase is seasonal and in comparison with a year ago; the increase of 4700 KW has taken place entirely in the Village.

A record of 1137 consecutive working days without a lost time injury was completed on September 15, 1949 when Mr. John Huddle (Lineman) accidentally came in contact with a 6900 volt circuit while working on fire alarm circuit in Richland Village. There the combined efforts of Linemen of his crew, the Fire Department, and the Hospital, his life was saved. He will be hospitalized for severe head burns for several months.

A study has been completed for power supply to several proposed new Technical Center sites.

Design and Installation Standards for outside electrical installations, including substations and street lighting were prepared and presented to the Electrical Standards Committee for review.

AREA ACTIVITIES

In the 100-B Area on September 21, the 800 HP Process Pump Motor No. 10 failed during start-up. This was the first failure to this motor, but the ninth among the 800 HP Westinghouse motors since starting operations. The failure was generally familiar to all others in the end turns between coils within a phase group.

Project C-279 (Remodeling 1704-B) is essentially complete.

Project C-184 (Animal Farm) is electrically 98 percent complete.

Single shift coverage was started on September 26 in the 100-H Area. Building 105-H operating responsibility was assumed on September 30, work orders having been issued to complete special installations, and to effect minor corrections. Inspection and testing of electrical equipment in all other buildings continues at a good rate and is essentially complete.

[redacted]

In Buildings 222-B and T, Rooms No. 6, a master switch system has been installed at the request of the Technical Divisions so that all circuits in this room are controlled from a common switch through a relay system.

In Building 234, after five failures of the electric furnace in the No. 14 hood, the leads were changed from Nichrome to Molybdenum, after which no further failures have occurred.

In the 300 Area, canning and dipping furnace element failures have been reduced from fourteen to five per month by using flanged crucible, raising heating elements, and discarding flux contaminated refractures.

TRANSMISSION AND DISTRIBUTION

Project C-177, (115 KV system) substation installations, is progressing slowly, awaiting final materials expected early in October. The 115/2.3 KV station is 96 percent complete and ready for tie-in; the 2.3 KV/440 volt station is 40 percent complete.

On Project C-322, 304 poles were Osmose butt treated in the 700 and 1100 Areas, and 112 poles were condemned of which 40 were replaced immediately.

A number of severe line surges occurred during the month on September 5, 7, 10 and 26, all arising on the Bonneville Power Administration system. That of September 10 at 6:57 p.m. resulted in unscheduled outage and "scramming" of all 100 Areas, as well as loss of ventilation in Building 234-5. Critical Power Grade "Y" was established for 30 minutes until Bonneville's system was restored to normal. The subject of surges was discussed with Bonneville operating and engineering officials at Richland in the presence of Atomic Energy Commission representatives. Several of these disturbances resulted from relay testing errors at Midway, and we are assured that necessary steps will be taken to prevent recurrence. At this meeting, operational relationships between Hanford and Bonneville dispatching groups were reviewed, and it was agreed that considerable improvement and understanding of each other's problems would result from visits of our Dispatchers to their station and vice versa. A schedule of visits has been established tentatively, and the first visit has been made.

A one half hour outage of the 66 KV system on September 4, originating at Hanford, affected the 300 Area. The cause could not be determined. Since this date, the 300 Area has been connected to the 115 KV system via the North Richland 115/66 KV step down bank.

TELEPHONE SECTION

All necessary work has been done to assure that the 10:00 p.m., October 7 date for cut-over to dial service in Richland will be met.

The new White Bluffs dial exchange was placed in service at 10:00 p.m. on September 24. This exchange now serves White Bluffs, 100-D and 100-H, and will eventually include 100-F Area.

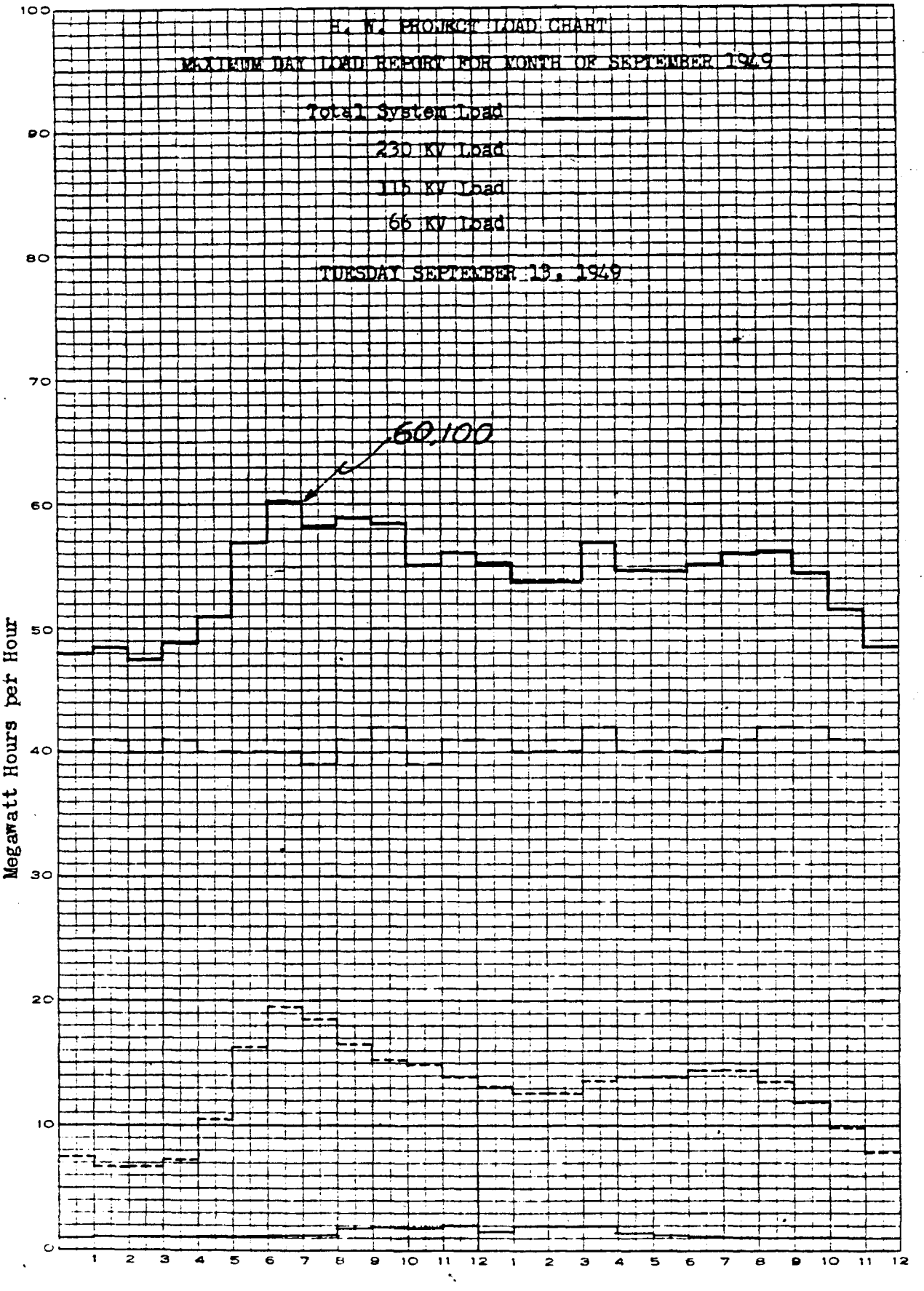
POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING SEPTEMBER 30, 1949

ITEM	ENERGY - MW HRS. August	ENERGY - MW HRS. Sept.	MAX. DEMAND - KW August	MAX. DEMAND - KW Sept.	LOAD FACTOR - % August	LOAD FACTOR - % Sept.
230 KV SYSTEM						
A-2 Out (100-B)	7,270	7,120	11,300	11,400	86.5	86.7
A-4 Out (100-D)	7,440	7,120	12,300	12,100	81.3	81.7
A-5 Out (100-H)	1,368	3,564	4,950	9,360	37.1	52.9
A-6 Out (100-F)	6,930	6,670	11,000	11,800	84.7	78.5
A-8 Out (200 Areas)	2,920	2,860	4,500	4,400	87.2	90.3
TOTAL OUT	25,928	27,334	44,050**	49,060**	79.1	77.4
MIDWAY IN	26,262	27,743	40,000*	44,000*	88.3	87.6
Transm. Loss	334	409				
Percent Loss	1.3	1.5				
66 KV SYSTEM						
B7-S10 Out (W.Bluffs)	291	225	968	855	40.4	36.5
B9-S11 Out (100-H)	72	-	760	-	12.6	-
Hanford Out	318	317	500	500	85.5	88.0
TOTAL OUT	1,373	542	4,180**	1,355**	44.1	55.6
HANFORD IN	1,376	632	3,000*	2,700*	61.6	32.5
Transm. Loss	3	90				
Percent Loss	.02	14.2				
115 KV SYSTEM						
B3-S4 Out (300 Area)	340	326	672	690	68.0	65.6
B3-S5 Out "	352	388	1,280	1,200	37.0	44.9
B1-S4 Out (N.Richland)	1,406	1,195	2,765	2,361	68.3	70.3
BB1-S1 Out (Richland)	2,956	3,218	6,300	9,180	63.1	48.7
BB1-S2 Out "	2,522	2,874	6,120	9,000	55.4	44.3
TOTAL OUT	6,884	8,001	15,185**	22,431**	60.9	49.5
Benton In	4,104	2,256	7,920*	18,180*	69.6	17.2
S.Richland In	3,024	5,568	6,120*	15,840*	66.4	48.8
TOTAL IN	7,128	7,824	14,040**	34,020**	68.2	31.9
Transm. Loss	244	-177				
Percent Loss	3.4	-2.3				
PROJECT TOTAL						
230 KV Out	25,928	27,324	44,050**	49,060**	79.1	77.4
66 KV Out	1,373	542	4,180**	1,355**	44.1	55.6
115 KV Out	6,884	8,001	15,185**	22,431**	60.9	49.5
TOTAL OUT	34,185	35,867	63,415**	72,846**	72.5	68.4
230 KV In	26,262	27,743	40,000*	44,000*	86.3	87.6
66 KV In	1,376	632	3,000**	2,700**	61.6	32.5
115 KV In	7,128	7,824	14,040**	34,020**	68.2	31.9
TOTAL IN	34,766	36,199	55,100*	60,100*	86.8	83.7
Transm. Loss	581	332				
Percent Loss	1.7	0.9				

* Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System---97.8
Average Power Factor - 115 KV System---89.6
Average Power Factor - 66 KV System---94.9

3 Total output KWH on 115 KV system shows larger than input due to a temporary tie-in with North Richland 66 KV system and possible inadequacies arising from single-phase metering on the Bonneville Power Administration system.



EUGENE DIETZGEN CO.
MADE IN U.S.A.

ONE DAY BY HOURS

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Classification [redacted] Changed to [redacted]

By Authority of HANFORD OPERATIONS OFFICE NON-TECHNICAL DOCUMENT REVIEW BOARD. [redacted], Chairman

Date: 12-18-57

DECLASSIFIED

TRANSPORTATION DIVISION
MONTHLY REPORT
SEPTEMBER 1949

GENERAL

Transportation Division personnel forces were increased by four employees during the month, from 710 to 714 by ten new employees and rehires, three transfers in, seven terminations, one transfer out, and one removal from roll - illness. The total force was assigned to Minor Construction activities.

J. W. Brands, Assistant Superintendent, was transferred from the Transportation Division to the Project Engineering Divisions as Superintendent of the Control Division, effective September 15, 1949 in accordance with Nucleonics Department Organization Announcement B-32.

RAILROAD ACTIVITIES

Commercial inbound cars decreased approximately 12% over August as a result of the coal strike during the latter part of the month. Process movements continued on a normal level but were made on a revised shipping schedule.

Completed annual inspection of all cask cars.

Locomotive 39-3717 was repaired and returned to service in the Pasco Warehousing area.

Railroad track maintenance on all five sections and the Pasco Warehousing area continued in a routine manner with the replacement of defective switch and cross ties, surfacing and lining of track, installation of blacktop crossings, and hauling of materials from Edna to Pasco. Approximately six miles of track were made serviceable for Northern Pacific switch engine operations.

AUTOMOTIVE ACTIVITIES

Area and Village Bus Systems registered a combined decrease of 7,767 passengers over August, but this does not represent a true decline in view of the thirty day month which included Labor Day. Passenger traffic has increased to 100-H Area and for Minor Construction activities.

Effective September 6, 1949, a five cent bus fare was established for all school children. This arrangement, plus an anticipated seasonal pick-up, is expected to result in a steady increase in passenger traffic.

Burning of Snake River Bridge September 9 necessitated routing of Off-Plant passenger cars over Umatilla Ferry until September 23 when the installation of a pontoon bridge across Snake River was completed and opened for traffic.

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Classification [redacted] Changed to [redacted]

By Authority of [redacted] NON-TECHNICAL DOCUMENT REVIEW BOARD. [redacted] Chairman

Date: 12-18-57

DECLASSIFIED

Transportation Division

The use of 700 Area Motor Pool cars for distant off-plant trips has been discontinued. Fully serviced late model cars from the 1131 off-plant line will be made available for such trips.

Replace eleven units of military four wheel drive equipment with commercial vehicles to reduce operating costs.

The Planning and Methods Section began a study on establishing Equipment Rental Rates.

Winterizing of automotive equipment was started during the month and is approximately 50% complete.

CONSTRUCTION AND LABOR ACTIVITIES

Completed seal coating of approximately 21 miles of Project roads. Used 212 tons of pre-mix material in repairing railroad crossings. Re-screened approximately 3,000 cubic yards of chips.

Approximately 51 carloads of excess lumber were loaded and shipped from the Project.

Labor and transportation facilities were supplied for Projects C-103, C-163, C-177, C-184, C-192, C-268, C-271, C-274, C-276, C-287, C-291, C-294, C-331, C-334, C-340, Well Drilling Operations, and the 101 Area.

DECLASSIFIED

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

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PROJECT ENGINEERING DIVISIONS

UNCLASSIFIED

MONTHLY REPORT

SEPTEMBER 1949

PRESENT STATUS OF WORK

Projects Authorized and Under Construction

100 AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-172	Dismantling of Equipment in Demineralization & Deaerating Plants	15	8-19-47	$ 486,000
C-184	Experimental Animal Farm - Part I. (Part II awaiting authorization for additional $47,900)	95	4-28-49	288,000
C-192	Biology Lab. Bldg. 108-F, Parts I and II.	15	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 (Modification of original design)	0	11-30-48	88,000
C-323	Vertical Rod Replacement - 105 B, D & F	75	3-10-49	280,600
C-334	P-10 Alloy Facilities	96	1-28-49	242,000
C-340	P-11 Project (Part II awaiting authorization for additional $198,000)	35	6-28-49	130,000
	TOTAL Estimated Cost Active 100 Area Projects			$ 2,653,000

200 AREAS

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

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Project Engineering Divisions

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Projects Authorized & Under Construction (Cont'd)

200 AREAS (Cont'd)

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-268	Sanitary Tile Field Addition 200 E&W (Additional $31,000 I.M.E. authorized by A.E.C.)	59	(Rev. Dir.) 8-17-49	$ 91,000
C-337	Dissolver Off-Gas Filtration Facilities	0	6-22-49	337,000
	TOTAL Estimated Cost Active 200 Area Projects			$ 478,000

300 AREA

C-219	Construction of Additional H. I. Instruments	94	1-27-48	$ 97,200
C-227	Conversion of Offices to Labs Bldg. 3706 & Construction of 3707-C Change House	98	3-15-48	557,000
C-287	Experimental Metallurgy Lab. Bldg. 3730	25	12-2-48	140,000
C-330	Improved Ventilation 313 & 314 Bldg.	2	9-24-48	540,000
C-331	Rehabilitation of Bldg. 321 (Including remodeling & ventilation)	92	1-31-49	227,000
C-338	Nine Tube Test Unit - B, D & F Blocks	16	7-13-49	25,400
	TOTAL Estimated Cost Active 300 Area Projects			$ 1,586,600

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Project Engineering Divisions

Projects Authorized & Under Construction (Cont'd)

GENERAL PLANT AREAS

Project Number		% Phys. Complete	Date Auth.	Est. Cost
C-138	Richland Telephone Exchange Bldg. 702	93	5-12-47	$ 470,500
C-144	Additional Tel. Cables - Richland	76	5-12-47	71,000
C-177	115 KV Power Transmission Line	95	8-14-47	1,364,000
C-276	Plant Telephone Project (Part II partially authorized for additional $101,000)	80	(Rev. Dir.) 9-16-49	1,333,000
C-291	Security Fences - All Areas	38	10-18-48	441,800
C-279	Improvement to Area Administration Buildings (Project re-activated at request of A.E.C.)	91	(Rev. Dir.) 5-18-49	167,800
C-333	H.I. Operational Survey Insts.	1	4-20-49	85,000
C-322	Osmose Treatment of Plant Elec. Poles & Replacements Where Necessary	61	2- 1-49	154.000
	TOTAL Estimated Cost Active Plant General Projects			$ 4,087,100

Informal Project Requests Authorized

ALL AREAS

Request Number		% Phys. Complete	Date Auth.	Est. Cost.
M-711	Experimental Algae Filter - 107 Bldg.	1	5- 6-49	$ 13,000

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Project Engineering Divisions

Informal Project Requests Authorized (Cont'd)

Request Number		% Phys. Complete	Date Auth.	Est. Cost
M-713	Flexible Vertical Rod Studies	8	7-19-49	$ 18,500
Med-1	Surgical Wing Air Conditioning - Kadlec Hospital	2	5- 5-49	16,100
M-715	IBM Installation for Individual Tube Accounting - 105, B, D, F and H	0		13,400
M-716	Preliminary Engineering & Project Preparation - Parallel Operation of 221 T&B Cells	2	6-24-49	10,000
Serv-9	Badge House Addition 300 Area	0	12-15-48	14,500
			TOTAL	85,500
CURRENT GRAND TOTAL OF AUTHORIZED PROJECT WORK				$ 8,890,200

Projects Being Routed for Approvals

E. R. No.	Project No.		
2469	C-326	Underground Geological & Hydrological Investigation Program Including Test Wells & Other Fac. (Held up awaiting conference with representatives of U.S.G.S.)	$ 193,000
2504		Installation of Laboratory Furniture in 271 T&B	24,000
A-3062	C-339	300 Rolling Mill	1,340,000
E-406	C-341	Additions to Richland Electric Distribution System	173,000
A-1093	C-340 Part II	P-11 Project Part II	198,000
A-1097	C-346	Facilities for Exponential Experiments	391,000

[redacted]

Project Engineering Divisions

Projects Being Routed for Approvals (Cont'd)

E. R. No.	Project No.		
A-1100		Galvanizing & Replacement of Process Tube Nozzles B,D,F & DR	$ 789,000
941	C-184	Experimental Animal Farm - Part II (Waste Disposal System)	47,900
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	33,700
		TOTAL Estimated Cost of Projects Routed for Approval and Authorization	$ 3,263,450

Project Engineering Divisions Area Reports

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

100 AREAS

E. R. No.		% Engineering Complete
A-1001	As-Built Drawings	(Continuous Program)
A-1002	G. E. C. Study	(Continuous Program)
A-1034	Alterations to Bldgs. 186 & 185	38
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

Project Engineering Divisions Area Reports (Cont'd)

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

100 AREAS (CONT'D)

E. R. No.		% Engineering Complete
A-1083	Hot Thimble Mock-Up	100
A-1085	Prepare Project for Pile Operation with 100% CO_2 Atmosphere, 100 F Area	15
A-1086	High Tank Control Valves	70
A-1089	Design Draft Free Glass Blowing Table P-10	Cancelled
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-1099	Magazine Feeding Induction Furnace Lid	100
A-1100	Nozzle Galvanizing and Replacement	50
A-1101	IBM Equipment	75
A-1104	Prepare Informal Request for Repairs to 107 Basin	90
A-1106	Far Side Bracing	80
A-1110	Pile Clearance - Near Side	65
A-1111	Design 5" Single Hole Cash	15
A-1112	Record Tear - #4 Baffle 105F Downcomer	50
A-1113	Dry Air Supply - Vertical Rod Thimbles	10

Project Engineering Divisions

Project Engineering Divisions Area Reports (Cont'd)

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

200 AREAS

E. R. No.		% Engineering Complete
2266	As-Built Drawings	(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	60
2493	Check Elevation of Inlet Duct Bldg. 291-B	40
2501-R	Prepare Project for Complete Parallel Operation Bldgs. 221T-B	5
2502	Recommend Portable Ventilation Equipment for Dry Box Hoods Bldg. 234-5	30
2503	Prepare Project for Duct Level Floor Bldg. 234-5	60
2508	Design and Install De-entrainment Chambers for Hood #5 Bldg. 234-5	100
2509	Design a Sparger for the Reactor in Hood #5 Bldg. 234-5	50
2510	Design, Fabricate and Install a De-entrainment Chamber in Hood 29, Bldg. 234-5	100
2513	Prepare Project for Paneled Hood in Rear of Hoods 4 to 8 - Bldg. 234-5	50
2514	Make Engineering Study of "AA" Fiberglas for Project C-337	5
2515	Prepare Engineering Report on Use of New Type Steam Jet - Bldg. 221 & 224	0

Project Engineering Divisions Area Reports (Cont'd)

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

300 AREA

E. R. No.		% Engineering Complete
A-3002	As-Built Drawings	(Continuous Program)
A-3060	Temporary Melting & Fabrication Bldg. (Designs for Project C-287)	92
A-3061	Increased Ventilation - 313 & 314 Bldgs. (Designs for Project C-330)	69
A-3062	Install Rolling Mill - 300 Area (Designs for Project C-339)	18
A-3066	Revise Maps - 300 Area Water and Sewer Systems	10
A-3067	Billet Lifting Tongs (Alternative method being considered)	60
A-3069	Solvents Storage - 3706 Building (Cancelled)	2
A-3070	Study Ventilation 3706 Requirements to Provide 40% Humidity	20
A-3075	Design for Nine Tube Mock-Up for 105 BDF Design (Designs for Project C-338)	90
A-3076	Prepare Project for Chip Pickling and Metal Fines Recovery	5
A-3077	Prepare Project for Three Automatic Screw Machines 313 Building	45
A-3080	Design and Estimate Loading Platform & Acid Storage Area, Bldg. 3706	2
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	20
A-3084	Secure Engineering Data for Blending 66% Hydrogen and 31% Propane	100

Project Engineering Divisions Area Reports (Cont'd)

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

GENERAL PLANT AREAS

E. R. No.		% Engineering Complete
872-R	Coal Pile Surveys and Computation - 100 B, D & F Areas	100
972-R	Survey River Bottom - 100 B, D & F Areas	50
A-420	As-Built Drawings of Plant Railroad	97
A-452	Plant Telephone Project (Design work for Project C-276)	95
A-526	Special Field Information for 300 Area As-Builts	75
A-532	Design Work for Project C-192 - Construction of Biology Lab. - Bldg. 108-F, Pts. I, II & III	67
A-536	Additional Capacity for Sewage Lift Pumps Richland	35
A-537	Survey for Maintenance of R.R. Inside Restricted Areas	20
A-541	Design & Survey for Railroad and Spurs to Redox Plant	100
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	10
A-546	Prepare Project for Engineering Costs - Hot Chemical Works 200 E Area	95
A-547	Prepare Project for Extension of Burial Ground - 300 Area	100
A-548	Prepare Project for Solvent Storage Facilities - 300 Area	0
A-549	Prepare Project for Cylinder Storage Dock - 300 Area	0

Project Engineering Divisions Area Reports (Cont'd)

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

GENERAL PLANT AREAS (CONT'D)

E. R. No.		% Engineering Complete
A-550	Design for Addition to Lldg. 3745	0
A-551	Design for Concrete Retaining Wall - Coal Storage Yard, 300 Area	100
A-962	Designs for 115 KV Power Line Through Richland (Project C-177)	95
E-403	Install Traffic Signals at Richland Railroad Crossings	75
E-405	Electrical As-Built Drawings	(Continuous Program)
E-406	Prepare Project - Additions to Village Distribution System	25
E-407	Prepare Project - Inst. Htrs. on Evacuation Busses & Service Facilities	65
E-411	Study Design & Est. Cost of Dual Feed of Sewage Lift Station	55
E-413	Study & Project - Telemetering 115 & 230 KV Lines & Remote Control on 115 KV Substation	20
E-417	Hood Alarm System Bldg. 3706	100
E-420	Additional Hood Exhaust Alarm System Bldg. 3706	100
941	Designs for Experimental Animal Farm - Project C-184	96
883-R	Survey New Coal Storage Pit - 300 Area	100

ENGINEERING STUDIES

WORK COMPLETED		DATE
E. R. 4365	Rod Handling Method	9-9-49

ENGINEERING STUDIES (CONT'D)

WORK SCHEDULED			% COMPLETE
E. R. 4336	-	Review Oil Coding System	90
E. R. 4346	-	Welding Line Analysis Bldg. 313	50
E. R. 4347	-	Frost Test Line Improvement Bldg. 313	70
E. R. 4361	-	Chip Recovery Method	95
E. R. 4362	-	Mfg. Divisions Personnel Analysis	25
E. R. 4363	-	P. E. D. Personnel Analysis	75
E. R. 4365	-	Methods Studies, "P" Division, 300 Area	
	-	Rod Machining	95
	-	Bronze Pot Cycle Changes	80
	-	Machining Scrap Reduction	95
	-	Canned Slug Reject Reduction	95
	-	Welding and Inspection Line Analysis	75
	-	Slug Canning Line Analysis	20
E. R. 4366	-	Welder Classification Tests	75
E. R. M714	-	Electrical Power Conservation	50
Routine	-	Civil and Architectural Standards	-
E. R. 4368	-	Lubrication Specifications Bldg. 3706	0

BACKLOG SUMMARY

	Work on Hand 8-31-49 Estimated Man Days	Work on Hand 9-30-49 Estimated Man Days
Studies	269	304
Project & Design	7,155	7,700
TOTAL	7,424	8,004

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TECHNICAL DIVISIONS

September 1949

SUMMARY

Pile Technology Division

No increase in elevation of the center of the roof and no significant outward motion of the top center of the side shields were observed at any of the piles during the month. However, tube bowing traverses demonstrate that graphite expansion is continuing in the cooler regions of the piles.

The early addition of Freon during graphite purification is recommended for any future purification work.

A series of technical tests during start-up of the H Pile in October have been formulated. Of particular interest is the measurement of the reactivity temperature coefficients of a dry Hanford lattice.

Corrosion pits have been detected beneath deposits of corrosion products inside of process tubes. Further study is in progress.

Nine extraction runs were made on Line 3 of the P-10 Project, and Line 4 was calibrated and ready for operation at month end. Slugs with seven months exposure were extracted experimentally without difficulty.

Separations Technology Division

A carefully planned study of all tank calibrations, sampling methods, and basis assays is being carried out in all of the Separations Plants, in an effort to improve material balance accountability. Production testing of cheaper grades of hydrofluoric acid has been essentially completed with satisfactory results. Plant assistance activities in Purification and Fabrication succeeded in correcting off-standard conditions in "wet chemistry" operations. Considerable attention has been devoted to ironing out operating difficulties in Hoods 17, 19, 22, and 26 in Building 234-5.

Additional Redox development studies in packed column operation have extended performance data for 1-inch Raschig ring packing and established preliminary operating data for the solvent extraction treatment of simulated recovered metal waste feeds. Installation of the new canyon ventilation system in Building 321 is approximately 95% complete. Installation of test equipment for waste metal feed preparation studies is approximately 50% complete. Life-testing of several possible "hot" pumps has been successfully continued.

In the research laboratory, the sodium diuranate waste metal feed preparation process has been tested on a 20 ml. scale with current metal waste, producing a 270-fold reduction in phosphate content. A near-satisfactory precipitation method of uranium recovery from off-standard Redox waste has been developed.

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The behavior of various ruthenium species during ozonization has been studied further, as have Filtrol scavenging of zirconium and columbium, hexone reaction kinetics, Redox system pH's, the "pulse" column, and Redox-234-5 coupling by plutonium phenylarsonate precipitation.

In the 234-5 process development laboratory, additional runs have been carried out with sulfate-free plutonium peroxide processed through reduction, in an effort to substitute peroxide for oxalate purification. Volume reduction during recovery concentration has also been further studied. Improvements in plutonium shape radiographic and autoradiographic techniques have been developed.

Stack gas treatment studies have been devoted to testing "AA" Fiberglas for establishment of final design for the projected dissolver off-gas filters. Similar studies of the pilot model silver reactor for removal of iodine from dissolver off-gas have been carried out. A five-day continuous run with a pilot unit operating on plant dissolver off-gas has produced total radioactivity removal efficiencies as high as 99.99% and iodine removal efficiencies as high as 99.2%.

Metallurgy and Control Division

Improvement continued in the experimental production of Li-Al alloy billets and their fabrication into slugs for pile irradiation. Direct alloying of the lithium and aluminum now is practiced in the induction furnace, which obviates the capsule preparation step originally employed. Another 12 of these billets were extruded at Detroit on September 30, reportedly with much improved rod yield.

The lead-dip canning and inspection of slugs prepared from induction heat-treated alpha-rolled and gamma-extruded uranium were completed, and this experimental material now is ready for evaluation in the production piles. The slugs made from two of the U-238 billets supplied by Oak Ridge also were lead-dip canned in preparation for observation of pile behavior.

Steps were taken to restaff the B Plant Control Laboratory as required by increasing 200 Area run schedules, and additional personnel were assigned to the Bldg. 234-5 laboratory to provide three-shift coverage.

Analytical research has shown the mandelic acid procedure for determining zirconium to provide a means for removing this element from separations plant wastes, with or without columbium as desired, and separating it from other fission products such as Ba, La, Ru, Ce, and Pr. Conceivably this analytical separation method can be used to advantage in a potentially important process for the isolation of these two elements.

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October 10, 1949

PILE TECHNOLOGY DIVISION

SEPTEMBER, 1949

VISITORS AND BUSINESS TRIPS

J. R. Humphreys and P. E. Brown of Argonne National Laboratory, Chicago, Illinois, were here September 16 to discuss Special Request ANL-141.

The following visitors were omitted in last month's report:

G. A. Anderson, A. R. Jamrog, and F. W. Thalgott, of Argonne National Laboratory, Chicago, Illinois, were here August 22 through August 26, 1949 to discuss future pilot channel test.

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

F. E. Kruesi visited Oak Ridge National Laboratory, Oak Ridge, Tennessee August 19 through August 30, 1949 for technical consultation on P-11 project.

ORGANIZATION AND PERSONNEL

	August	September
Pile Physics Section	35	35
Pile Engineering	31	32
P-10 Project	7	7
Administrative	3	3
	76	77

One group head in the Pile Physics Section terminated this month. One laboratory assistant B and one laboratory assistant C terminated. A technical graduate transferred into the Division from Health Instrument Division. Two laboratory assistants D and one engineer were hired during the month.

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Pile Technology Division

PILE PHYSICS

Critical Mass

Construction work at the site of the critical mass laboratory is proceeding. The completion of work ranges from 95% for the pump house through 85% for renovation of the existing house, down to 15% completion of the experimental building.

At month end, Part II of this project, covering fabrication of the experimental equipment had been approved by the Appropriations and Budget Committee and was awaiting AEC approval.

Experiments are in progress at the K-25 critical mass laboratory to determine the effect of various foreign materials on critical masses. The results obtained to date definitely do not indicate any significant decrease of the solution critical mass by the introduction of bismuth and phosphorus, or by the presence of iron in the tamper. The net result will likely be an increase in the critical mass but the results are not yet sufficiently complete to indicate the magnitude of the increase.

New Lattice Design

At month end the project for exponential experiments, having been approved by the Appropriations and Budget Committee, was awaiting AEC approval.

Instrumentation for measuring the distribution in energy of the neutrons in a beam from the present pile is being designed. This information will be used to check fundamental theory. In addition it will also be directly useful to Health Instruments in estimating exposure hazards.

Graphite Development

Completion of cross breaking strength and crushing tests has indicated that early addition of Freon during graphite purification has no deleterious effects on the strength of the bars. Since this early addition increases the purity of the graphite, its use is recommended for any future purification work.

Uniformity of Lithium-Aluminum Slugs

Test Pile results indicate that current production of lithium-aluminum slugs is sufficiently uniform from a reactivity standpoint. A total variation of 6% in the strength of columns of these slugs was indicated. In absolute magnitude this amounts to only ± 1.5 inhours.

Pile Technology Division

H Pile Start-up

Considerable time and effort has been devoted to formulating plans for start-up of the H Pile which will take place in October. The following technical tests will be performed during the start-up period: determination of the dry critical size, measurement of the reactivity temperature coefficients of a dry Hanford lattice, measurement of the strength of the new type vertical rods both individually and together in both the dry and wet pile, determination of the reactivity temperature coefficients of the new pile with water in the tubes, and a measurement of the xenon poison effect in a pile in which the plutonium content is small.

Reactivity

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

	B Pile	D Pile	F Pile
In rods	65 ih	71 ih	55 ih
In Special Requests	394	377	425
In Plant Assistance Irradiations	0	20	0
In lead-cadmium columns	0	0	0
In bismuth columns	117	109	109
In dummy columns (incl. empty fringe tubes)	0	20	55
In xenon	475	499	461
In over-all coefficient	-200	-235	-235
Total cold, clean reactivity	851	861	870

During the month, the B Pile gained 5 inhours, the D Pile lost 9 inhours, and the F Pile gained 6 inhours in cold clean reactivity.

PILE ENGINEERING

Graphite Expansion

No vertical expansion was observed at the center of the B and D Piles during the past month. There was continued contraction of the vertical height at the center of the F Pile. There was no significant outward movement of the top center of the Near and Far Side Biological Shields at the B, D, or F Piles. Measurements of vertical bowing of the top central tube indicate that graphite expansion is continuing in the cooler regions of the piles. Increases in the carbon dioxide in the atmospheres of the B, D, and F Piles were recommended to increase the temperature of the graphite close to the process tubes thereby inhibiting this expansion which is still occurring. On the basis of experience with lower concentrations of carbon dioxide it was recommended that the H Pile be started with 100% carbon dioxide pile gas.

Pile Technology Division

The percentage carbon dioxide and the power level of the piles are limited by the maximum allowable vertical thimble temperature. Present estimates based on the No. 13G graphite thermocouple measurements and 350° C maximum aluminum temperature, show that the local power level in the D and F Piles is limited to about 260 KW per tube at 60% CO_2 and 230 KW per tube at 80% CO_2. The corresponding pile power levels would be 305 to 330 MW at 60% CO_2 and 270 to 295 MW at 80% CO_2, depending upon flattening. The equipment necessary to obtain a direct measurement of thimble temperature in an operating pile has been prepared and is to be used early in October.

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

A production test has been approved to cover the irradiation of induction heated transformed alpha rolled and gamma extruded uranium canned by the lead dip process. Provision has been made for comparing this metal with the standard Group V metal to the possible enrichment level of 600 MD/T.

Magnesium Testing Program

The program to determine the corrosion rate of pure magnesium and 3% aluminum magnesium alloy in process water is in its third month. The results show a high initial corrosion rate which decreases with time. The corrosion is of the pitting variety at low temperature, and changes to general corrosion at about 50° C. The corrosion rates are still excessive and indicate that magnesium is not promising at this pH. Equipment is now ready to test magnesium in higher pH water which is reported to be less corrosive.

Process Tube Corrosion

Tube 0574-B was removed from the B Pile and the front four feet were inspected to determine whether corrosion pits are present under "barnacles" of corrosion products which were observed in previous borescope examinations. The largest corrosion product barnacle was 18" from the inlet end of the tube, covering an area 5/8 " square. A pit 0.011" deep was found beneath this barnacle. Deeper pits were found beneath barnacles which were attached to the tube ribs. It appears that borescopic examination for corrosion product deposition can indicate the severity of pitting. An incomplete correlation of the results obtained in borescoping the inlet end of 70 tubes indicates that corrosion product deposition is inversely proportional to the velocity of water flow.

Additional Pile Control

The mock-up facilities for circulating boric acid solution in a pile tube for additional reactivity control are complete and are under test. Consideration is being given to use of ammonium biborate or potassium tetraborate in place of the less soluble boric acid.

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Pile Technology Division

Exposure of Temperature Indicating Liquid

Tests of a temperature-indicating liquid, "Tempilaq", under pile exposure equivalent to 2 days at the center of the pile showed no change in its temperature indicating properties.

Graphite Monitoring

During the past 1 1/2 years pile flattening has been steadily increasing; calculations of exposure for graphite samples exposed in the flattened zone have not always made appropriate allowance for this increase in flattening, with the result that some of the data reported previously were based on somewhat high values of the exposure. These exposure values have been adjusted during the past month. In general, these changes have no effect on any of the general conclusions which have been drawn, but merely result in changes in the absolute values which have been reported.

The physical expansion of CSF graphite, previously reported as 0.45% per 1000 MD/CT is now calculated to be about 0.57% per 1000 MD/CT. Some new data confirm this change to a higher expansion rate.

Forty samples of WSF and eighty samples of CS-GBF graphite were loaded during the month in test holes to initiate a more extensive program of study on these graphites. Three capsule columns were loaded with CS graphite and boron impregnated KC graphite. With a boron content of 3-5 mg of boron/gm carbon molded KS graphite showed accelerated damage after 311 MD/CT capsule exposure; unimpregnated molded KS and standard KC samples were exposed simultaneously as controls.

Type	Exposure MD/CT Capsule	% Expansion/1000 MD/CT Capsule	Total Stored Energy cal/gm	Ratio KS impreg. to KS non-impreg. Expansion	Stored Energy
KS	311	1.54	214	3.2	2.3
KC	311	1.50	198		
KS (boron)	311	4.92	496		

It would have been necessary to irradiate the KS graphite about 1250 MD/CT to accumulate a stored energy of 496 cal./gm., for the curve of stored energy vs. exposure is not linear.

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Pile Technology Division

Accelerated exposures are in progress with samples containing 8-10 mg. of boron per gram of carbon; these offer the possibility of attaining a very high degree of damage in a reasonable exposure time.

P-10 Project

Over-all progress on the P-10 project has been slow this month. Nine extraction runs were made on line 3. The start-up of line 4 was delayed in order to replace or repair inferior Toepler pumps, valves, etc. that had been ordered from the lowest bidder instead of from the specified supplier. Line 4 has now been completely tested and calibrated and is ready for operation.

Slugs with seven months' exposure were extracted without difficulty and slugs with eight months' exposure will be extracted early next month. Currently slugs are being discharged after six months' exposure, but if the results on the eight month slugs are satisfactory all slugs will be irradiated at least seven months.

Gas analyses on slugs prepared by the P-10A group have been continued. Although all the variables have not been investigated in detail, it does appear that slugs pick up hydrogen (probably as water) over a period of days after machining. Slugs will, therefore, be placed in closed containers immediately after machining and canned as soon as possible, usually within 24 hours. The gas absorption characteristics of the few unirradiated slugs from ANL that are available are being investigated in detail for comparison purposes.

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 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
A. A. Johnson and J. T. Carleton	Method of Reducing Graphite Expansion in the Piles

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

WK Woods:bb

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October 10, 1949

SEPARATIONS TECHNOLOGY DIVISION

SEPTEMBER, 1949

VISITORS AND BUSINESS TRIPS

Visitors from the Carbide & Carbon Chemical Corp., Oak Ridge, for Metal Recovery conferences included: L. Waters from Sept. 8 through 13, F. W. Hurd and S. Cromer from Sept. 11 through 13.

H. M. Fraga of the Los Alamos Scientific Laboratory visited this site from Sept. 9 through 13 for 234-5 consultations.

H. E. Goeller and J. O. Davis, Oak Ridge National Laboratory, visited the 300 Area on Sept. 9 to inspect Redox operations.

W. A. Bain and W. R. Peterson of the Kellex Corp., New York, visited this site from Sept. 27 through 29 to discuss Metal Recovery process development.

B. Weidenbaum visited the Los Alamos Scientific Laboratory from Sept. 14 to 20 for 234-5 consultations.

R. M. Wagner and W. E. Roake visited the Argonne National Laboratory on Sept. 16 and the Knolls Atomic Power Laboratory on Sept. 23 for Redox conferences. They also attended the A.C.S. Convention at Atlantic City, N.J., from Sept. 19 to 22.

ORGANIZATION AND PERSONNEL

Personnel totals in the Separations Technology Division are as follows:

	August	September
Administration	2	2
Special Assignment	3	3
Process Section	26	25
Development Section	91	93
Research Section	33	31
	155	154

Development Section: One Stockroom Helper was transferred from Stores, one Expeditor C was transferred from the Construction Division, one Chemical Process Trainee returned from a leave of absence, and one Steno-Typist C was terminated.

Process Section: An Assistant Group Head was granted an extended leave of absence.

Research Section: One Chemist and one Steno-Typist C were terminated.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Runs started during August at T Plant have shown erratic and high extraction yields. The over-all material balance has reflected these increased extraction yields with resultant high material balances. Although product heels in the solution tanks affect only the individual assays and the Canyon Building material balance and not the over-all material balance, the sizes of these heels were determined. The heels were found to contain product equivalent to 0.5% to 1% of an average run. These values are not considered abnormal.

"Basis Solution" sampling error tests were completed at both B and T Plants. The sampling error has been reported by the Statistics Group to be 1.4%. The "within chemist" and "between chemist" errors were 1.1% and 1.5%, respectively for the same period. These results are a composite of data from ten runs sampled in duplicate at each plant. Characteristics of a typical sampling system are being further investigated in the 19-4 Tank with acid solutions.

An acid wash, currently being processed at T Plant, was started in the 6-3 Tank (run basis tank) in an attempt to clean the tank and sampling system. Agitation and sampler circulation for approximately four hours and tank spraying for forty minutes with 60% nitric acid resulted in an accumulation of product equivalent to 0.1% of an average run. It is felt that this is an indication of essentially quantitative transfer from this tank. It is planned to start all acid wash runs in the 6-3 Tank.

The 19-4 Tank (second-cycle product solution tank for semi-parallel operation) was recalibrated at T Plant September 14, 1949, and rechecked September 28, 1949. Due to the low activity level in this cell, tank rodding was possible. The calibration slope (lbs. of water per inch of tank) differed by only 0.16% for the two rod determinations. A water manometer used in the second calibration checked the rod slope to 0.06%. The slope as determined by the ring balance differed from that of the roddings by 0.9% and the slope of the start-up calibration was 2.2% below that of the recent calibrations. The close agreement between the water manometer and rod data in this case and in the recent C-4 Tank recalibration at T Plant discussed below, suggests the use of this manometer as a standard in calibrations where activity levels prohibit the use of the rod.

[redacted]

Considerable difficulty was experienced with the operation of the second-cycle product precipitator-to-centrifuge jet at B Plant. Mechanical work has alleviated but has not completely rectified the difficulties. Flushing of the precipitator tank is planned since the trouble may be due to scale accumulation. It is believed that these jetting difficulties are responsible for the increased number of incompletely dissolved product cakes recently observed.

Coating waste samples have been taken at both B and T Plants. Assays have ranged from 0.2 to 1.8% of an average run with poor agreement between samples taken from the dissolver and from the waste tank. The variations of this loss are being studied further.

Concentration Buildings

The bismuth phosphate by-product oxidation tank (C-4) was recalibrated at T Plant. Tank roddings were 1.45% above the old calibration. Water manometer readings were 0.05% lower than those of the rodding while the ring balance was 0.33% lower. The manometer and rod calibrations were accepted.

The bismuth phosphate by-product precipitation wastes of three runs were reworked at B Plant. The product assays of these wastes were moderately higher than average. Recoveries were satisfactory. The average loss in this waste was slightly higher than recent averages. Recent runs, however, have resulted in losses closer to those expected in routine operations. The losses were lowered coincidentally with the receipt of fewer incompletely dissolved second-cycle product solutions.

Harshaw Specification 102 single-distilled anhydrous hydrofluoric acid, of analysis approximating that guaranteed, has been used in runs under Production Test 224-T-12. Testing has been completed with the exception of the accumulation of basis data for comparison of test results. It is indicated, however, that production data from runs utilizing this acid are not significantly different from those of runs utilizing double-distilled acid.

Isolation Building

Approximately 50 units of product were returned (unused) from the 234-5 Development Laboratory. Satisfactory purity of this material allowed handling as a partial sample can load.

Approximately 25 units of product were recovered from material returned from the 234-5 Building. The recovered product was returned to the Concentration Building to be added to runs as recycle.

Purification and Fabrication Building

Three sample bombs were filled with liquid HF and submitted to the essential materials group for analysis.

A can was designed to store core components in an inert atmosphere while awaiting further processing. An insert fits in the can to insure good contact between the plutonium and its support. This regulates the temperature of the metal satisfactorily.

Admission of HF during the drying cycle of Run X-9-08-43 resulted in a lumpy, off-color, high-weight fluoride giving a conversion of 58.8% after a double oxidation and a double fluorination cycle. Reduction of a ten-gram sample in the 231 Building gave a yield of 97.2%. The run was reduced in Hood 10 with X-9-09-6, giving a yield of 96.4%.

The rate of travel of the Hood 19 mechanism was reduced to one-quarter inch per minute to produce a slower rate of pressure rise. The entire mechanism was realigned and leveled with replacement of certain components. Repair of the first broken 051 set was achieved by fabrication of a replacement plunger in the 272-Z shop. To avoid a possible new break, no lead calibration was attempted. The second broken 051 set was repaired by Los Alamos, but was found cracked when returned to Hanford; the calibration runs were blamed.

Alterations in the 234 and 235-A logs give a better accountability between Hoods 8 and 9. The 235-B log has been altered to conform with necessary conditions in Hoods 14, 19, 25, and 26.

During the oxidation cycle of X-9-09-24, HF was inadvertantly admitted before the oxalate had passed 130°C. After correction of valving, the regular oxidation and fluorination cycles resulted in a conversion of 85%. Refluorination did not increase the yield. The fluoride was red in color (usually a pink-brown), with a band of green next to the wall of boat at the surface. Nickel contamination was suspected. Spectrographic analysis showed 20 ppm of Ni and greater than 2,000 ppm of Na. The run has been reduced separately in Hood 10 (72.3% yield) and is being held for spectrographic analysis.

Run X-9-09-38 was contaminated with oxalic acid-nitric acid wash solution preceeding treatment with HI. The run was immediately reduced and precipitated. During the washing cycle a small amount of foreign solution, thought to be caustic soda, entered the reactor. The complete wash cycle was repeated and the material sent through dry chemistry with a resultant conversion of 35%. Refluorination increased this to 79.8%. Spectrographic analysis showed 20 ppm Na and 20 ppm of Ni. The run was processed in Hood 10 with X-9-09-58 with a yield of 98%.

Heels contained in sample cans 79 and 802 were dissolved, combined, and sent through purification as X-9-09-HR-1. First fluorination gave a yield of 74%; refluorination, 76%. The powder was reduced with Runs X-9-09-55 and 56 giving a yield of 96.8%.

A new graph of temperature vs. density for bromobenzene was prepared for use in Hood 18. As determined by the use of a calibrated steel bob, the density of the bromobenzene had changed from 1.4890 to 1.4878 at 25°C. A suggested procedure for washing all vessels and lines in Hoods 5, 6, and 7 has been prepared and is being reviewed. Due to a shut-down of Hood 29 resulting from equipment failure, a modified procedure compositing eight supernates instead of the usual five has been prepared for Hood 30. A procedure for the removal of approximately 190 Kg of spent caustic scrubber solution from the Hood 30 evaporator was prepared. Cause of the introduction into the evaporator has not been established.

[redacted]

The Hood 17 operation on Run Z-9-09-8 was altered to obtain a more satisfactory surface. Preliminary results indicated improved and shortened handling in Hood 22 and emphasize the inadequacy of present equipment in Hood 17. Means for obtaining the better surface without undue hazard are being sought.

REDOX DEVELOPMENT

Solvent Extraction Studies

During September, eight solvent-extraction studies were completed to test the performance of 1-in. stainless steel Raschig rings in 8.42-in. diameter IA, IC, and IIE Columns, and five IS-IB-IC cascade studies were completed in the Demonstration Unit. New information resulting from these studies is summarized below:

1) Satisfactory performance of an 8.42-in. diameter IA dual-purpose column (1-in. Raschig rings) over a five-fold range of rates from 1.3 to 7.3 short tons of U/24 hr. has firmed-up previous indications that (a) an enlarged IAF feed mixing chamber is not required, (b) an enlarged, Elgin-type conical bottom-end is not beneficial for the IA Column (with 1/2-in. or 1-in. Raschig-ring packing), and (c) a 3-hole "spider-type" IAX distributor is at least as suitable as the previous 253-hole "shower head" distributor.

2) Performance of the 8.42-in. diameter column (1-in. rings) operating as a IIE or IIIE Column, and H.T.U. values calculated for the runs, were in close agreement with previous IC Column experience. The complete flooding capacity of the 1-in. rings (HW #1 Flowsheet modified to zero M HNO_3 in the 2EX) was greater than 3500 gal./(hr.)(sq.ft.), sum of both phases, compared to approximately 3000 gal./(hr.)(sq.ft.) for the IC Column.

3) Based on recent studies in the 5-in. and 8.42-in. columns, the use of 1-in. Raschig rings is to be recommended for the production plant IC, IIE, IIIE, and IH (hexone wash tower) Columns, 1/2-in. Raschig rings being preferred for all other solvent-extraction columns in the Redox battery.

4) A 3-in. glass column packed with 1/2-in. Raschig rings has operated satisfactorily as a IA Column processing simulated ISF from underground waste uranium (1.4 M UNH, 1.5 M $NaNO_3$, 0.2 M HNO_3-deficient) with no precipitation of uranium-phosphate compounds in the column or in the ISF during the time of the run for PO_4 concentrations up to 4.0 g./l. in the ISF (U/PO_4 = 33), using acid ISX extractant (0.2 M HNO_3), and for 1.0 g.PO_4/l. (U/PO_4 = 140), using neutral ISX. In most of these runs, the PO_4 concentration in the ISF was supersaturated; i.e., above the equilibrium solubility concentration for uranyl phosphate.

5) One 3-in. glass IS Column study (simulated underground waste) was carried out pumping ISF into the column containing a suspended white precipitate of uranium-phosphate compounds. The precipitate formed during the feed preparation step on making acid-type ISF (0.15 to 0.3 M HNO_3) containing 5.0 g.PO_4/l. New information resulting from this A.N.L. acid-type IS study (0.5 M HNO_3 in the ISX) is listed below:

[redacted]

a) The fine white precipitate passed through the E-porosity (0.0025-in. maximum pore size) sintered stainless-steel filters.

b) The precipitate remained suspended in the aqueous phase in the column passing down through the extraction section without any evidence of sticking to the packing.

c) In spite of the presence of the phosphate precipitate, waste loss of uranium in the ISW was 5%.

d) As the acidity in the aqueous phase increased on going down the extraction section, the precipitate gradually dissolved, solution being complete for the bottom 3 ft. of the 15-ft. packed height. The ISW stream was completely clear, all precipitate having redissolved in the 41/g.HNO_3/l.

e) Presence of the fine, white smoky-appearing precipitate in the feed-tee and the top 12-ft. of extraction-section packing indicated visually (for the first time) that mixing of the aqueous phase in the feed tee is excellent and that the aqueous phase appears to be well distributed through the entire cross-section of the packing as it passes down through the extraction section.

Construction and Maintenance

Work on Project C-331-Part C, 321 Building Ventilation Revisions, is 95% complete. Remaining work consists chiefly of installation of the unit motor starter and wiring to the motor, and relocation to the canyon roof of two blowers now located in the pipe gallery. Some grouting and insulation also remains to be complete. Work on Part D of Project C-331, Scale-Up Inert Gas Generator, is being held up by another delay in procurement. This unit, originally promised last spring for delivery in 5 weeks, was delayed first until September 23, 1949, and now until October 15, 1949. Other parts of the job, including installation of compressor, high pressure storage tank, and high pressure gas line to the Scale-Up unit, are progressing favorably.

Revisions and additions to Cell "B" equipment, to permit diuranate precipitation studies on the preparation of feed from metal waste solutions, are progressing favorably. The current estimated completion is 45 to 50%. All additional tanks have been installed, and remaining work consists of process piping, connection of instruments and electrical power, and installation of one pump. It is estimated that this project will be completed by October 15, 1949 and in operation by November 1.

Other equipment modifications and installations worthy of note were completion of the ferrous sulfamate make-up equipment, modification of cascade effluent lines to prevent air-locking, continuation of work on the installation of explosion-proof motors on Demonstration Unit rotary vane pumps, installation of a separate vent-breather system for sump decanter and organic overflow

[redacted]

tank to isolate them from the rest of the tank farm, installation of an improved instrument for indication of pressure differential between canyon and service side with provision for activating an alarm system, installation of a direct jet-out system from AQ-8 to AQ-4 (Scale-Up tanks) to prevent header contamination and loss of high UNH solutions. Noteworthy maintenance included replacement of O-1 tank agitator motor and shaft bearings, and replacement of two Master motors due to failure to drive gears.

Equipment Development

Submerged Pump No. 2 (G.E. and C.L. turbine driven by 2-ft. long shaft radially supported on process fluid-lubricated carbon-filled fluorothene bearings) has undergone 2186 hours (ca. 90 days) of projected 3500-hour life test in 2.0 M $Al(NO_3)_3$ solution. Operation continues to be satisfactory. The only quantitative change is diminishment of shut-off head from 18 to 17 psig. Qualitatively, the noise level has increased slightly as has vibration.

Submerged Pump No. 3 design has been completed and fabrication initiated. Completion is expected about November 1, 1949. This unit will consist of a 10-ft. long process fluid-lubricated shaft driving a Model 147 Roth turbine pump.

A Model 1011 Roth turbine pump (in-the-line installation) has completed 2712 hours of operation in 2.0 M $Al(NO_3)_3$ without significant loss of hydraulic performance characteristics.

A Peerless Model 4"-LA centrifugal pump (four stages) has operated 224 hours in water followed by 410 hours in 1.3 M $Al(NO_3)_3$ solution without change in performance characteristics. The double shaft seal running in SAE #10 oil has not shown any leakage over the entire interval. This unit is not anticipated to have application in the Production Plant and is functioning initially as a test unit for process fluid-lubricated boron carbide bearings. Seal fluid will be changed from oil to water.

The Kellex IB2 diaphragm metering pump was tested and found to be unsatisfactory because of variation in capacity with head valve sticking, diaphragm distortion, and leakage of air into the hydraulic operating system. This concluded the testing program on this unit.

The G.E. and C.L. submerged motor (Type KT, 1/3 H.P., 220 Volt, 3 phase) driving a turbine pump was operated intermittently for 248 hours in water and 161 hours in 1.3 to 1.5 M $Al(NO_3)_3$ solution. Leakage to motor stator windings caused several shutdowns, otherwise performance was smooth and satisfactory. Wear on the graphitar thrust and radial bearings was negligible.

Clarification by scavenging of dissolver metal solution with Super Filtrol FO in the 12-in. diameter Bird solid bowl centrifuge at 2050 x gravity indicates:

1. Maximum clarity of 86.5% is obtainable with "as received" Super Filtrol added to 1.67 wt. percent with bowl holdup time of 18-30 minutes.

[redacted]

2. Separation of scavenger into graded sizes is a promising means of improving clarity. Cuts of pass 100 mesh retained on 200 mesh, pass 200 retain on 325, and pass 325 gave preliminary results of 88.5%, 87.5%, and 86.5% clarity.

3. The cake is readily removed from the bowl by two water flushes through small high pressure jets (about 50 psig. and 1/16-in. diameter jet).

4. Once cake formation is initiated, operation cannot be interrupted otherwise solids carry over on resumption of operations.

A slurry simulating 3.5 parts of coating removal waste and 1.0 part slurry waste flowed readily through a 1/2-in. IPS pipe with a flow rate of 90% that obtainable with water.

Four standard concrete test blocks coated with polyethylene by Schori Company were received and found to contain numerous pinholes. Immersion testing has been deferred while seeking a means of sealing what otherwise appears to be a good resistant coating.

Samples of Amercoat "Ketone-HNO_3 Resistant Paint" applied to concrete blocks were tested and found resistant to IAX (0.5 M HNO_3 in hexone) for 74 hours but failed after 54 hours immersion in 60% HNO_3.

Mechanical shakedown operation of the pulse generator system revealed several deficiencies which are being corrected. A deflection of 1.8 inches was obtained in the 5-in. diameter column when operating six bellows at full stroke (0.5 in.).

Process Chemistry

The solubility of ISF solutions with respect to phosphate concentration indicates a higher phosphate tolerance with increasing acidity and combined sodium uranium nitrate concentration as illustrated by the following tabulation.

UNH M	$NaNO_3$ M	HNO_3 M	$PO_4^{\equiv}$ M	U/PO_4 Mol Ratio
1.4	1.4	-0.2	0.004 ± 0.001	350
1.4	1.4	0.0	0.012 ± 0.002	166
1.4	1.4	0.3	0.025 ± 0.002	56
1.6	1.6	-0.2	0.006 ± 0.001	266
1.6	1.6	0.0	0.014 ± 0.002	114
1.6	1.6	0.3	0.025 ± 0.002	64

It was determined that super saturation with phosphate is readily accomplished (10 to 12-fold above equilibrium phosphate concentration obtainable). The precipitate from unseeded solutions is extremely fine and a metastable gel can form from zero acidity solution which slowly (2-3 days) reverts to crystalline phase.

A Waste Metal Recovery Chemical Flowsheet HW-14470 based on laboratory work of the Chemical Research Section was drawn up for the purpose of setting the design of the 321 Building semi-works unit.

REDOX RESEARCH

Preparation of Solvent Extraction Feed from Metal Wastes

The sodium uranate process was applied to 20 milliliters of current metal waste (simulated 8-3-WS) as previously described, except for reduction in wash volumes and increase in metathesis time. These modifications reduced the waste volume and the percentage of uranium recycled to process as phosphate. The resulting dilute ISF contained 1.0 M UNH; a U/PO_4 mole ratio of 270; U/SO_4 ratio of 70; U/Na ratio of 0.74. The U/Na mole ratio was unnecessarily low due to excessive use of sodium hydroxide in pH adjustment. Other significant results included: recycled uranium 7%; total uranium loss to waste, 0.2%; material balances, 96% for uranium and 102% for phosphate.

Further study of phosphate removal during metathesis with 6 M sodium hydroxide at 90°C. confirmed the attainment of U/PO_4 mole ratios of >20 in three hours, >40 in 24 hours. Reduction of the sodium hydroxide concentration to 4 M did not alter this rate of phosphate removal. Reduction of the temperature to 70°C. reduced the initial rate slightly; U/PO_4 ratios being 15 after three hours, 41 after 24 hours. Addition of 0.03% Nacconol NR (wetting agent) to the precipitation step yielded a sodium uranate having a U/PO_4 of 26 after three hours of metathesis, and 75 after 24 hours.

Gel formation in simulated ISF solutions was investigated at uranium concentrations of 1.0, 1.4, and 1.8 M; acidities of -0.2, 0.0 and +0.3 M; and at U/PO_4 mole ratios of 9 to 100. Observations made at 25°C. indicated gel formation only at zero acidity for phosphate concentrations >5 g/l. Precipitation of uranyl phosphate was much more general, occurring at all three acidities at sufficient phosphate concentration. Precipitation occurs relatively slowly, in some cases over a period of days. Gel formation is rapid, occurring while the solutions were being made up and setting so rigid that the mixtures could not be poured. The following procedures were found to break a gel within an hour leaving a granular precipitate in each case: (a) heating at 90°C., (b) addition of nitric acid to +0.3 M acid, (c) addition of sodium hydroxide to -0.2 M acid.

As the phosphate clean-up step involves heating, gel formation should not occur during this operation. A study is being made to determine conditions for avoiding gel formation during transfer of the nitric acid solution of the metathesized sodium uranate to clean-up and post-precipitation of phosphate in ISF after clean-up.

Plutonium and Uranium Recovery from Off-Standard Aqueous Redox Wastes

The uranium recovery and volume of precipitate obtained by caustic precipitation of concentrated pooled Redox wastes were investigated as a function of uranium and Cr(III) concentration. Addition of a waste concentrated to

2.0 molar with respect to aluminum (equivalent to 4700 gal./2.5 short tons U; HDC-1333) to 60% by volume of 50% NaOH results in a new uranium recovery of >99.75%. The net uranium loss increases with increasing Cr(III) concentration and decreasing uranium concentration.

The volume of the precipitate decreases with increasing Cr(III) concentration and decreasing uranium concentration. The precipitate volume is in the range 200-600 gallons/2.5 short tons U processes for uranium losses in the pooled waste in the range 0-10%. With a single 40 inch Bird solid-bowl centrifuge, this precipitate volume would permit >7 minute settling time for 24-hour operation. Laboratory studies indicate this settling time to be more than adequate.

Ruthenium Tetroxide Distillation

The extraction behavior of the ruthenium remaining in dissolver solution after a few hours ozonization(Species B) is being investigated. The distribution ratio of Species B is approximately a factor of four less than the mixture initially present in dissolver solution. For example, with the dissolver solution studied, the initial ruthenium distribution ratio was about 0.01. After two to four hours ozonization, the ratio for the ruthenium left in the residue was around 0.0025.

The ozonization of ruthenium Species B has been shown to have a first order dependence on ozone concentration. When the rate constant for the distillation of Species B is plotted against the ozone concentration, a linear relationship is found. In the ranges studied and in the apparatus used, k_2 values from 0.0017 to 0.0144 were found for 1.1% and 11% ozone, respectively.

Comparison of data obtained with the discharge-type ozonizer has shown that there is no significant difference in the rate of distillation of ruthenium from dissolver solution at a given gas flow rate whether air or oxygen is used as the parent gas.

Filtrol Scavenging

Adsorption of zirconium and gross gamma activity from dissolver solution by Filtrol is being studied critically as a function of pH over the pH range -0.35 to 1.7. Incomplete data tentatively indicate adequate adsorption over a rather broad pH range. Ruthenium adsorption was less than 12% over the entire pH range studied.

Separation of Americium and Curium from Lanthanides

Ionex (Dowex 50-Colloidal Aggregate) was tested for separation of americium and curium from the lanthanides. Elution from the resin with 13.3 M HCl resulted in a sharp elution band but poor material balances. In a single test with cerium-praseodymium tracer, the rare earth activity was eluted before the americium-curium, contrary to observations made at Berkeley with a similar adsorption resin.

[redacted]

Separations Technology Division

Reactions of Hexone

Kinetic studies on the hexone-nitrous acid reaction over the past several months allow the general conclusion that at HNO_3 concentrations of 0.2 M or below and at room temperature HNO_2 initially present in HNO_3-HNO_2-hexone systems at concentrations of 10^{-4} to 10^{-2} M is entirely consumed in a short time and no further reaction occurs thereafter. This is true of both anhydrous and water-saturated systems. An initial HNO_2 concentration of 10^{-2} is higher than any that is anticipated in fresh Redox systems; however, indefinite stability of process system of acidities $\leq$ 0.2 M cannot be assumed until the effects of U(VI) and other process reagents have been established.

At HNO_3 concentrations of 0.3 M to 2.0 M, the HNO_2 initially decreased at a rate which is first order with respect to HNO_2 and nearly independent of HNO_3. A minimum in HNO_2 concentration is observed after which secondary reactions which produce HNO_2 become predominant. The latter reactions show rate dependency on both nitrous and nitric acid concentration. In water-saturated systems the initial reaction rate is slower and the minimum HNO_2 content is reached later than in anhydrous systems.

pH of Redox Systems

A summary report on the pH at 25°C. of aqueous Redox systems has been issued as HW-14559. Recent measurements include the effect of equal molar quantities of sodium nitrate in uranyl nitrate solutions. Neutral to acid deficient solutions of uranyl nitrate show a 0.11 unit drop in pH per mole of $NaNO_3$ added while acid solutions are practically unaffected by $NaNO_3$.

Pulse Column Studies

Simple columns packed with 1/4 x 1/4-in. stainless steel Raschig rings were pulsed in the hexone feed line as in a regular pulse column. The 6.0 inch H.E.T.S. obtained at 1325 gal./sq.ft./hr. flows was somewhat higher than with two-inch plate spacing, but definitely better than conventional packed columns.

IC Column runs were made with dri-filmed walls and plates in a regular 69-inch pulse column. The operation was better in this case with the interface at the bottom rather than at the top of the column, which is the reverse of the experiments with dri-filmed plates in IA Column runs previously reported. IC runs in non-dri-filmed columns gave higher values of H.E.T.S.

Coupling of Redox and 234-5 Operations

Precipitation of plutonium (IV) phenylarsonate from IIBP solutions has resulted in lowering the aluminum to plutonium mole ratio from 0.73 to 0.0024.

A study of the solubility of plutonium (IV) phenylarsonate as a function of nitric acid and phenylarsonic acid is now under way.

[redacted]

Separations Technology Division

234-5 PROCESS DEVELOPMENT

Four plutonium peroxide precipitates were prepared on a nominal ten-gram scale from Isolation Building P-1 solutions in the absence of sulfite and sulfate ions. The conditions for precipitation found by previous exploratory work on a 200-mg. scale were used. A summary of the data is given below.

Preparation of Sulfate-Free Plutonium Peroxide

A. Starting Solution

Source	Run No.	Pu(g/l)	Total Pu	Fe(g/l)	H^+ (g/l)	Sp. Grav.
T-9-08-F-3	12	10.84	10.92	0.694	1.71	1.230
B-9-08-D-7	13	7.58	7.57	0.920	1.92	1.247
B-9-08-F-8	14	9.59	9.26	1.186	1.70	1.259
T-9-09-D-3	15	10.59	10.32	0.570	2.12	1.253

B. First Cycle Precipitation

Run No.	Digestion Period (hrs)	Settling Period (hrs)	Yield (%)	Peroxide Conc.(%)	H^+ (g/l)	Fe (g/l)
12	0	16	95.6	10	1.11	0.403
13	1	2	92.0	10	1.22	0.531
14	1	2	89.4	10	1.09	0.717
15	1	1	98	16	1.41	0.345

C. Second Cycle Precipitation

Run No.	Digestion Period (hrs)	Settling Period (hrs)	Peroxide Conc.(%)	Yield % Second Cycle	Yield % Over-all
12	1	2	10	93.1	89.0
13	1	2	10	98.4	90.6
14	1	4	10	98.3	87.9
15	1	6	10	98.5	97.5

The hydrofluorination cycle was modified for the last three runs to extend the hold period at 130°C. to two hours. Complete evaporation of the water present was thereby assured and the amount of spattering was reduced. Fluoride of good quality was obtained from all of the sulfate-free peroxide runs. The bulk density of the fluoride from these runs was, however, appreciably lower than that derived from plutonium peroxide containing sulfate. The fluoride made from sulfate-free peroxide appears to be softer than that obtained from peroxide containing sulfate.

The fluorides from this series of runs were reduced to metal by standard techniques. A portion of the fluoride had to be withheld because the crucibles would not accept the entire batch of the low-density material. Reduction yields of 92.7%, 97.7%, 96.0%, and 96.8% were obtained for the respective runs. These reduction yields compare favorably, except for the low value of the first

run, with the values obtained in the previous series in which peroxide containing sulfate was reduced to the metal.

Concentration of samples of the 234-5 Building wet chemistry supernatants, SN-2, to a volume one-fiftieth of the original volume resulted in the formation of a small quantity of a flocculent yellow-white precipitate. When additional batches of SN-2 solution were evaporated on top of this original residue, a larger quantity of a sticky material was obtained.

Product Inspection

STACK GAS DISPOSAL

The routine monitoring measurements obtained at both plant sand filters during the month indicated the continuance of normal operation.

A program is in progress to determine the depth of a No. 55 Fiberglas bed packed to a density of 3 lbs./cu.ft. that will be equivalent to 0.5 inches of "AA" Fiber (providing a filtration efficiency of 80% at a gas velocity of 10 ft./min.). Results of similar tests with 6 lbs./cu.ft. packing showed 4 to 4.5 inches to be equivalent to 0.5 inches of the "AA".

A study was made of the physical characteristics of the "AA" Fiber under operating conditions. A glass unit, four inches in diameter, was employed in this investigation. It was determined that at flow rates greater than 10 to 15 ft./min., the "AA" filter pads compressed appreciably. To insure a more reproducible pressure drop and to avoid the danger of channeling, resulting from an uneven compression of the filter bed, it is recommended that in usage of this material at high gas velocities the bed be compressed when installed in the filter. It was found that the binder on the "AA" fiber began to char at about 250°C. and was completely removed between 350 and 400°C. The

resilience of the filter pads was lost upon removal of the binder, but there was no effect upon the pressure drop across the material. A check will be made to determine if loss of the binder has any effect upon filtration efficiency.

A pilot plant unit, comprised of a silver reactor and fiberglas filter in series, was operated continuously on the dissolver off-gases at B Plant for a period of five days. The silver reactor was 2 inches in diameter and had an 8-inch reacting bed composed of 1/4-in. Berl saddles coated with silver nitrate. The Fiberglas filter was 4 inches in diameter and was packed with 9 inches of No. 55 Fiberglas, at a density of 6 lbs./cu.ft., followed by four one-half inch pads of "AA" Fiber, precompressed to a one-inch thickness. Two cfm. of the dissolver off-gas stream were drawn through the apparatus (the silver reactor was maintained at 220°C.) during all possible dissolver operations.

The over-all beta plus gamma decontamination effected by the equipment (as determined by "Cutie Pie" measurements) was in the order of 99.99%. The beta removal efficiencies for fission products other than I^{131}, obtained from laboratory analyses of CWS filters, ranged from 99.95 to 99.99%. The I^{131} removal efficiencies (determined by caustic scrubbing) for the three dissolvings in 4-5L were 99.23, 97.7, and 98.7%, respectively. The apparent efficiencies for the first cut and the portion of a second cut checked in 3-5R were 85 and 80%. During these latter dissolutions, however, some of the monitoring scrubber solutions became acidic, preventing a true measure of the I^{131} upstream and downstream from the equipment. A run will be made to check the I^{131} removal of the silver reactor under extended operation.

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. 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.

R. H. Beaton, Head
Separations Technology Division

Date: October 1, 1949

[redacted]

METALLURGY & CONTROL DIVISION

SEPTEMBER 1949

10-10-49

VISITORS & BUSINESS TRIPS

The Division had no off-site visitors during September.

Business trips to other locations were as follows:

D. W. Pearce attended the American Chemical Society convention at Atlantic City, N. J., on Sept. 18-23, where he gave special attention to personnel recruitment. He spent Sept. 26 at the New Brunswick (N. J.) Laboratory of the Atomic Energy Commission, inspecting and discussing analytical laboratory facilities. He visited KAPL and the Research Laboratory in Schenectady, N. Y. on Sept. 27-29 to discuss analytical methods and laboratory facilities.

R. Teats spent Sept. 30 at the Detroit Gasket & Mfg. Co., Detroit, Mich., supervising the extrusion of P-10 alloy billets.

ORGANIZATION & PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	August 31	September 30
Metallurgy Section	35	35
Analytical Section	320	316
Statistics Group	14	13
Information Group	53	56
Administrative	3	3
Totals	425	423

The Analytical Section employed three non-exempt chemists, and transferred one shift supervisor to the S Division. Three laboratory assistants of this Section went on leave of absence. The Information Group employed five non-exempt files clerks, and transferred one as a laboratory assistant to the Analytical Section.

There were a total of six voluntary terminations, all non-exempt personnel.

METALLURGY

Uranium Billet Casting

The electronic leak detector for furnace use was repaired and re-calibrated; however, new troubles developed in the instrument which made it impossible to obtain additional billets from pickled chips cast at less than 100 microns pressure for application to P. T. 314-59-M.

Statistical studies have shown a significant correlation between furnace pressure and reported uranium density, and between reported density and TDS, but none between density and nitrogen content. These trends indicate that higher furnace pressures (occasioned by slight leaks in the vacuum system) cause an increase in the amount of oxide formed in the molten uranium, without a corresponding increase in nitride formation.

Continued investigations into possible sources of silicon in Hanford remelt billets are being made to include the analysis of turnings chip samples taken from one of the furnace charging buggies in Bldg. 314.

Uranium Rolling

The program at Battelle for determining the deformation strength of uranium at 300° C is proceeding satisfactorily. They have completed and tested the fixture required for measuring roll pressure, and it is anticipated that the program will be completed by the end of October unless unforeseen difficulties are encountered.

Slug Canning

The slugs (about 4000) canned early in August and suspected of having caps made from copper-bearing aluminum alloy were sorted by the P Division, after wire brushing and etching, on the basis of dark coloration shown experimentally to be definitive. Only seven slugs appeared to have the undesirable caps; these were rejected for recovery.

Equipment designed to permit bronze dipping four slugs at a time was modified as indicated necessary by previous "dry runs." Additional minor modifications suggested by actual canning trials are now underway.

Preliminary laboratory tests indicate that a simple extraction of tin from Al-Si canning scrap with molten lead may not be economically attractive. Experiments are underway to determine the tin extraction using various proportions of lead and scrap Al-Si at several different temperatures.

Considerable improvement has been achieved in the separation of entrained tin from the copper-rich crystals precipitated during scrap tin recovery. The proportion of copper in the crystals removed for discarding now runs about 18% as compared to a previous copper content of about 9%.

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

The lead-dip canning and subsequent processing of induction heat treated uranium for P. T. 313-109-M was completed, with a 93% yield. Dimensions as well as warp measurements were taken on individual slugs after autoclaving. Canning line rejects of alpha rolled and gamma extruded metal which had been induction heated for this production test are being examined metallographically. The work is not complete, but thus far the grain size of this material has been equally as fine as that of the test rods examined previously. This material will be checked for orientation after the metallographic work is completed.

The test rods of alpha rolled, gamma extruded, and cast uranium which were induction heated into the beta phase and quenched were examined for orientation using the x-ray spectrometer. The extruded and cast rods which had been cycled three times and the rolled rod which had been cycled once all had a random orientation.

Uranium Alloys

A program has been initiated to determine the effect of heating rate, temperature, time at temperature, rate of cooling, and initial grain size on the structure of a uranium - 0.4 atomic percent chromium alloy. The object of this work is to establish the conditions giving maximum grain refinement in the beta heat treatment of this alloy. Experimental work thus far has been confined to establishing the temperature of the alpha-beta transformation and the rate of heating of a sample in a tin bath.

In x-ray orientation work on uranium alloys, the "as rolled" specimens have had a low degree of orientation comparable to that of rolled, triple-dipped production material. To check whether the alloying elements might be effecting a randomization of the orientation of rolled material, spectrometer traces were taken on the unalloyed uranium comparison samples produced at Battelle. These samples also had a close to random orientation which indicates that a fine grained, randomly oriented structure might yet be obtained in unalloyed uranium by the use of a suitable fabricating procedure. Also, if the alloy specimens have a close to random orientation in the "as rolled" condition, further work to determine if a beta heat treatment randomizes orientation in the alloys would be superfluous.

Some time was spent in an effort to identify eleven extra lines in the x-ray pattern of a 0.9 atomic percent chromium alloy which had been heated to 700° C and cooled. Indexing was attempted using the beta structure currently proposed by Tucker at KAPL.

Dilatometry

Expansivity curves were run on quartz, copper, and steel for use as illustrations in the report on the automatic recording dilatometer. Good curves were obtained indicating the satisfactory operation of this instrument. The final draft of the report on this instrument was completed.

Expansion curves were also run on alpha rolled and gamma extruded uranium samples which were cyclicly heated into the beta in the dilatometer. The new type sample with a square cross section was used in these runs. As before, the alpha rolled material acquired a random alpha coefficient after the initial heating into the beta phase and maintained this coefficient for two subsequent cycles. The coefficient of gamma extruded material remained essentially random for six cycles. Slight variations in the coefficient were believed to be due to the large grain size.

The dilatometer to be used in checking the expansion of alpha-rolled slugs (resulting from triple-dip canning) is still under construction.

Radio-Metallurgy

A section of a "hot" VSR thimble having a radiation reading of 700 mr/hr at 5" was welded to a cold thimble section in the 100-F Area. Samples of this weld were mounted, polished, and macro-etched. Observation and photographs of this macro-etched surface showed edges that were unwet by the weld metal, interior and exterior cracks, and an excessive weld bead. Indications of extreme grain growth of the aluminum in the irradiated portions were observed. These samples will be investigated further by micro-examination. Accelerated corrosion tests are underway on several of the best welds.

Specimens were taken from VSR thimble 33-D, made flat, mounted in Selectron, and polished through 4/0 paper. Measurements of the wall thickness were made and photographs taken. A report of this investigation is being prepared.

A sample holder for electrolytic etching has been provided. Tests are now being made. A sample holder for pile thimbles has been built to permit the obtaining of sample sections with the milling machine in Bldg. 111-B.

P-10 Alloy

Twelve lithium-aluminum billets were cast, shipped to Detroit and extruded on September 30. A preliminary report indicates that much improved yields were realized in this run.

Improvement in casting technique has resulted in better control of lithium content, so that only one of these twelve billets was outside the desired composition range. Two thin-walled graphite molds broke during pouring and a split cast iron mold now is in use. The billets from this mold have been generally free from defects.

The rods obtained from the August 31 extrusion at Detroit of nine Li-Al billets were critically sorted and those suitable were machined into slugs. The discarded rods were either badly galled or were insufficiently straight to produce satisfactory slugs. A total of 145 dimensionally satisfactory slugs were obtained and canned. A discussion with Pile Technology Division personnel on the reported lithium content of the raw billets, and the belated gas analysis results of slugs produced from them, led to the tentative decision to hold all slugs from billets whose initial lithium concentration was reported to be

over 4% or whose hydrogen content was over 4 ml per slug. This decision would permit only 60 of the initial Hanford slugs to be used.

Hydrogen gas analyses of slugs produced from the first batch of extruded rods have been erratic, but appear related to the elapsed time between machining and canning. Lithium analyses on samples cut every 8-1/2" from a rod whose original billet analysis was 4.30% at the top and 3.74% at the bottom indicated a range of 3.19% to 3.84% along the length of the rod. Slugs cut from these rod sections adjacent to the analytical samples were canned and tested in the 305 Test Pile. The tested slugs are being sampled for confirmatory analyses. From these data it is hoped that curves may be drawn which will permit use of the Test Pile for determining the Li content of these alloy slugs.

Redox Corrosion Testing

Tests conducted with sandblasted as received, as welded, and welded - heat treated T-347 and T-309 SCb stainless in both 65% HNO_3 and 20% HNO_3 at boiling temperatures have just been concluded. The corrosion rate of T-347 in 65% HNO_3 is estimated to be approximately 2-1/2 times that of the T-309 SCb, and approximately 3 times in 20% HNO_3. The corrosion rates in 65% HNO_3 are estimated to be approximately ten times that in 20% HNO_3. Preparation of a report covering this investigation is in progress.

A number of tests are in progress to determine the value of coatings for the storage of concentrated aqueous wastes. In one part of the program pipe pots made from SAE 1010 mild steel and coated with one of four protective coatings (Prufcoat, Ucilon, Seachrome and Amercoat) are being exposed under different temperature conditions. Final evaluation of the results of these tests will require destruction of the samples in order to inspect the coatings on the interior of the pots. Interim inspections may be complicated in some cases since it is not yet known whether or not it will be possible to clean the interior of the pots thoroughly without marring the surface of the coatings. Samples coated with Prufcoat are expected to be particularly troublesome in this respect, since this material becomes soft and tacky at elevated temperatures.

In a second part of this program, test coupons of SAE 1010 mild steel painted with the various coatings are being exposed at room temperature and at 170° F. All coatings (Prufcoat, Ucilon, Seachrome, and Amercoat) failed after forty-five hours exposure to concentrated still bottoms at a temperature of 170° - 212° F. Each of these coatings also failed on exposure to concentrated LAW-IDW solution for forty-five hours at 170° - 212° F.

For control purposes, unpainted samples of SAE 1010 were exposed in both partial immersion and total immersion tests to concentrated still bottoms, concentrated LAW-IDW, neutralized LAW-IDW, and neutralized and concentrated LAW-IDW. These tests were carried out at 70-80° F and at 170° F. All samples exposed to concentrated still bottoms and concentrated LAW-IDW failed after 43-1/2 hours exposure, thus indicating the seriousness of a failure of a protective coating. The pH's of these solutions, as determined using a blue glass electrode which is somewhat inaccurate in this range, varied from 2.1 to 0.0.

Four unpainted samples exposed at 170° F to neutralized LAW-IDW and to neutralized and concentrated LAW-IDW show promise, and are currently in the course of the first 8-day exposure period.

Miscellaneous

Materials necessary for continuing a laboratory scale investigation of the wetting of uranium by magnesium alloy bonding media have been procured.

Forty-two receptacle slugs were processed. However, due to various troubles, only ten satisfactory screw-type slugs and ten with crimp-type closures were obtained. Work is in progress on the preparation of five special thermocouple slugs and sixteen odd-sized receptacle slugs to be used in H pile calibration by the Pile Technology Division.

A preliminary survey was made of an experimental sand filter facility to be used in the 300 Area for testing various filter media for removing submicroscopic uranium oxide particles from the exhaust air of Bldg. 314. The apparatus has been constructed, modifications of the installation for the exhaust line from the crucible burnout station have been completed, and most of the operating materials have been procured. Test work on evaluation of various filter media will start soon. The 200 Area Technical Plant Assistance Group is cooperating in this study.

Samples of the depleted uranium (supplied by Oak Ridge) in the "as rolled" condition appear to have a metallographic structure no different from that of normal uranium. Slugs machined from the two alpha rolled rods of this material have been lead-dip canned and processed (under P. T. 313-110-M) for pile testing.

The resistivity of a 30 mil uranium wire which had been heated into the beta phase and quenched was 31.49 micro-ohm centimeters at 25.0° C. This value is 10 percent greater than was obtained on the wire in the "as rolled" condition. Orientation of these wire samples before and after heat treatment is still to be determined.

Work was resumed on the determination of the torsional creep rate and damping factor of uranium.

A new method of storing, identifying, and keeping the inventory of uranium samples in Metallurgy Section custody has been set up. When not in use, this uranium will be kept in locked cabinets accessible only to the people charged with keeping the inventory.

Erection of the steel framework for Bldg. 3730 was completed, and the lining of the interior with transite was begun. Enclosure of the building has been delayed by a disagreement as to which craft group should do the work.

ANALYTICAL CONTROL

Work Volume Statistics

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

	August		September	
	Samples	Determinations	Samples	Determinations
Routine Control - 200	2328	4642	2656	7528
Routine Control - 300	585	1185	307	948
Water Control - 100, 700	530	2318	960	2807
Redox Program Analyses	2576	5821	2036	4840
Process Reagents	827	1493	941	1696
Essential Materials	148	714	104	529
Special Samples	2738	6222	3016	6393
Stack Gas Filters	121	197	174	250
Totals	9853	22592	10194	24991

100 Areas Water Control

Steam condensate, collected by means of a specially constructed stainless steel coil from the main header of Bldg. 190-F, was analyzed for several constituents at the request of the Pile Technology Division. These analyses were made to evaluate water prepared from this source for use in the recirculation system proposed for trial at 100-H.

200 Areas Process Control

Increasing production schedules in the 200 Areas necessitate the prompt restaffing of the B plant control laboratory (Bldg. 222-B). Requisitions have been issued for procurement of the additional Laboratory Assistants required, and the additional technically trained personnel are being assigned either through transfers from within Analytical or as new hires.

The average 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:

	Precision		
Sample	Expected	August Average	September Average
6-3-MR	1.58%	1.93	1.50
P-1	2.39%	2.13	2.16
AT	1.98%	1.20	1.73

In the Isolation Bldg. Laboratory, the geometry calibration of the ASVP counter was found to be in error by approximately 0.6%. This was because the sample radius was not taken into consideration when the calibration was made. The condition has been corrected.

Additional fire extinguishers and master electrical switches have been installed in the 222-B and T control laboratory buildings to comply with the revised rules on solvent handling for Class "B" laboratories.

300 Area and Essential Material Control

Tentative specifications were received from the Chemical Development Section for Redox essential materials. Analytical methods for the desired constituents are being investigated and procedures are being prepared for use.

Several samples of slug canning alloys and drosses were submitted to the laboratory by the Metallurgy Section for the determination of tin, lead, silicon, and uranium. Some difficulty was experienced in the separation of tin and lead, due to occlusion of tin during the precipitation of lead sulfate. Results obtained on these samples indicated a lack of homogeneity of the samples received.

A significant increase in work arising from the P-10 alloy operation was noted. Preliminary work has been started to establish spectrographic methods for the determination of iron, copper, and silicon in this alloy.

Redox Program Control

By month's end the force assigned to the Redox Control Laboratory was reduced to a total of 43 personnel, which number appears to be the minimum for the volume of samples currently being received for analysis.

Methods Adaptation

It has been found that the use of nitrogen instead of carbon dioxide as an inert atmosphere in the ferric sulfate titration of uranium improves the precision of the potentiometric endpoint.

Preliminary investigations of a method to separate phosphate from silica by extraction into N-butanol gave unsatisfactorily low recoveries. The basic procedure is still considered feasible and is being further investigated.

The lanthanum fluoride procedure gave anomalous results when applied to solutions of plutonium in phenylarsonic acid.

Further study of the oxalate and fluoride procedures for the determination of nitric acid in Redox streams showed that the complexing reactions were improved if the solution was only slightly acidic upon addition of the reagent. The fluoride procedure, using a coulometric titration, was found to be satisfactory for LAS type samples. The direct acid titration of acid-deficient samples, recommended by KAPL, gave an endpoint difficult to detect and this characteristic was particularly evident when significant amounts of uranium were present.

The limiting sensitivity of the dithizone method for lead was established as 0.1 microgram. Results were found to be reproducible within 10% to 50%

depending upon the lead concentration, the poorer precision being obtained at the 0.1 microgram level.

An extensive study of the fluorimetric method for the determination of uranium was made to determine the accuracy of the method using the "spiking" technique to obtain quenching corrections. The overall standard error in the procedure is 20% if the sample size is adjusted so that the fluorescence of the sample is at least five times that of the blank. These results indicate that a preliminary separation of uranium will not be necessary for Redox samples. This work was reported in detail in Document HW-14633, entitled "Analytical Research Group Report - Redox--July and August 1949."

Work on the development of improved beta standards continued. A better type of mounting was devised for the U_3O_8 discs used as relative standards. An attempt is being made to establish absolute standards by accurately determining the alpha count of Ra D & E discs and calculating the beta emission from the theoretical alpha-beta ratio.

The working range of the vibrating reed electrometer has been extended by revisions to the instrument circuits. It is expected that induced currents ranging from 10^{-14} to 10^{-16} amperes can be accurately measured with the modified instrument.

Laboratory Equipment Design

Eleven work requests were received by the Design Group. Seven were completed, and an accumulated backlog of seventeen remains. Not included in these totals is the time of two design engineers presently assigned to the problems of the Chemical Research Section. These two men will continue on this assignment to November 30, at which time a review of the priority needs will be made.

The drafting of approved equipment blueprints to allow purchase from outside vendors is proceeding slowly due to design manpower and space limitations. Complete drawings for three pieces of equipment developed in the Experimental Shop were completed during the month. The backlog of original sketches ready for drafting, and revisions of existing blueprints, is estimated to total 2,000 man-hours.

A design for a standard gloved box was completed during the month including front, back, sides, windows, filters, electrical junction boxes, etc. Principal consideration was given to dimensions and methods for easy and rapid assembly of the units. Scale models (1/4 size) are being constructed to improve the development of units containing special equipment and to portray, to groups requiring units, the limits that must be maintained in developing interior arrangements. Additional interior fixtures still in the design stage include miniature hot plates and heat lamps, electrolytic-and-bellows-controlled microburettes.

The Junior Cave program was initiated in cooperation with the Chemical Research Section, and the first unit is scheduled for delivery during October. Flow sheets are being studied and basic problems concerning the floor loading,

assembly methods, canopy installations, hoists, duct work, piping, electrical services, manipulators, etc. are being clarified and designed preparatory to fabrication. Some experimental manipulators have been fabricated.

Machine Shop

A total of 39 requests was received by the Shop Group during the month; 33 of these requests and 8 jobs remaining from August were completed. Considerable work was referred to the Instrument Division Shop (Bldg. 3717) in accordance with recent arrangements for additional technical shop service to be performed by them.

Units of special interest which have been completed in the Bldg. 3706 Shop during the month included: a modified uranium panel board, a Rockwell sample positioner support and bridge, an electrolytic sample etching unit, a damping ring and a tester bearing support.

Glass Shop

A total of 89 requests was completed during the month, which reduced the work backlog of this shop to 40 man-hours. A few requests await the receipt of special materials required to complete them.

Information has been received from Purchasing Division that the hydrogen and oxygen manifolds were shipped on 9/27/49. These units will be incorporated in the alternate gas mixing system proposed for this shop by Project Engineering. Installation is planned as soon as final work order estimates can be made by the Maintenance Division.

Material and Work Order Control

A complete inventory was made in Bldg. 3706 of the items which are held as supply for Technical Divisions Laboratories in the Main Stockroom, 3722-A Warehouse, and Technical Shop stocks. Corrections for over supplies of certain stocks which are indicated will be made in cooperation with the Stores Division.

Special Hazard Control

Assault masks are no longer required during the AT retain sample recovery operation, as HI was not able to detect a hazardous condition. However, masks will continue to be worn during removal of the recycle container.

The 234-5 Building evacuation procedure has been reviewed with all personnel in the analytical laboratory.

ANALYTICAL RESEARCH

Chemical Methods

The results of the meetings held to discuss the status of Redox analytical procedures have been presented in document HW-14510, entitled "Status of

Analytical Procedures for Redox Production Plant No. 1."

A study has been completed to evaluate the behavior of various electrode systems in the presence of the high beta-gamma activities associated with Rala analytical samples. Active phosphorus was used as a stand-in for the Rala activity; the various electrodes of interest were placed in a solution of this material. The calomel, silver-silver chloride and dropping mercury electrodes were stable in this system for an extended period of time. The glass and antimony electrodes were stable for a period of about 24 hours, whereas the carbon, platinum, tungsten and stationary mercury electrodes were erratic. Indications were that the pH may be measured accurately with glass electrodes in this highly active medium.

A series of experiments designed to test the TTA extraction method for the determination of plutonium yielded very erratic results. Although the extraction of plutonium appeared to be fairly complete, very poor material balances were observed. This was found to result from an unsatisfactory distribution of the extracted plutonium on the counting disks. The situation has been greatly improved by the use of a specially designed drying block that warms the disk along its edges while keeping the center cool.

Continued investigation on the mandelic acid procedure for the determination of zirconium has shown the method to be of great promise. Active Ba, La, Ru, Ce and Pr do not interfere. Active Cb is carried by the zirconium precipitate; this effect may be avoided by using a hold-back Cb carrier. The best results are obtained by making a double precipitation and adding the hold-back carrier after the first.

Considerable difficulty has been encountered in the distillation of RuO_4, because certain forms of the Ru ion are only slowly oxidized and distilled. Promising results have been obtained by a technique which involves a preliminary reduction with metallic aluminum or magnesium or with chromous ion, followed by oxidation and distillation.

A cooperative study of the sampling of IAF Redox solutions in Bldg. 321 has been completed. Ten samples were taken from a given IAF stream and analyzed in multiple. One sample yielded results completely outside the statistical limits; the other nine indicated a sample precision of $\pm 0.36\%$. This test was reported in document HW-14584, "Redox Sampling Test - I."

Instrumental Methods

Experimental work on the carrier concentration spectrochemical method, as applied to 234-5 process control problems, has been completed. This method is of particular value in the determination of impurities in plutonium materials in that it minimizes the spectral background due to plutonium. Personnel from the analytical control laboratories are being trained in the conduct of the method so that it may be placed in routine use.

An attempt to find a suitable material, other than platinum, for counting-disks has shown that glass and either frosty or polished stainless steel are not satisfactory. The latter two tend to give slightly low counting rates, whereas the former is undesirable because of its low rate of heat transfer.

Special Hazard Control

Radiation and contamination control in the analytical research laboratories proceeded without incident.

STATISTICAL STUDIES

300 Area Operations

A test of tool breakage during the machining of uranium slugs was designed for the P Division in conjunction with the proposal that TX scrap be lowered by reducing the cut-off tool width. This test is underway. TX scrap losses from machining of uranium slugs and from chip briquetting are being investigated statistically to determine their extent and location, and the accountability control measures necessary. A test has been designed for the P Division to determine the precision of weighing oxide shipments for accountability purposes. A complete Statistical Quality Control system by lots has been put into effect on the machining of uranium rods, the canning and autoclaving of slugs, and on Test Pile results. The study of grab versus thief methods of sampling MD-6 process oxides in the 300 Area indicated the thief method to be superior (reported in document HW-14496).

A statistical analysis of density determination on Hanford recast uranium showed a significant drop in density starting with billet numbers 8841-8842. As a result of this study, a separate statistical control of the density of this uranium is being initiated and will be reported in the monthly Statistical Quality Control Report. Silica impurity contents in Hanford billets from April 1 to August 1, 1949, are being analyzed statistically to determine if a trend is present, and if this contaminant is related to the melt plant charge.

100 Area Operations

From data submitted by the Pile Physics Section showing reactivity changes in the B pile following a shutdown, calculations were made of the coefficients of the xenon equation corresponding to various values of the decay constants of xenon and iodine. Small changes in the decay constants caused a considerable change in the coefficients. More complete data are being obtained and the study continued.

200 Area Operations

A statistical study of 200 Area material balances from January through July, 1949, was begun. Present results indicate that material balance figures for individual runs reflect a consistent set of processing and analytical circumstances within each plant. In particular, the differences from month-to-month in average material balances are consistent with variation observed in individual run material balances. Between B and T plants, however, the differences in overall and Bldg. 224 material balances are real, and not reconcilable with normal variation.

Results of the 6-3-MR plant sampling test gave an estimate of sampling error, when sampling is in statistical control, of ± 1.39%. The total analytical error during the test was ± 1.85%, which is consistent with the established value for this analysis. Therefore, in this test, sampling and analysis appeared approximately equal in importance as sources of random error in 6-3-MR results. However, examination of 6-3-MR and 8-1-MR total count data obtained during the period Sept. 1948 through Mar. 1949 has indicated a random error of about 7% in 6-3-MR results, which is of greater magnitude than indicated in the sampling test. This implies at least two possibilities: (1) That there are significant sources of random error in excess of analytical and sampling errors, as yet unidentified, and/or (2) that sampling is out of control in routine operations.

Statistical control of the within-chemist precision of the first decontamination cycle by-product waste (13-4-BP) analysis in 200 Area canyon buildings was begun, and results are being reported in weekly to the field personnel concerned. Statistical study of product assay differences between Bldgs. 231 and 234-5 was begun, and will be continued as a regular function.

From data submitted by the Analytical Section, a further statistical analysis to re-establish the lanthanum fluoride absorption correction factor in the radio assay of plutonium was initiated. A statistical analysis was completed on the results of an experiment designed to test the effect of dilution and quenching on the precision and accuracy of the fluorinetric determination of uranium. Comparison of analytical results obtained at Hanford and Schenectady (KAPL) on synthetic Redox solutions prepared at Hanford showed good agreement between the analytical work at the two sites.

LIBRARY AND FILES

General

Representatives of the Information Group consulted with G.E. Security, AEC Security, and AEC Office Services, in regard to the final disposition of the classified and unclassified records of the Morganton, North Carolina plant of National Carbon, as a result of the completion of that phase of their work for General Electric.

The Information Group was visited by H. B. Lytz, Security Agent for the Kellex Corporation in New York City, with whom discussions were held regarding the disposition of the Job 11 records as a result of completion of that contract.

Plant Library

The first six volumes of the long awaited National Nuclear Energy Series, published by McGraw-Hill under AEC sponsorship, were received by the Library, as follows:

Voegtlin - Pharmacology and Toxicology of Uranium Compounds
Bloom - Histopathology of Irradiation from External and Internal Sources

Benedict - Engineering Development in the Gaseous Diffusion Process
Rossi and Staub - Ionization Chambers and Counters
Kimball - Bibliography of Research on Heavy Hydrogen Compounds
Dieke and Duncan - Spectrographic Properties of Uranium Compounds

Arrangements were completed with the Purchasing Division to procure the majority of the Technical Library's book purchases through a single dealer. Stechert-Hafner in New York will supply the bulk of the Library's needs for American titles in print, foreign titles in print, and out-of-print items. This agreement with Stechert-Hafner permits a discount (previously unobtainable) up to 10 percent on technical books, and the small fee charged for locating out-of-print items is considerably less than the expense of searching for these items directly by mail. In addition, considerable economy is anticipated in the preparation and processing of book purchase requisitions.

The W-10 Branch of the Library started its Fall schedule of evening hours, 6:00 - 9:00 P.M., to coincide with the opening of the School of Nuclear Engineering.

Library statistics were as follows:

	August	September
Number of books on order received	243	224
Number of books fully cataloged	364	192
Number of bound periodicals processed but not fully cataloged	97	5
Pamphlets added to pamphlet file	31	74
Miscellaneous material received, processed, and routed (Included maps, photostats, patents, etc.)	7	23
Books and periodicals circulated	1278	1265
Unclassified reports processed	294	116
Unclassified reports circulated	203	133
Reference services rendered	1194	853

	Main Library	W-10 Branch	Total
Number of books	4895	1909	6804
Number of bound periodicals	3456	100	3556

Classified Files

As part of the continuing effort to simplify Files procedures, three new office forms were developed: an FRC Posting Notice, which will reduce the amount of inter-area telephoning and assist in insuring the accuracy of the 300 and 700 Area basic records; a Notification of Secondary reproduction, which will expedite handling "yellow copy" coverage of incoming classified material; and a form letter covering periodical renewals.

The list of 234-5 Process subject headings, submitted to the Technical Information Branch of the AEC at Oak Ridge, was accepted as submitted and will be included in the next revision of CA-1927.

Considerable effort was expended during the period in carrying forward the program to standardize the format of Research and Development reports issed by the Technical Divisions. A standard cover, title page, and distribution page were drafted and accepted, and their first use arranged for several reports of this type which are about ready for issuance.

Work statistics for the Classified Files were as follows:

	August	September
Documents routed	11,386	13,019
Documents issued	5,949	4,699
Reference services rendered	2,827	3,313
Reports abstracted	625	745
Registered packages prepared for offsite	377	321
Inter-area mail sent via transmittal	8,366	13,615

Files Assistance Unit statistics were as follows:

Ditto masters run	797	686
Mimeograph stencils run	308	436
Ditto master copies prepared	30,761	26,369
Mimeographed copies prepared	32,125	28,482
Volume of mail handled	17,880	18,190

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.

Inventors	Item
E. M. Kinderman	Electroplating Cell - The direct electrolytic oxidation and distillation of ruthenium
W. N. Carson, Jr.	Adjustable Constant Current Supply
G. B. Barton	Improved Drying Block for Preparation of Counting Discs

Signed [signature]
T. W. Hauff
Division Head

1212731

15 TWH:mcs [redacted]

MEDICAL DIVISIONS

SEPTEMBER 1949

Summary

The Medical Divisions' roll decreased by 18 from 412 to 394.

A group of medical consultants has been secured to assist us in long range planning of the future medical program at this project. They are:

Dr. Herman Smith, consultant in hospital construction and administration, Chicago, Illinois
Dr. Robert A. Moore, Dean of Washington University Medical School, St. Louis, Missouri
Mr. William S. McNary, Director of Michigan Hospital Service, Detroit, Michigan
Dr. S. T. Cantril, Director of Tumor Institute and consultant in radiation protection, Seattle, Washington

The first meeting of this group is scheduled for November 11th and 12th in Richland.

Arrangements have been made to close the North Richland Medical Center as of the close of business, October 7th. Construction industrial medical work will be transferred to Kadlec Hospital. A small medical office with one physician, one dentist, and two public health nurses will be opened in a nearby building to offer basic services to the two thousand residents who are expected to live in North Richland during the next several months.

Decreased revenue to both hospital and clinic, due to drops in population which were not anticipated in the 1950 budget, are a cause of grave concern.

The following trips were made:

Mr. Leon Pullen and Mr. O. Bakko attended the Annual Convention of the American Hospital Association in Cleveland, Ohio.
Miss Alice O'Leary attended the Washington State Public Health Symposium in Seattle, Washington.
Dr. R. R. De Nicola - Surgical Clinics, University of Oregon Medical Medical School, Portland, Oregon.
Dr. Wayne Chesledon - Medical Clinics, Stanford University Medical School, Palo Alto, California.

Visitors were:

(1) Messrs. John Shaughnessy and R. J. McLean from the Washington State Dept. of Labor & Industries to discuss industrial insurance problems.
(2) A group from the 6th Army inspected the North Richland Medical Center. Included were Col. Devine, Col. Rigsby, Maj. Pickering, Capt. Hunt, Capt. Simpson and Mr. Lewis.
(3) Col. Devine and Mr. Ellsworth, the latter representing the bureau of the budget, inspected North Richland Medical Center.

MEDICAL DIVISIONS

SEPTEMBER 1949

Industrial

There was no evidence of injury to any employee due to radiation. However, urinary excretion tests by H. I. have indicated a deposit of about three micrograms of plutonium in the system of one of our employees. This absorption occurred at another project.

Employee physical examinations remained essentially constant at 2863 though a higher percentage of these were terminations. First aid treatments decreased from 7590 to 6354.

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. The major injury was due to passage of current from a high tension circuit completed from top of head to left hand.

Sickness absenteeism increased slightly from 1.10% to 1.29%.

The health topic for October is Diabetes. Free tests for urine sugar are to be offered for one week in an effort to pick up as many presently undetected diabetics as possible among the residents of Richland and North Richland.

Communities - Hospital and Clinics

Installation of the new air-conditioning unit for the surgical and obstetrical wings is nearing completion. This work was necessary to comply with minimum safety standards.

The average daily hospital census was 64.8 as compared to 64.3 for August and 88.9 for the year previous.

Clinic visits dropped from 7478 to 6912, an 8% decrease. The visits were 18% less than the figure for a year ago. Dental visits decreased to 2616. This was 5% less than the one and twelve month previous figures.

Public Health

An increasing incidence of poliomyelitis has received careful attention. Ten cases have been reported to date, nine during September. All of these were children. This gives a rate of 37.5 per 100 thousand population for Richland, which compares with a rate of 60 per 100 thousand in some counties and a rate of 21 per 100 thousand for the state as a whole.

Complete facilities are available at Kadlec for care of the acute phase of the disease and a great deal of the follow-up care. The National Foundation for Infantile Paralysis has assumed the financial obligation for care of the crippling effects of poliomyelitis.

The usual case quarantine methods are being used but we have not recommended closing of schools as this is not felt to be indicated by most public health authorities or the National Foundation for Infantile Paralysis.

MEDICAL DIVISIONS

SEPTEMBER 1949

Costs (August)

The net cost of operating the Medical Divisions (before assessments of workmen's compensation costs to other divisions) was $114,183., a decrease of $7,988. over the previous month and $5,450. under the budget figure. The improvement was due to increased revenue which more than offset increased maintenance cost due to installation cost of air-conditioning equipment for surgery.

The net expense of the Richland community medical program was $28,328., a decrease of $5,970., but still $9,908. over the budget figure. While net revenue was increased by $12,470., it was $15,830. less than budgeted revenue due to decreased population. Kadlec Hospital expense was $22,019., a decrease of $2,130. due to increased revenue. Clinic expense was $6,309., a decrease of $3,840., also due to increased revenue.

MEDICAL DIVISIONS

SEPTEMBER 1949

Industrial Medical Division

General

The total number of examinations decreased from 2918 to 2863, of which 1339 were termination examinations for construction employees. A total of 6354 first aid treatments were given. Included in this number were one major injury and four sub-major injuries sustained by G. E. employees.

A joint meeting of industrial physicians and plant safety men was held during the month. Mutual problems were discussed in an effort to more efficiently coordinate the activities of these two groups.

The Health Activities Committee met on Sept. 22nd. Mr. W. H. Roos will replace Mr. E. H. Kolts as chairman of this committee for the coming year. Ways of reducing absenteeism during the coming months of October, November and December were discussed. The health topic for the coming month on "Diabetes" was presented, and a motion picture was shown on this subject. Material for distribution throughout the plant was prepared to coincide with the National Week for Detection of Unknown Diabetics, Oct. 10th to 14th.

Three representatives from the Washington State Dept. of Labor & Industries were visitors to the Industrial Medical Division during the month. They were shown medical facilities for handling industrial injuries. Discussion centered about reporting all accident cases to them which would substantially increase costs. No agreement has yet been made.

There was no evidence of injury to any employee due to radiation. However, urinary excretion tests by H. I. have indicated a deposit of about three micrograms of plutonium in the system of one of our employees. This absorption occurred at another project.

There was one major injury, received by a G. E. electrician, as a result of electrical shock with severe burns to the skull and left hand, in which partial permanent disability will result.

Of 821 claims filed by construction workers at North Richland alleging job-incurred injury so far this year, 104 cases or 12.6% were rejected by the Washington State Dept. of Labor & Industries. These rejections are the result of careful medical investigation explaining the true facts of each case.

Physical Examinations	Aug. 1949	Sept. 1949	Year to date
Pre-employment (G.E.)	269	149	1243
Annual	544	462	4180
Food Handlers	36	56	538
Sub-contractors	1192	1339	17291
Rechecks	164	133	2134
Interval Rechecks (Area)	607	560	4906
Terminations & Transfers (G.E.)	93	133	2002
Government	13	11	81
Total	2918	2863	32375

MEDICAL DIVISIONS

SEPTEMBER 1949

Laboratory Examinations	Aug. 1949	Sept. 1949	Year to date
Clinical Laboratory			
Government	90	224	580
Pre-employment, terminations, transfers	3520	2322	36548
Annual	3288	2764	25368
Rechecks (Area)	3016	2722	25027
First Aid	42	33	430
Plant Visitors	0	0	4
Clinic	3578	3079	32244
Hospital	2390	2248	27032
Public Health (Inc. food handlers)	143	105	2745
Total	16067	13497	149978
X-Ray			
Government	10	7	58
Pre-employment, terminations, transfers	517	313	4947
Annual	572	494	4327
First Aid	152	129	2055
Clinic	254	321	3041
Hospital	128	103	1890
Public Health (Inc. food handlers)	35	41	625
Total	1668	1408	16943
Electrocardiographs			
Industrial	163	55	1277
Clinic	9	9	119
Hospital	22	12	234
Total	194	76	1630
Allergy			
Skin Tests	27	22	409
Pathological Slides			
Hospital	0	0	747
First Aid Treatments			
Occupational Treatments	840	549	12054
Occupational Retreatments	3148	2312	45360
Non-occupational Treatments	3602	3493	42009
Total	7590	6354	99423

MEDICAL DIVISIONS

SEPTEMBER 1949

Major Injuries	Aug. 1949	Sept. 1949	Year to date
General Electric	0	1	8
Sub-contractors	5	1	85
Total	5	2	93
Sub-major Injuries			
General Electric	5	4	36
Sub-contractors	12	8	224
Total	17	12	260
Absenteeism			
Weekly employees, all causes	1.72%	1.92%	2.33%
Weekly employees, sickness only	1.10%	1.29%	1.57%
Total days lost by males due to sickness	727	855	11567
Total days lost by females due to sickness	546	654	8039
Total days lost due to sickness	1273	1509	19605
Investigation:			
Total calls requested	10	16	173
Total calls made	10	16	173
No. absent due to illness in family	0	0	2
No. not at home when call was made	0	1	19

Village Medical Division

General

Dr. J. R. Starrett, our house physician, terminated during the month and we are looking for a replacement.

Approval was received from the A. E. C. for the installation of a water line from the 700 Area powerhouse to Kadlec Hospital. This will afford soft water throughout the hospital, and will result in a considerable saving in the maintenance of hospital equipment.

Installation of the new air-conditioning unit for surgical and obstetrical wings is nearing completion. Pediatrics was moved from the main corridor of the hospital to the extreme west wing.

Operations in the North Richland medical building will cease as of the close of business on October 7th. Provisions have been made for an out-patient clinic to operate in a nearby building. These services will include medical, dental and public health.

Medical Divisions' roll decreased from 412 to 394, a net decrease of 18.

The hospital newborn nursery continues to run at a dangerously high occupancy rate, operating for the current month at 157.5%.

MEDICAL DIVISIONS

SEPTEMBER 1949

General (Continued)

The average daily census was 64.8, as compared to 64.3 for August and 88.9 for September, 1948. This represents a 27% decrease in patient load over a year ago.

Clinic visits decreased from 7478 to 6912, which is an 8% decrease as compared with the previous month and 18% below the figure for a year ago. North Richland Medical Center accounted for 4.5% of the total.

The net expense of the Richland community medical program for August was $28,328., as compared to $34,298. for July. Breakdown is as follows:

Kadlec Hospital expense This is a decrease of $2130. over July, and is due primarily to an increase in revenue.	$ 22,019.
Clinic expense This is a decrease of $3,840. over July and is due primarily to an increase in revenue.	$ 6,309.

Clinic Visits	Aug. 1949	Sept. 1949	Year to date
Medical	1239	1177	13408
Pediatrics	819	774	6870
Well Babies	144	107	1593
Surgical	794	635	7250
Gynecological	522	464	5270
Obstetrics (new)	96	78	822
Obstetrics (recheck)	843	863	7839
Venereal disease	30	16	1414
Ear, Nose & Throat	403	369	4192
Eye	281	288	2478
Visits handled by nurses	1407	1278	14003
Night clinic visits	900	863	7566
Total	7478	6912	72705
Average clinic visits per day	288	266	310

Source of Richland Clinic Visits

Richland	68%
North Richland	17%
Other	15%

Home Visits (Pay Cases)

Doctors	128	116	2097
Nurses	66	130	3022
Total	194	246	5119

MEDICAL DIVISIONS

SEPTEMBER 1949

Kadlec Hospital	Aug. 1949	Sept. 1949	Year to date
Census			
Admissions	463	389	4531
Discharges:			
Surgical	95	74	937
Medical	63	38	839
Obstetric & gynecologic	107	128	1026
Eye, Ear, Nose & Throat	65	42	564
Pediatrics: Children	24	31	381
Newborn	72	82	714
Total discharges	426	395	4561
Patient Days	1996	1946	23297
Average Stay	4.3	5.0	4.9
Average Daily Census: Adults		52.2	
Infants		12.6	
Total Average Daily Census	64.3	64.8	85.6
Discharged against advice	1	2	20
One-day cases	99	59	803
Occupancy Percentage: Adults	57.9%	58.6%	81.4%
Infants	160.3%	157.5%	169.0%
Admission Source: Richland	72.3%	76.9%	66.3%
North Richland	9.6%	8.0%	15.2%
Other	18.1%	15.1%	18.5%
Operations			
Transfusions	64	72	447
Eye, ear, nose, throat	65	26	475
Dental	2	0	13
Casts	22	24	193
Minors	54	56	601
Majors	48	36	507
Vital Statistics			
Deaths	6	7	52
Deliveries	86	79	706
Stillborn	0	2	7
Physictherapy Treatments			
Clinic	131	95	967
Hospital	40	91	470
Industrial: Plant	132	141	2090
Personal	72	28	517
Total	375	355	4044
Pharmacy			
No. of prescriptions filled	2829	2482	29164

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MEDICAL DIVISIONS

SEPTEMBER 1949

Patient Meals	Aug. 1949	Sept. 1949	Year to date
Regulars	2363	2738	31251
Lights	68	41	1196
Softs	835	719	10873
Surgical Liquids	110	67	842
Tonsils & Adenoids	149	67	1129
Specials	1040	678	9446
Liquids	151	126	1866
Total	4716	4436	56603
Cafeteria Meals			
Noon	2320	2060	21415
Night	307	224	2746
Total	2627	2284	24161
Nursing Personnel			
First aid nurses	36	36	
Clinic nurses	16	15	
Public health nurses	12	12	
Hospital general nurses	62	60	
Aides & Orderlies	32	36	
Total	158	159	

Public Health Division

General

The control of an outbreak of poliomyelitis was the greatest problem encountered. The rate of 37.5 per 100 thousand brings us above the accepted standard of usual incidence in U. S. of 10 per 100 thousand. National authorities state that between 10 and 100 abortive or sub-clinical cases appear for each diagnosed case. The National Foundation for Infantile Paralysis has assumed the obligation for care of post-polio cases.

A consultant from the State Health Dept. pointed out that federal and state funds for the continuance of Crippled Children Clinics have been curtailed. To carry on this work, local participation must be sought.

Fly control has become a problem, and it has become necessary to substitute other insecticides for DDT. Community management has indicated that they will eliminate breeding areas, such as horse corrals, from the confines of Richland proper.

MEDICAL DIVISIONS

SEPTEMBER 1949

Administration	Aug. 1949	Sept. 1949	Year to date
Newspaper Articles	10	15	158
Committee Meetings	3	5	66
Attendance	15	20	735
Staff Meetings	4	3	21
Lectures & Talks	3	12	41
Attendance	70	232	3071
Conferences	5	25	262
Attendance	25	200	1195
Radio Broadcasts	0	0	3
Immunizations			
Cholera	0	0	3
Diphtheria	106	350	2076
Influenza	0	21	26
Rocky Mt. Spotted Fever	3	0	86
Smallpox	16	102	859
Tetanus	28	69	125
Typhoid	3	3	33
Whooping Cough	0	2	4
Vollmer Patch Test	0	7	14
Total	156	554	3226
Social Service			
Cases carried over	87	86	777
Cases admitted	13	23	192
Total	100	109	969
Cases closed	14	29	191
Remaining case load	86	80	778
Sources of referral:			
Public Health	3	4	33
Doctors	7	11	83
Hospital	0	0	2
Interested person	3	2	17
School	0	0	5
Personnel office	0	0	1
Personal application	0	1	18
Housing	0	0	2
Other agency	0	4	18
Miscellaneous	0	1	14
Total	13	23	193
Sanitation			
Inspections made	159	159	2469

MEDICAL DIVISIONS

SEPTEMBER 1949

Bacteriological Laboratory	Aug. 1949	Sept. 1949	Year to date
Treated Water Samples	247	153	1762
Milk Samples (Inc. cream & ice cream)	123	146	1106
Other bacteriological tests	196	186	2321
Total	566	485	5189
Communicable Diseases			
Amoebic Dysentery	1	0	3
Chickenpox	12	17	580
German Measles	8	4	189
Gonorrhea	1	1	30
Impetigo	0	1	7
Influenza	0	0	9
Measles	5	0	374
Meningococcic Meningitis	0	0	3
Mumps	0	2	28
Pediculosis	0	0	12
Pinkeye	0	0	33
Poliomyelitis	0	9	10
Ringworm	1	1	18
Scabies	0	0	8
Scarlet Fever	0	0	12
Syphilis	0	3	81
Tuberculosis	1	0	8
Vincent's Infection	0	1	3
Whooping Cough	0	0	5
Total	29	39	1413
Total No. Nursing Field Visits	790	685	10896

Dental Division

General

Dental visits decreased 5% over the previous month, and approximately the same amount over a year ago.

Patients treated	2762	2616	25823

MEDICAL DIVISIONS

PERSONNEL SUMMARY — September 30, 1949

	1100 Area					3000 Area					
	Division Administration	Industrial	Clinic	Hospital	Public Health	Administration	Industrial	Clinic	Hospital	Public Health	Sub-total
Physicians	2	3.2	17.3	1	1		3	3			30.5
Dentists			9					1			10.
Nurses	2	10	13	60	10		2	2		2	101.
Nurse Aides		1	2	25	1						29.
Orderlies				6				1			7.
Ambulance Drivers		2									2.
Tech., Dent. Hyg.			1								1.
Tech., Clin. Lab.				13.2			1				14.2
Tech., X-Ray Lab.				4			1				5.
Tech., Bact. Lab.				1							1.
Tech., Phys. Ther.				2							2.*
Accountants	2										2.
Secretaries	2										2.
Cler. Working Leaders	1			1							2.
Steno. & Typists	3			4	2						9.
Off. Mach. & Tel. Opr.	6				1						7.
Gen'l Clerks	20	14	9	8		1	9	1			62.
Pharmacists				4							4.
Dietitian				2							2.
Cooks				5							5.
Kitchen Workers				11							11.
Social Serv. Counselors					3						3.
Sanitarians					3						3.
Health Educator					1						1.
Dental Assistants			8					1			9.
Janitors		4.8	2.7	7.4	.7		1.2	1		.2	18.
Bacteriologists				2							2.
Records, Supervisors	2										2.
Acctg Supervisors	3										3.
Admin. & Assistants	3										3.
Others			3	6	1						10.
Total	46	35	65	162.6	23.7	1	17.2	10	0	2.2	362.7

* One physiotherapist working half days only.

Medical Divisions' personnel located in outlying areas shown on next page.

MEDICAL DIVISIONS

PERSONNEL SUMMARY — Sept. 30, 1949

	Sub-total	Outlying Areas								Total
		100-H	White Bluffs	100-B	100-D	100-F	200-E	200-W	300	
Physicians	30.5	.25	.25	.1	.1	.1	.2	.3	.2	32
Dentists	10									10
Nurses	101	3	1	1	2	4	4	5	2	123
Nurse Aides	29									29
Orderlies	7									7
Ambulance Drivers	2									2
Tech., Dent. Hyg.	1									1
Tech., Clin. Lab.	14.2				.4	.4	.4	.8	.8	17
Tech., X-Ray Lab.	5									5
Tech., Bact. Lab.	1									1
Tech., Phys. Therapy	2									2*
Accountants	2									2
Secretaries	2									2
Cler. Work. Leaders	2									2
Steno. & Typists	9									9
Off. Mch. & Tel. Opr.	7									7
Gen'l Clerks	62	1		.5	.5	1	.5	.5	1	67
Pharmacists	4									4
Dietitian	2									2
Cooks	5									5
Kitchen Workers	11									11
Soc. Serv. Counselors	3									3
Sanitarians	3									3
Health Educator	1									1
Dental Assistants	9									9
Janitors	18									18
Bacteriologists	2									2
Records Supv.	2									2
Acctg Supervisors	3									3
Admin. & Assts	3									3
Others	10									10
Total	362.7	4.25	1.25	1.6	3	5.5	5.1	6.6	4	394

* One physiotherapist working half days only.

Number of employees on payroll:

Beginning of month	412
End of month	394
Net decrease	18

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HW-14596

DECLASSIFIED

HEALTH INSTRUMENT DIVISIONS

SEPTEMBER, 1949

Summary

Personnel additions and removals from the roll resulted in a net loss of four people. There were five Special Hazards Incidents reported, none involved significant exposure.

The Operational Division report showes no improvement in the frequency of skin contamination and indicates an increase in the number of incidents which could lead to serious injuries unless the trend is stopped.

In the Development Division, a slight increase in atmospheric radiation levels was noted. A decided increase in active particles collected at local and outlying monitoring stations was observed. In Bioassay, six significant Pu results from previous months were not confirmed by resamples in this period. The maximum uranium content found in urine of 300 Area workers was 33 μg/liter.

In the Biology Division, no unusual radioactivity was noted in the course of routine biological monitoring. Activity of aquatic forms such as bottom algae, plankton and midge larvae continued to increase over the previous high levels, accompanying the slight rise in river water activity. However, radioactivity in caddis flies and young fish remained at levels similar to those of last month while activity in large fish has decreased slightly. Because of favorable collecting conditions, a record number of samples was analyzed for beta activity.

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Health Instrument Divisions

HEALTH INSTRUMENT DIVISIONS

SEPTEMBER 1949

Organization

The composition and distribution of the force as of 9/30/49 was as follows:

	100-B	100-D	100-F	100-H	200-W	200-E	300	700	P.G.	Total
Supervisors	1	1	3	1	9	4	14	6	0	39
Engineers	4	4	10	3	21	11	8	3	0	64
Clerical	0	0	2	0	1	2	3	4	0	12
Others	7	8	24	9	63	28	45	11	4	199
Total	12	13	39	13	94	45	70	24	4	314

Number of Employees on Payroll	September 1949
Beginning of Month	318
End of Month	314
Net change	- 4

Added to the roll were two engineers, two laboratory assistants, three technical graduates, two inspectors, one biological attendant, one field clerk, and two general clerks. Removed from the roll were two secretaries, three technical graduates, one engineer, three badge workers, two personnel meters clerks, two general clerks, one motor-messenger, one shift supervisor, and two field clerks.

General

There is an apparent increase in the general level and incidence of contamination throughout the Plant. Though much of this is to be expected when work involving high level contamination is concentrated in a relatively short period of time, the evident increase in contamination of face and hands and near serious incidents associated with the work is alarming, and points to a need for greater attention by supervision to Danger Zone procedures and practices before more serious exposures occur.

A marked increase in the number of active particles collected at such outlying stations as Spokane, Washington, and Great Falls, Montana, was noted during September. In view of previous data collected, it seems unlikely that all of these particles originated at Hanford.

Health Instrument Divisions

Five Class I Special Hazards Incidents were investigated. Two of them involved personnel contamination; one involved improper canyon entrance control; the other two concerned improper control of contaminated equipment.

The following trips were reported:

H.M. Parker - (1) New York Office and New Jersey Laboratory of Kellex Corp. - Hazard control consultation.
(2) Chalk River, Ont., Canada - attended National Research Council Laboratories Health Conference on permissible exposures.
(3) Argonne National Laboratory - consultation with Drs. A.M. Brues, and J.E. Rose.
(4) Cincinnati, Ohio - American Roentgen Ray Society - lecture on Radiation Dosimetry.

C.M.Patterson -
(1) Jersey City - consultation on H.I. problems at Kellex Corp.Lab.
(2) Brookhaven National Laboratory - consultation on H. I.problems.
(3) Knolls Atomic Power Laboratory, Schenectady, N.Y. - consultation on H.I. problems.

R.E. Brown - Portland, Oregon - consultation with AM Piper of the U.S.G.S.

N.L. Dockum - University of Rochester - instruction in radioautographic technique.

P.L. Eisenacher -
(1) Syracuse, N.Y. - attended G.E.Radiation Instrument Committee Meeting
(2) Schenectady, N.Y., K.A.P.L. - Instrument problem discussions.
(3) Ft.Monmouth, N.Y. - attended Radiation Council symposium.
(4) New York,N.Y. - attended National Research Council Subcommittee Meeting on Instrumentation and Techniques.

P.A. Olson, R.W. Coopey, - Bonneville Dam - to arrange specimen procurement.

L.K. Bustad - Prosser, Ellensburg, and Granger, Wn., - concerning animal farm organization.

K.E. Herde - Ellensburg, Wn., - procurement of sheep.

Visitors included: Dr. Lauren Donaldson, University of Washington; Dr. Orlin Biddulph, Washington State College; and Dr. P.E. Church, University of Washington.

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Health Instrument Divisions

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

Inventor	Title
none	none

Health Instrument Divisions

OPERATIONAL DIVISION

100 Areas

General Statistics

	August				September				1949 to Date
	B	D	F	Total	B	D	F	Total	
Special Work Permits	570	735	760	2065	655	539	708	1902	17,840
Routine & Spec.Surveys	521	491	567	1579	464	431	769	1664	14,542
107 Effl ent s rveys	89	94	87	270	94	90	87	271	2,544
Air Monitoring samples	74	113	100	287	101	104	114	319	2,847

Retention Basin Effluent

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

	100-B	100-D	100-F
Power level (MW)	275	305	275
Average beta dosage-rate (mrep/hr)	0.9	0.9	0.8
Average gamma dosage-rate (mr/hr)	1.8	2.2	2.5
Average total dosage-rate (mrep/hr)	2.7	3.1	3.3
Average integrated dose in 24 hrs. (mrep)	65	74	78
Maximum integrated dose in 24 hrs. (mrep)	79	98	91
Maximum integrated dose in 24 hrs. (mrep)(1949)	108	132	106

100-B Area

Pile and Associated Buildings

A maximum exposure rate of 600 mr/hr was encountered momentarily while two irradiated special request pieces were being charged into process tubes. Airborne contamination was observed in the discharge area during tube replacement, and was attributed to not swabbing the tube prior to removal and cutting. An air sample taken on the discharge elevator during the cutting operation showed a concentration of 8×10^{-5} μc/liter for beta emitters.

The radiation beam at the top, far edge of the pile showed a gamma intensity of only 12 mr/hr. The previous reading of 140 mr/hr reported in the August report included the general background level of the gas behind the neoprene seal.

P-10 Operations - 108 Building

Tritium production from lithium-aluminum alloy material was started on August 25. Major changes in the design of the upstairs hood room for health protection included a separate exhaust manifold for out-gasing which enters the main exhaust duct near the stack, a room air monitoring manifold which samples air at

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Health Instrument Divisions

the outside of each hood, and a fresh air manifold allowing use of fresh air masks anywhere in the room. Fresh air masks are used when any active process hood door is open or a filled product flask is in the room.

During the charging and discharging of furnaces, personnel was exposed to an average radiation level of 50 mr/hr while transferring the furnace tubes between the furnace and the cask.

Weekly urine samples gave no positive indication of tritium intake by personnel during this period.

Metallurgical Laboratory - 111 Building

Personnel exposure levels were held to 50 mr/hr during the sectioning and photographing of a thimble section. One sectional piece showed a surface dosage-rate of 4.3 roentgens per hour.

A maximum dosage-rate of 4 roentgens per hour was observed while an irradiated slug cap was transferred from one sample cask to another. A small area of the floor became contaminated but was easily cleaned.

100-D Area

As the storage basin was pumped down to facilitate entry into the chutes for repairing liners, the radiation level in the discharge area reached 2 roentgens per hour. Upon investigation it was discovered that two pieces of irradiated metal were lodged at the side of a chute pier. The basin was refilled before removing them.

Water discovered on top of the minus 9-ft. near cubicles during a routine survey gave a dosage-rate of 3 rep/hr including 200 mr/hr at 6 inches. Investigation found it to be from a leak in #5 horizontal safety rod. The rod was withdrawn beyond the first limit switch and the water turned off. Entry was then made into the inner rod room labyrinth for observation purposes. The estimated exposure rate including neutrons was 1.2 rem/hr.

Personnel was momentarily exposed to a maximum dosage-rate of 1.35 rep/hr including 100 mr/hr (average 300 mrep/hr) while tying out #20 vertical safety rod after a scram. A dosage-rate of 5 roentgens per hour at 4 feet was observed when a bucket of dummies was removed from the storage basin. A four inch irradiated metal piece was found after returning the bucket to the basin.

The intensity of the beam at the top, far edge of the pile decreased from 2 roentgens per hour as reported last month to 1.5 roentgens per hour. The neutron flux decreased but not as sharply. There was no appreciable change in the gamma reading on the 50-ft. far roof.

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Health Instrument Divisions

100-F Area

Replacement of vertical safety rod thimbles continued with exposure-rates as high as 7 rep/hr encountered. A new shield designed for use during the thimble cutting operation reduced the exposure-rate by a factor of two. Air samples taken during the operation showed a maximum of 3.3×10^{-4} μc/liter for beta emitters.

Many cases of "short" charges were experienced and subsequent splining operations in one case resulted in glove contamination of 100 mrep/hr. Irradiated pieces left on the tip-offs in the discharge area caused abnormally high exposure rates, but no overexposures occurred.

A rear face cap was mistakenly removed while 75 psi of water pressure was on the tube. Resulting contamination on the face of one operator was successfully removed.

Decontaminations were successful in eight cases of hand or face contamination, all attributed to poor Danger Zone techniques. Effluent vapor discharged from the 60-ft. level vent on the effluent line caused floor contamination in the "D" machinery room and rear stairwell. Widespread S^{35} contamination was again found on the floor in a drier room of the gas purification building. Decontamination efforts were successful.

The gamma intensity of the beam at the top, far edge of the pile decreased about 20 to 30% during the latter part of the month. The fixed slow neutron chamber at the center of the top, far edge showed the same decrease. However, the beam width as evidenced by film exposures showed a slight increase on the front, far corner of the top. A beam of low intensity is now evident on the front edge near the far corner, and also on the near edge approximately 3 feet from the front. These were not evident in previous routine film surveys.

200 Areas T and B Plants

General Statistics

	August			September			1949
	T	B	Total	T	B	Total	To Date
Special Work Permits	327	391	718	265	310	575	6,787
Routine & Special Surveys	535	568	1103	477	450	927	9,370
Air Monitoring Samples	461	889	1350	418	828	1246	10,636
Thyroid Checks	168	101	269	132	79	211	1,869

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Health Instrument Divisions

Canyon Buildings

In the T Plant, wide spread contamination, both fission product and product, was encountered in the canyon deck as the result of repair and removal of cell equipment. Fission product dosage-rates up to 28 rep per hour including 2 roentgens per hour at 2 inches and product contamination levels as high as 1,000,000 d/m were reported. Decontamination efforts have been in progress and additional decontamination work will be done. A connector from cell 16-L with a maximum surface dosage-rate of greater than 15 rep per hour was regasketed with an exposure rate of 2 rep per hour. Monitoring assistance was given by Health Instrument personnel while taking one 13-4 BP., two 8-4, and three 12-7 P. samples with a maximum dosage-rate of 40 rep per hour at 6 inches reported. A total of 130 positive air samples was obtained in the canyon, the maximum giving a surface dosage-rate of 250 mrep/hr taken during impacting and sparging in cell 8 with the blocks removed.

In the B Plant, increased maintenance and removal of cell equipment resulted in contamination of the canyon deck with surface dosage-rates up to 33 rep per hour reported. During this time, air concentration of 8.5×10^{-6} μc f.p./liter was obtained in the R-13 Change House. The door between the R-13 Change House and the canyon has been sealed. Decontamination work is in progress. Banding of the 19-3 tank was completed with readings of 15 rep per hour including 300 mr/hr at 8 inches with a maximum exposure rate of 10 rep per hour reported. Monitoring assistance by H. I. was given during the transfer of a 15-8 sample with exposure rates as high as 33 rep per hour at 8 inches reported. The equipment involved in this sample was buried with an exposure rate of 1.5 rep per hour including 300 mr/hr at 4 feet. The dosage to all personnel involved was less than 100 mr as verified by the pencils, badges and finger rings.

Control Laboratories

In the T Plant, a total of 232 items, not regulated with respect to handling, was found contaminated on surveys by Health Instrument and Technical personnel. In addition, 39 contaminated floor locations were reported. A plant issued shoe giving a surface dosage-rage of 215 mrep/hr including 4 mr/hr at 2 inches was successfully cleaned. Two cases of product hand contamination to levels of 20,000 d/m and 30,000 d/m, respectively, were reduced to 1,000 d/m before further decontamination efforts were abandoned. Later survey revealed the contamination in one case to have disappeared. The other was successfully reduced. In addition, there was one other instance of product skin contamination and one case of fission product skin contamination. Both were successfully cleaned. Twelve product air samples were obtained in the building with a maximum concentration of 1.3×10^{-11} μg Pu/cc in hood 3, Room 7. Contamination was found under the hood and cleaned. Further air samples failed to show any positive results.

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Health Instrument Divisions

In the B Plant, a total of 72 items, not regulated with respect to handling, was found contaminated by Technical and Health Instrument personnel. In addition, 23 floor locations were reported contaminated and were successfully cleaned. Two cases of fission product hand contamination were successfully reduced. The maximum dosage-rate obtained on waste for the 300 Area was 2.6 rep per hour including 150 mr/hr at 2 inches. Slurping was accomplished with a maximum exposure rate of 1 rep per hour. An air sample concentration of 1.6×10^{-10} ug Pu/cc was obtained in Room 7; however, investigation of the filter indicates contamination to be one small spot. Further air sampling would not substantiate the previous result.

Concentration Buildings

In the T Plant, one case of hand contamination of about 30,000 d/m was reported after taking samples in F cell. Decontamination was successful. Also, several contaminated floor locations were reported in the F-10 room and the adjoining change room and were successfully decontaminated. The G. E. Cocoon was installed on the A-1 and A-3 tanks. Smears of the cell roof fans indicated a maximum of 15,000 d/m on the A cell fan.

In the B Plant, continuous air samples of the roof exhausts of cells A, B, and D showed a slight increase to 14 ug, 18 ug, and 27 ug per day respectively. However, operation of the cells has increased over this period. An air sample concentration of 1.5×10^{-11} ug Pu/cc was obtained on the top of the 224 Building water tower.

Stack Area

In the T Plant, a maximum dosage-rate of 70 mr/hr at 2 inches from the sand filter inlet elbow was reported.

In the B Plant, a Fiberglas filter was changed with a reported dosage-rate of 33 rep per hour at surface including 300 mr/hr at 3 inches. The maximum exposure rate was 19 rep per hour. The activity on the inlet duct to the sand filter has increased to 709 mr/per hour at 2 inches.

Waste Disposal Areas

In the T Plant, radiation levels of 750 mrep/hr at surface including 12 mr/hr at 2 inches was reported on the 4 inch riser of the 101-TX tank. The New York Central car #9158 has been decontaminated and released. Two 100 gallon metal waste samples were taken from the 103-U tank with a maximum exposure rate of 750 mrep/hr. A maximum dosage-rate of 3 mr/hr at 2 inches on the outside of the loaded casks was reported.

Plant Laundry

A total of 55 spot and 39 continuous air samples was taken. The maximum

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Health Instrument Divisions

concentration calculated as U amounted to 1.8×10^{-5} µg U/cc. This sample occurred while 300 Area clothing was being washed. The maximum fission product concentration observed was 2×10^{-7} µc/liter.

General

All thyroid checks were below the warning level.

The Isolation Building

General Statistics

	August	September	1949 to Date
Special Work Permits	15	32	292
Routine & Special Surveys	305	218	2662
Air Monitoring Samples	622	432	4286

Operating Cells

Two items, not regulated with respect to handling, were found contaminated by Health Instrument personnel, and were less than 2000 d/m. There were no instances of floor contamination. One instance of product hand contamination of approximately 1900 d/m was successfully cleaned. A total of 36 special air samples was taken, testing the unfiltered and filtered air from the A leg of cell 2, and testing the assault mask canisters. The maximum concentration found was 1.2×10^{-11} µg Pu/cc on the filtered air. No results are available for the unfiltered air concentrations since the assault mask canister pro-

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gram has been completed. Complete details of this study have been written in a formal report. Nine samples of the 903 system exhaust air show a maximum concentration of 1.2×10^{-12} µg Pu/cc.

The maximum level of gamma radiation encountered was 21 mr/hr on P.R. containers, 3 mr/hr at the process hoods, and 5 mr/hr on the S.C. cans.

Control Laboratories

A total of 151 items, not regulated with respect to handling, was found contaminated by Technical and Health Instrument personnel. Ten of these items were above 20,000 d/m including 2 above 80,000 d/m. In addition, there were 4 contaminated floor locations reported with a maximum of 35,000 d/m.

A total of 174 spot and continuous air samples was taken with a maximum concentration of 5.1×10^{-11} µg Pu/cc taken in Room 6C during the slurping of samples. Further investigation of Room 6C revealed contamination on the RC container which was subsequently cleaned. Further air concentrations were less than 1×10^{-11} µg Pu/cc.

Technical Development Laboratories

Two items, not regulated with respect to handling, were found contaminated by

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Health Instrument Divisions

Health Instrument personnel. One was above 80,000 d/m. One floor contamination was reported following a spill of approximately 5 milligrams of Pu in Room 42, resulting when a beaker of solution boiled and overflowed. Decontamination of the equipment and floor is in progress. No personnel contamination resulted from this incident. No other floor contamination was found and no instances of skin contamination were reported.

Of the 15 spot and continuous air samples taken, the maximum concentration was 6.3×10^{-11} µg Pu/cc in room 42 during gross product contamination on equipment and floor.

234-5 Building

General Statistics

	August	September	1949 To Date
Special Work Permits	201	247	610
Routine & Special Surveys	385	374	1009
Air Monitoring Samples	2276	1500	5288

Technical Section

A total of 95 positive air samples was obtained, 74 of which were less than 1×10^{-11} µg Pu/cc. The maximum concentration of the remaining 21 samples was 6.8×10^{-11} µg Pu/cc obtained in Room 157 during the removal and repair of equipment. Respiratory protection was not used during this work.

A total of 109 contaminated items was found outside the hoods, of which 15 were greater than 20,000 d/m, including 6 greater than 40,000 d/m. In addition, 90 contaminated floor locations were found in the laboratory rooms and adjacent corridors with a maximum of 30,000 d/m found in corridor 4. A total of 24 incidents of contamination to protective apparel occurred with a maximum of 50,000 d/m.

A total of 10 cases of skin contamination was reported with a maximum of 2 µg involved, and decontamination was successful in all cases.

234 Building - Operating Section

A total of 58 positive air samples was obtained, 20 of which were less than 1×10^{-11} µg Pu/cc. Of the remaining 38 samples, a maximum of 3.2×10^{-9} µg Pu/cc was obtained during the repair work on a scrubber in Room 228. Respiratory protection was worn by all personnel involved.

Three incidents of contamination spread from Room 228 resulted in floor contamination in the adjacent corridors and rooms as a result of extensive maintenance work involving gross amounts of product in this work.

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Health Instrument Divisions

A total of 11 incidents of protective apparel contamination occurred with a maximum of 1.3 μg Pu found on the sleeve of the coveralls during decontamination work in Room 227. In addition, 6 cases of skin contamination occurred with a maximum of 70,000 d/m involved. Decontamination was successful in all cases.

A contaminated minor injury involving approximately 1000 d/m occurred when broken glass was being removed from hood 8. The glass penetrated the rubber glove causing the injury. The incident was formally investigated. Another incident of skin contamination occurred near the mouth of an operator as a result of a ruptured glove when the contamination appeared to blow out of the rubber port. Decontamination was successful.

235 Building - Operating Section

A total of 34 positive air concentrations was obtained, of which 19 were greater than 1×10^{-11} μg Pu/cc. A maximum concentration of 6.5×10^{-10} μg Pu/cc was obtained during the removal of waste through an air lock. Respiratory protection was worn by all personnel.

A series of skin contamination occurred when the thumb of both the surgical glove and the port rubber glove disintegrated during process work. This contamination involved approximately 30 μg Pu and decontamination was successful.

General Building

A total of 44 positive air samples was obtained of which 4 were greater than 1×10^{-11} μg Pu/cc with a maximum of 4.4×10^{-9} μg Pu/cc obtained in the D-6 sump tank pit. In addition, 60 samples of stack air taken after the primary filter were less than 10^{-12} μg Pu/cc. Of a total of 22 air samples taken from the 26 inch vacuum line, 11 were greater than 1×10^{-12} μg Pu/cc with a maximum of 2×10^{-10} μg Pu/cc.

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Health Instrument Divisions

The 300 Area

General Statistics

	August	September	1949 To Date
Special Work Permits	235	292	1874
Routine & Special Surveys	197	216	1577
Air Monitoring Samples	164	234	1266

Metal Fabrication Plant

Forty-two of sixty-two air samples were greater than 5×10^{-5} µgm U/cc as fcllows:

Location	Number Taken	Number Above 5×10^{-5} µg. U/cc	Maximum Conc. µg. U/cc	Conditions
313 Building				
Chip Recovery	18	12	6.0×10^{-4}	Normal Operation
Machining	7	0	---	---
Pulverizer Stack	3	3	2.2×10^{-2}	Pulverizer Operating
314 Building				
Main Room	32	25	3.6×10^{-4}	Oxide burning in outgassing furnace
Saw	2	2	3.0×10^{-4}	Sawing billets

Air samples taken while straightening rods coated with machining coolant oil were only 5 times tolerance concentration for uranium as compared with a maximum of 50 times tolerance for uncoated rods. Extensive daily clean-up in the 314 Building seemed to improve the level of air contamination in the building.

Technical Building

A small fire occurred in Room 8 when wet uranium sludge was heated on a hot plate. Air samples in Room 8 and the hallway showed a concentration less than 5×10^{-5} µg. U/cc.

In Room 98, during a preliminary survey prior to transferring dissolver solution, a dosage-rate of 400 mrep per hour including 20 mr/hr at 14 inches was reported in the NE hood. The source of the radiation was an unshielded dry waste carton and the surface dosage-rate on the carton was 27 rep/hr including 1 r/hr at 2 inches. The carton was removed remotely from the hood and placed

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in a lead cask. Since the total time spent in front of the hood involved an exposure calculated as close to the daily tolerance, the research chemist was advised to discontinue radiation work for the remainder of the day. Personnel Meters for this man indicated no overexposure.

During the preparation of a small dissolver solution sample for spectrographic analysis, a surface dosage-rate of 1.5 rep per hour, including 20 mr/hr at 2 inches, was reported. The reading was not corrected for source size.

Personnel exposure was maintained at a low level during this work and no appreciable air contamination was observed during the subsequent sparking of the sample.

A continuous air sample in Room 1 showed a concentration of 2.6×10^{-11} μg Pu/cc, and led to the discovery of two contaminated counting instruments. One chamber pedestal was contaminated to the extent of 40,000 d/m, and this chamber had been sent to the 700 Area instrument shop without release. The incident was formally investigated.

A routine survey in Room 98 revealed plutonium contamination in one hood to the extent of 15,000 d/m. The hood was successfully decontaminated. Seven cases of hand contamination were reported, and all were satisfactorily reduced.

Cold Semi-Works Building

An initial survey of a used, process centrifuge from the storage area showed readings as high as 5,000 d/m, presumably due to plutonium. Extensive decontamination is underway.

A total of about 1,258 lbs. of uranium has been discharged to the old waste pond. The total uranium in the 300-North crib remains at about 63 lbs.

Hand Score Summary

A total of 34,977 alpha and 33,639 beta hand scores were reported. About 0.14% of the alpha and about 0.09% of the beta scores were high. No attempted reduction was indicated for 2 high alpha and 1 high beta score, all in the 300 Area. Where decontamination was attempted, it was successful in all cases.

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Health Instrument Divisions

PERSONNEL METERS

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W	300	Total	1949 To Date
Pencils read	9,063	9,770	15,185	260	26,016	41,932	34,935	137,161	1,332,346
Single readings (100 to 280 mr)	10	10	21	1	20	73	36	171	2,188
Paired readings (100 to 280 mr)	0	0	0	0	1	0	0	1	18
Single readings (Over 280 mr)	22	28	56	3	29	99	74	311	2,678
Paired readings (Over 280 mr)	0	0	0	0	0	2	1	3	31
Paired readings Lost	0	0	1	0	0	0	1	2	49

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

Badge Resume, Construction Areas

	105 DR	Total	1949 To Date
Badges Processed	426	426	63,107
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

	100-B	100-D	100-F	200-E	RRT 200-N	200-W	300	Total	1949 To Date
Badges Processed	1,648	1,798	2,325	3,218	772	3,427	7,154	20,342	178,179
Number readings: (100 to 500 mrep)	1	17	2	3	1	30	96	150	2,106
Number readings: (Over 500 mrep)	0	0	0	0	0	0	0	0	21
Lost Readings:	0	0	1	0	0	3	1	5	148

Lost readings were accounted for as follows:

Badges dropped in liquid	3
Sensitive film not packaged	1
Open window shot with X-rays	1

Investigation of lost readings showed no possibility for an overexposure.

Badges processed, 1949, - Operations 178,179 Construction 63,107
Total badges - 241,286

In addition 1,767 items of non-routine nature were processed. The 1949 total to date is 21,512.

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Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

Site Survey

Water samples were taken from all scheduled locations. The 300 Area sanitary water averaged 11 dis/min/liter of alpha activity presumably due to 1,000,000 gallons of water pumped from 300 Area Well #2. This well was the highest in the 300 Area with an average of 210 dis/min/liter.

A slight increase in the atmospheric radiation levels as determined by detachable chambers was noted. This increase was confirmed by the air filter results, and seemed to be weighted toward the end of the month. This may be due to increased operations schedules. A decided increase in the number of active particles in the atmosphere, as determined by radioautographs of air filters, was noted in the week ending September 16, 1949. These particles were mostly of low activity (1 to 5 μμc) but were quite widespread, being found in Richland, Klamath Falls, Spokane, and Great Falls. The results for the week ending Sept. 23, 1949, in general, confirm the widespread distribution.

Decay curves and analyses are being run to confirm a possible source.

Geology

The activity in the water from wells 361-B-1 and 361-B-9 averaged about the same as last month, which means that the activity level did not follow the curves of decreasing activity which were previously established. More samples are being obtained to improve the statistical value of the results.

The activity levels in wells 224-T-4 and 231-2 is higher than previously reported, but the results are not statistically significant. More samples are being taken to check the results.

Several samples from well 46-42.5 located near the 200-East Area effluent swamp averaged about 40 micromicrocuries/liter, but the position of this well with respect to the direction of motion of the ground water suggests that the results may be in error.

An earthquake tremor was recorded by 6 of 15 water level recorders on Sept. 11, at about 5:00 PM Daylight Saving Time. The maximum fluctuation of the water table was 0.03 feet, which is about the same as was recorded for the two tremors recorded on August 21 and August 23, 1949.

Meteorology

The weather for September 1949 was featured by above normal temperatures and a storm midway in the month which ended our long drought.

During the storm of September 14 and 15, precipitation totaling 0.18 inch fell

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over a 48-hour period. The total precipitation for the month was 0.23 inch, and the normal for September is 0.34 inch. Precipitation since January 1, this year, now totals 2.39 inches. The normal for January 1 to September 30 inclusive is 3.84 inches, which leaves this area 1.45 inches below normal.

Temperatures during the month averaged 68.1 degrees. The normal for September is 64.3 degrees. The above normal average was a result of two warm periods; one at the first of the month and the other at the end of the month. On Sept. 1, a maximum temperature of 100 degrees was recorded for the first time in five years of records at the 622 Building. Also, a minimum temperature of 70 degrees was recorded Sept. 2, which is the highest minimum in five years of 622 building records. The lowest minimum temperature for the month was 38 degrees, on the 12th.

No high winds or duststorms occurred during the month. Wind velocities averaged just slightly below normal.

Forecasts	Number	Percent Reliability
8-hr. Production	90	86.6
24-hr. General	60	83.4
Special	5	100.0

Bioassay

Three hundred and sixty-two samples were analyzed for plutonium during the month. The blank samples and samples averaged 0.06 and 0.04 d/m, with an average yield of 92% on the spiked samples. There were eight samples slightly greater than the resampling limit of 0.33 d/m.

Six resamples from previous months have given less than 0.33 d/m.

One hundred and thirty-three urine samples were analyzed for uranium on the fluorophotometer. The maximum individual result was 33 μg/liter.

Methods Development

The development of a procedure for analyzing samples for traces of plutonium by electroplating is being held up by the lack of a suitable method of transferring the plutonium from the TTA-benzene phase to the plating bath. Difficulties have occurred both with absorption on glass and interference from ions in the solution.

A preliminary study of the buildup of background tracks on the alpha film indicates that about 0.3 - 1.0 tracks/mm^2 per week are added after treatment with H_2O_2. A series of low-level sources was prepared, and is being exposed to alpha film in an attempt to determine a limit of detection for the procedure.

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Health Instrument Divisions

A study of the absorption of radiostrontium on dry, saturated, and drained soils indicated little difference in the distances traveled. The effect of magnesium and calcium carbonate on the rate of washing of plutonium from soil is being studied on columns containing about 10^8 d/m of plutonium. The smaller grain sizes of soil were shown to absorb more activity and qualitatively to hold up the flow of activity more than the larger grain sizes.

Seven aliquots of the same water were analyzed for radon content by the chemical method and the ion chamber method. The standard deviations were 1.9% for the ion chamber, and 4.5% for the chemical method. The chemical method gave 75% yield based on the ion chamber results, but more calibrations of the chamber are needed. A series of ten samples from the Benton City region gave values of 100 - 500 dis/min/liter of radon.

Diffusion experiments with a mock waste solution indicated mixing within a few hours in a water column. Similar experiments in a soil column indicated little mixing after 72 hours.

Discouraging results in the measurement of tritium by counting active acetylene in a proportional counter have been obtained. One sample mixed with methane gave positive results but could not be duplicated.

Methods Control

Difficulties with the mica window counters are continuing with alcohol-argon tubes showing shifting sensitivities with time. Considerable lost time was encountered with the low background alpha counters presumably due to fluctuations in the regulated voltage.

The number of analyses performed this month were:

Laboratory	Number
Vegetation	569
Water	820
Solids	134
Fluorophotometer	588
Miscellaneous	8
Special	131
Total	2250

Counting Room	
Beta measurements	4232
Alpha measurements	2878
Control points	1650
Decay curve points	356
Total	9116

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Health Instrument Divisions

Physics

Work is continuing on the extrapolation chamber with most of the extraneous effects being eliminated. A special extrapolation chamber was built when it became necessary to have a reliable measure of the gamma dose-rate at the surface of metallic plutonium. The Instrument Division personnel deserve considerable credit for the rapid and orderly manner in which the chamber was constructed.

One of the experimental recoil counters was used to complete a survey of neutrons sources in the 234-5 process. A summary of this survey is given in Document #HW-14440. A prototype for a permanently filled proportional counter was made of brass instead of aluminum as was used in the first models. Its characteristics are markedly different from causes which have not as yet been determined.

The large Chang and Eng chambers have been put into operating condition with changes which should increase the accuracy of measurement. Saturation curves have been obtained for radium gamma fields, and will be rechecked with Co^{60} gamma radiation.

A series of nesting Lucite cylinders have been built for use with BF_3 proportional counters for the purpose of trying to determine the distribution of energy in various sources of slow neutron. BF_3 counters filled with enriched boron have been tested and were found to be about 5 times as sensitive as those with normal boron.

A histogram of the number vs. energy of the neutrons from a laboratory Po-Be source has been completed. The energies were determined by measuring the lengths of recoil proton tracks in special fine grain photographic emulsions. The data fail to substantiate the presence of a "sub peak" between 7 and 8 MEV as reported by Richards, MDDC-1504, and Perlman,et al, MDDC-39. The investigation is being continued in an attempt to determine the cause of the discrepancy.

Industrial Hygiene

The study of atmospheric contamination of the 314 Building has been continued, with the portion concerning particle size being nearly completed. The second set of these samples for electron micrographs has been shipped to Rochester. Recent correspondence with the Rochester group indicates that they have completed their work on our first set of samples, and the micrographs are being sent to us. With the particle size investigation being nearly completed, it has been possible to commence air sampling of the workers' exposures. In connection with this study in the 314 Building, several samples of stack gas effluent were collected from which photomicrographs were made. These will be used in conjunction with the electron micrographs of the same gas streams.

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Health Instrument Divisions

The study of natural atmospheric contamination has continued with additional samples being collected by the impingement method for dust counting purposes. An attempt will be made to correlate this information with gravimetric analyses being obtained by filter paper sampling.

As a result of the routine atmospheric sampling with filter paper at 292-U Building, a considerable backlog of collected samples has been accumulated. As the usual sampling procedure has resulted in about 2 samples per week, this month's samples will be radioautographed by the Methods group to determine if the relatively short sampling periods will demonstrate more clearly the peak in the incidence of "specks" during September.

Requests were received almost simultaneously from H.I. in 100-F and the Medical Division to investigate factors involved in an apparent exposure of an employee to solvent vapors. The case reportedly resulted from the person wearing a cartridge-type respirator, which, in some unknown manner, had some solvent present in the cannister. Analyses will be made on the cannister to determine what concentration would be experienced by a person wearing this respirator under these conditions.

Instrument Development

Ionization current in Neut chambers with argon, hydrogen, carbon dioxide, helium, and methan, at pressures between 0 and 50 psi gauge have been measured for gamma, slow and fast neutron irradiation. Upon exposure to X-radiation of various peak kilovoltages, a firm basis for choosing Neut gases will be established. The data collected so far indicate that the methane-carbon dioxide combination may be satisfactory to permit operation of the instrument in gamma fields of less than 0.5 MEV.

Bias curves run with a crystal of anthracene, obtained from Schenectady, showed better characteristics than those obtained with crystals grown locally. However, no plateau worthy of mention has yet been found. The beta energy dependence data indicate that optimum operating conditions vary with beta energy. If this is true, anthracene will not be a good crystal for dose measurements.

Six Glassmike storage condensers, for use with the portable Poppies, made with fluorothene dielectric were obtained and tested. The initial charge, performed with a 60 megohm series resistor, caused breakdown in one condenser at 3600 volts. The other five lost less than 100 volts in 16 hours and less than 400 volts over a week-end. These condensers are much better than any obtained previously. Satisfactory operation can be expected when they are available in sufficient quantity. The vastly superior performance of this condenser suggests a unit of similar construction to replace the 0.01 mfd operating condenser. With this combination, it would not be unreasonable to expect 24 hours normal operation per charge.

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Health Instrument Divisions

The pressing need for a soft beta survey instrument for monitoring flanges, etc. led to concentrating on this problem rather than pulse analyzer work. In its present form the instrument uses a pencil probe fitted with a gas manifold through which Argon-5% Carbon Dioxide is fed to make up for diffusion and leakage losses. An NIC scaler was modified as needed and a preamplifier built. Operation seems satisfactory although no plateau is in evidence. The instrument will be placed in field service.

The problem of devising instrumentation for monitoring sheep thyroids was undertaken for Biology Division. The instrument must be rugged and easily fixed to the sheep in a manner which yields reproducible results. The range of counting rates will be background to about 10^6 c/m. Thus far, data with glass tubes indicate that four counters mounted in a collar will give reproducible results within statistical limits when the collar is removed and replaced. A source of gamma counters sensitive at low energies is being sought and high speed quench circuits are being investigated.

The cause of extracameral ionization effects in T.P. Probes seems to be masses of exposed metal in the electrometer circuit. Several of these have been coated heavily with ceresin wax, reducing the effect to a satisfactory degree.

Calibrations

The routine calibrations were:

RADIUM CALIBRATIONS	Number of Calibrations August	September
Fixed Instruments		
Gamma	358	326
Portable Instruments:		
Alpha	212	218
Beta	497	521
Gamma (radium)	1,122	1,077
X-ray Scanning	42	37
Neutron	5	14
Total	1,878	1,867
Personnel Meters:		
Beta	105	945
Gamma (radium)	8,280	10,139
X-ray	4,643	7,355
Neutron	--	--
Total	13,028	18,439
GRAND TOTAL	14,906	20,632

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Health Instrument Divisions

BIOLOGY DIVISION

Aquatic Biology

1. Effect of Pile Effluent on Aquatic Life

Chinook salmon eggs will be available next month and the regular monitoring can then be resumed. Meanwhile, studies on young trout held in 5% area effluent and 2 p.p.m. KI are being continued. Mortality in all groups was practically nil during the month except for the complete loss of one of the groups held in 5% area effluent water. This group was destroyed when its river water supply became clogged with midge (Chironomus) larvae and their tubes. Fortunately, this loss did not seriously disrupt the experiment and the group was re-established.

Of the initial activity in trout being held in 5% area effluent and eating food containing algae from the 107 retention basin, over 50% is longer-lived; while in the trout in similar water but eating uncontaminated food less than 20% of the initial activity is longer-lived. The fish held in the dilute effluent water or KI are smaller in size than the controls.

2. Biological Chains

The activity of trout feeding upon food containing 10% 107 basin algae declined slightly during the month. This is very likely due to cooler water temperatures slowing the metabolic rate of the fish. Loss of activity from shiners which had once been feeding upon active snails appears to be not appreciably faster than by decay alone. A large number of juvenile carp have been collected in the field and brought to the laboratory to be used in a new series of food chain studies to start this Fall.

3. Radiobiological Survey

The activity of the aquatic life in the river as represented by the Hanford Station appears to have reached a point of inflection. While the activity of some lower forms such as the bottom algae, plankton, and midge larvae, has continued to increase, in other forms such as the caddis fly and juvenile fish it has remained about the same, and in the large fish it has decreased slightly.

In the vicinity of McNary Dam, the activity of the bottom algae is about 1/20 that at Hanford, the activity of the aquatic insect larvae is about 1/7 that at Hanford, and the activity of the juvenile fish is about 1/3 that at Hanford.

Collecting conditions were most favorable during the month, and a record number of samples were analyzed for beta activity. Plankton work was resumed with the addition of a laboratorian to make the routine analyses.

[redacted]

Health Instrument Divisions

ZOOLOGY GROUP

1. Toxicology of I^{131}

Daily feedings of 0.5 μc of I^{131} to each of three Hampshire ewes have resulted in equilibrium thyroid activities of about 2 to 3 μc in the gland. That concentration will produce about 5 rep/day to thyroid tissue. This concentration in the thyroid, higher than usually reported for laboratory animals, is probably attributable to the low inert iodine content of the ration. That condition, however, will allow greater latitude in defining levels of irradiation that may be planned for sheep at the Experimental Animal Farm.

The Animal Farm buildings are about 90% complete; sheep and feed have been purchased, and it is planned to receive the animals by November 1. Experimental feeding will begin several months later.

2. Biological Monitoring

Sampling of fowl and mammals has continued with no unusual event. Plans to make a rather broad survey of radioactivity in wildlife from both on and off the project are being made. Sampling will be concurrent with the regular hunting season.

BOTANY GROUP

1. Separations Area Control Plots

Russian thistles growing in the 200-E, R3, Danger Zone area showed a surface reading of 300 mrep/hr. These plants gave no morphological or growth-habit evidence of any change due to the activity present. The highest activity was to be found in the floral parts.

In the 200-E Area, Experimental Plots, potatoe (tubers) gave an average reading of less than 0.002 beta μc/kg. Tomatoe (fruit) gave a reading of less than 0.001 beta μc/kg.

2. Agricultural Field Station

Thirty soil samples from the usual stations gave an average reading of 0.019 beta μc/kg within a range of 0.009 to 0.037 beta μc/kg.

Samples of river water from the inlet of the irrigation system gave an average of 4×10^{-5} beta μc/liter.

3. Use of Algae for Removal of Radioactivity from Pile Effluent

A column containing algae of various species removed 98% of the activity present in a sample of the effluent water from 107 basin.

Samples of duck weed (Lemna minor L.) have shown the ability to accumulate 188 μc/kg. from the effluent water of the 107 basin.

[redacted]

Health Instrument Divisions

BIOCHEMISTRY GROUP

1. Collection and Analysis of Active Particles

Chemical analyses of the active particles collected by electrostatic precipitation have been started. Preliminary analyses for the isotopes having long half-lives, such as Ru, Sr, Ce, Cs, Y, Tc, Re, and the Rare Earths have been completed. Analyses for the isotopes having short half-lives will be done on fresh samples immediately after their collection.

2. Deposition in Lungs of Active Particles

Activity is being resumed on this project at present. It was discontinued during the recent plutonium ingestion experiment due to inadequate facilities and personnel to handle both projects at the same time. Our next exposure will be made within the next two weeks.

3. Pathology of Active Particles

Work on the development of techniques using liquid emulsion on frozen sections of tissue for radioautographs is near completion. The first application of these techniques will be on the lung tissue obtained from the animals exposed in Project #2.

4. Analysis of Plutonium in Animal Tissue

Analyses of the carcasses from the plutonium ingestion experiment were completed. The results are presented in the report on that project. Work is being continued in an effort to obtain more consistent results from such analyses.

5. Gastro-Intestinal Absorption of Plutonium

After the completion of the recent preliminary experiment on this project, plans were begun for several basic studies to be made before the next large-scale experiment of this nature is undertaken. These studies are to begin immediately, and materials have been ordered for this purpose.

GENERAL ACCOUNTING DIVISION

SEPTEMBER 1949

GENERAL

The Atomic Energy Commission authorized the Company by letter dated September 26, 1949 to announce to employees the revised Group Disability Insurance Plan. The letter indicates that reimbursement authorization covering the revised plan will be issued in the near future.

Considerable time has been spent in securing interpretations of the Agreement Between Hanford Atomic Metal Trades Council and General Electric with respect to payment practices under various circumstances. During the past four months, meetings have been held with interested individuals for discussion of the provisions of the Agreement. Several letters have been written requesting clarification of certain provisions of the Agreement. Although several of these questions are still unanswered, work is progressing satisfactorily on the calculation of adjusted salary payments retroactive to April 11, 1949.

Plant Accounting Statements were prepared in September showing balances in Plant Accounts as of June 30, 1949 which reflected closing entry prepared in August covering evaluation of plant assets. Balances as of June 30, 1949 may be summarized as follows:

(Amounts in Thousands)	Cost	Depreciation Reserve	Net Book Value
Classified Facilities in Service			
Improvements to Land	$ 21 803	$ 5 896	$ 15 907
Buildings and Other Structures	142 513	23 624	118 889
Equipment	179 956	65 964	113 992
Unclassified Facilities	55 089	488	54 601
Property Held for Future Use	5 111	460	4 651
Property Not Used or Useful	12 561	12 561	- 0 -
Major Construction Program Facilities	48 238	5 067	43 171
Construction Work in Progress	113 194	- 0 -	113 194
Retirement Work in Progress	18	- 0 -	18
Total	$ 578 483	$ 114 060	$ 464 423

Advances from AEC were reduced from $5,500,000 at the beginning of the month to $4,500,000 at the month end. Items comprising the balance advanced by AEC are:

Cash in Bank - Contract Accounts	$ 3,870,130
Salary Accounts	55,000
Travel Advance Account	50,000
Unliquidated portion of Advances prior to June 1, 1949	40,012
Advances to Subcontractors	300,193
Accounts Receivable - AEC	87,482
Cash in Transit	97,183
Total	$ 4,500,000

General Accounting Division

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on Payroll at beginning of month	7 532	1 621	5 911
Additions and transfers in	158	6	152
Removals and transfers out	(175)	(25)	(150)
Transfers from Weekly to Monthly Payroll	--	11	(11)
Transfers from Monthly to Weekly Payroll	--	(7)	7
Employees on Payroll at end of month	7 515	1 606	5 909

Employees on Payroll at end of month	August	September
Manufacturing	3 152	3 226
Design and Construction	643	595
Community	759	738
Other	2 978	2 956
Total	7 532	7 515

Overtime Payments		
Weekly Paid Employees	$22 940	$42 056
Monthly Paid Employees	3 203	3 043
Total	$26 143	$45 099

Number of changes in Salary Rates and Job Classifications	512 (1)	586

Gross Amount of Payroll		
Manufacturing	$1 033 843	$1 289 278
Design and Construction	222 611	238 821
Community	224 250	264 877
Other	898 415	1 073 141
Total	$2 379 119 (2)	$2 866 117 (3)

Annual Going Rate of Payroll		
Manufacturing	$14 192 662	$14 306 232
Design and Construction	2 793 949	2 548 608
Community	2 886 126	2 847 785
Other	11 731 205	11 770 303
Total	$31 603 942	$31 472 928

Average Salary Rate Per Hour (4)	August			September		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$2.055	$2.614	$2.145	$2.011	$2.617	$2.109
Design and Construction	1.572	2.657	2.024	1.570	2.615	2.002
Community	1.707	2.295	1.820	1.725	2.307	1.841
Other	1.628	2.508	1.826	1.630	2.507	1.827
Total	$1.821	$2.547	$1.975	$1.808	$2.541	$1.962

(1) In addition there were approximately 2,500 changes as a result of the Union Agreement
(2) Includes four weeks in case of weekly paid employees
(3) Includes five weeks in case of weekly paid employees
(4) Includes shift differential, isolation pay, and du Pont employees on loan to General Electric Company. Excludes overtime premiums, commissions, Suggestion Awards, etc.

General Accounting Division

Employee Plans

Pension Plan

	August	September
Number participating at beginning of month	6 488	6 495
New participants and transfers in	54	78
Removals and transfers out	(47)	(57)
Number participating at end of month	6 495	6 516
% of eligible employees participating	91.8%	91.9%

Employees Retired	September	Total to Date
Number	6	98
Aggregate Annual Pensions Including Supplemental Payments	$1 819	$23 354*
Amounts contributed by employees retired	$1 018	$ 8 337

*Amount before commutation of pensions in those cases of employees who received lump sum settlement.

Group Life Insurance

	August	September
Number participating at beginning of month	5 848	5 819
New participants and transfers in	65	85
Cancellations	(52)	(7)
Removals and transfers out	(42)	(54)
Number participating at end of month	5 819	5 843
% of eligible employees participating	78.5%	79.2%

Insurance Claims

	September	Total to Date
Number of deaths	1	31
Amount of insurance	$5 600	$153 162
Premiums paid by employees who died	$ 151	$ 2 071

Group Disability Insurance - Personal

	August	September
Number participating at beginning of month	6 487	6 503
New participants and transfers in	92	59
Cancellations	(6)	(8)
Removals and transfers out	(70)	(87)
Number participating at end of month	6 503	6 467
% of eligible employees participating	88.9%	89.1%

Group Disability Insurance - Dependent

Number participating at beginning of month	4 017	4 045
Additions and transfers in	58	51
Cancellations	(8)	(8)
Removals and transfers out	(22)	(21)
Number participating at end of month	4 045	4 067

Employee Plans (continued)

Group Disability Claims	August	September
Number of claims paid by insurance company:		
Employee Benefits	110	75
Daily Hospital Expense Benefits	80	79
Special Hospital Services	79	82
Surgical Operations Benefits	70	65
Dependent Benefits Paid		
Daily Hospital Expense Benefits	107	108
Special Hospital Services	102	109
Amount of claims paid by insurance company:		
Employee Benefits	$11 552	$10 392
Dependent Benefits	3 452	3 405
Total	$15 004	$13 797

Group Disability Insurance - Premiums		
Personal - Employee Portion	$11 731	$10 674
- Company Portion	6 132	7 230
- Total	$17 863	$17 904
Dependent- Employee Portion	$ 3 847	$ 3 509
- Company Portion	187	554
- Total	$ 4 034	$ 4 063
Grand Total	$21 897	$21 967

Vacation Plan

Number of employees granted permission to defer one week of their 1949-vacation to 1950.	September
Manufacturing	11
Technical	10
General Accounting	1
Total	22

Annuity Certificates (For du Pont Service)	September	Total to Date
Number issued	0	65

U. S. Savings Bonds	Mfg.	D&C	Comm'y	Other	Total
Number participating at beginning of month	1 788	307	357	1 507	3 959
New Authorizations	31	3	2	29	65
Voluntary Cancellations	(31)	(4)	(7)	(32)	(74)
Removals and Transfers Out	(7)	(8)	(5)	(15)	(35)
Transfers In	3	-	1	2	6
Number participating at month end	1 784	298	348	1 491	3 921
% participating	55.3%	50.5%	47.2%	50.4%	52.2%
Bonds issued					
Maturity Value	$117 325	$19 200	$21 075	$91 750	$249 350
Number	2 066	333	374	1 602	4 375
Refunds issued	35	13	10	46	104
Revisions in authorizations	31	4	6	31	72
Annual going rate of deductions					
New Plan	$767 306	$117 793	$130 865	$597 256	$1 613 220
Old Plan	222 480	37 302	35 325	153 559	448 666
Total	$989 786	$155 095	$166 190	$750 815	$2 061 886

Employee Plans (continued)

Suggestion Awards	September	Total to Date
Number of Awards	10	405
Total Amount of Awards	$535	$5 310

Employee Sales Plan

	September		
	Total	Major Appliances	Traffic Appliances
Certificates Issued	277	71	206
Certificates Voided	4	2	2

Salary Checks Deposited	August	September
Monthly	871	868
Weekly	830	847
Total	1 701	1 715

Special Absence Allowance Requests		
Number submitted to Pension Board	11	7

Absenteeism (Weekly Paid Employees)	1948	1949
January 1 to September 25	2.18%	2.31%

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING	August	September
Number of Employees		
On Payroll at beginning of month	161	173
Removals and transfers out	(7)	(6)
Additions and transfers in	19	12
Number at end of month	173	179
(Increase in personnel during September due to calculation of adjustment retroactive to April 11, 1949 under the Union Agreement)		
Net increase (or decrease) during month	12	6
% of terminations and transfers out	4.3%	3.5%
% of absenteeism	3.25%	2.86%

Changes by division in number of Accounting Division employees during September were as follows:

General Accounting - General: No Change

Accounts Payable: Decrease of one employee

One employee retired effective September 1, 1949
(Last day worked August 31, 1949)

Cost: Increase of one employee

One new hire

General Accounts: No Change

Plant Accounting: No Change

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Weekly Payroll: Increase of six employees

Nine new hires
One transfer from Construction Accounting
One removal due to Illness
Three terminations

Monthly Payroll: No Change

One new hire
One termination

Special Assignments: No Change

Injuries	August	September
Major	0	0
Sub-major	0	0
Minor	1	1

Number of Accounting Division employees as of September 30, 1949, were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General Accounting - General	3	3	6
Accounts Payable	16	1	17
Cost	10	1	11
General Accounts	15	1	16
Plant Accounting	22	3	25
Weekly Payroll	78	5	83
Monthly Payroll	15	1	16
Special Assignments	1	4	5
Total	160	19	179

Non-Exempt employees may be summarized as follows:

	Number as of	
Classification	8-31-49	9-30-49
Accounting A	1	1
Accounting B	2	2
Accounting D	5	5
Business Graduate	1	2
Clerical Working Leader	6	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	28
General Clerk B	39	47
General Clerk C	20	19
General Clerk D	15	13
General Clerk E	2	0
Office Machine Operator B	16	16
Secretary B	1	1
Steno-Typist A	2	2
Steno-Typist B	4	4
Steno-Typist C	1	3
Steno-Typist D	4	3
Total	154	160

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Open employment requests as of September 30, 1949, were as follows:

General Clerk B	7
Business Graduate	2
Office Machine Operator B	3
	12

General Accounting Divisions

	August	September
Accounts Payable *		
Balance at Beginning of Month	$ 44 582	$ 51 750
Vouchers Entered	550 079	756 565
Cash Disbursements	546 564 Dr.	740 729 Dr.
Cash Receipts	3 656	3 387
Miscellaneous Credits	3 Dr.	-0-
Balance at end of month	$ 51 750	$ 70 973
Number of Vouchers Entered	1 311	1 336
Number of Checks Issued	972	1 049
Number of Freight Bills Paid	146	146
Amount of Freight Bills Paid	$ 2 383	$ 2 008
Number of Purchase Orders Received	868	881
Value of Purchase Orders Received	$ 163 819	$ 141 055
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	$ 272 200	$ 50 000
Submitted During the Month	484 020	90 734
Sub Total	756 220	140 734
Reimbursements During the Month	706 220	53 252
Not Reimbursed at End of Month	$ 50 000	$ 87 482
Public Vouchers (1034) Submitted to AEC		
Not Reimbursed at Beginning of Month	42	1
Submitted During the Month	31	7
Sub Total	73	8
Reimbursements During the Month	72	6
Not Reimbursed at End of Month	1	2
Pre-Audit Vouchers (1035) Submitted to AEC Not Yet Approved		
Community	$ -0-	$ -0-
Design & Construction	1 996	3 690
General	-0-	-0-
Manufacturing	2 687	-0-
Sub Total	$ 4 683	$ 3 690
Not Submitted to AEC on Pre-Audit Vouchers		
Community	$ 89	$ 89
Design & Construction	18 825	16 883
General	4 151	3 461
Manufacturing	15 956	15 889
Sub Total	$ 39 021	$ 36 322
Total Unbilled Items	$ 43 704	$ 40 012

* General Divisions Only.

General Accounting Divisions

	August	September
Cash Disbursements		
Community	$ 40 359	$ 28 379
Design & Construction	2 029 190	2 056 765
General	2 350 498	2 915 527
Manufacturing	515 253	426 752
Total	$4 935 300	$5 427 423
Material and Freight	$ 787 308	$ 684 626
Lump Sum and Unit Price Subcontracts	130 934	135 229
CPFF Subcontracts		
Labor	1 188 752	1 398 178
Others	548 543	371 944
Accounts Receivable Refunds	5 121	15 657
Miscellaneous	470 711	646 964
Payrolls (net)	1 662 949	2 013 311
U. S. Savings Bonds	140 982	161 514
Total	$4 935 300	$5 427 423
Cash Receipts		
Community	$ 86 844	$ 95 509
Design & Construction	167 279	173 149
General	3 147 220	4 588 507
Manufacturing	14 137	12 239
Total	$3 415 480	$4 869 404
Detail of Cash Receipts		
Hospital	$ 56 188	$ 52 106
Scrap Sales	13 242	14 289
Miscellaneous Accounts Receivable	2 420	2 729
Educational Program	717	1 359
Employee Sales	874	865
Refunds from Vendors	14 358	6 381
Cash in Transit	72 074	398 148
Rents	115 674	116 125
Telephone	8 204	8 337
Income From Special Funds	-0-	56 566
Bus Fares	11 783	10 064
Sales of Plant & Equipment	268	8 675
Refund of Advances to Subcontractors	100 000	75 000
Equipment Rental	17 713	57 474
All Other	1 965	11 286
Advances to G. E.	3 000 000	4 000 000
Accounts Receivable A.E.C.	-0-	50 000
	$3 415 480	$4 869 404

General Accounting Divisions

	August	September
Number of Checks Written		
Community	221	246
Design & Construction	311	625
General	972	1 049
Manufacturing	502	452
Total	2 006	2 372
Bank Balances At End of Month		
Chemical Bank & Trust Company		
Contract Account	$2 025 767	$1 676 375
Seattle First National Bank-Richland		
Contract Account	2 002 381	1 848 886
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
U. S. Savings Bond Account	28 271	185 297
Seattle First National Bank-Seattle		
Salary Account No. 3	5 000	5 000
Escrow Account	59 806	59 806
Travel Advance Account	27 775	28 983
	$4 199 000	$3 854 347
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	$ 6 974	8 058
Cash Advance balance outstanding over one month*	728	-0-
Traveling and Living Expenses:		
Paid Employees	14 208	14 919
Billed to Government	15 636	14 743
Balance in Variation Account at end of month	904 Dr.	1 080 Dr.
Hospital Accounting		
Accounts Receivable		
Balance at Beginning of Month	$ 111 215	$ 126 941
Invoices Issued	90 191	83 694
Refunds	808	951
Cash Receipts	(55 931)	(52 017)
Payroll Deductions	(17 598)	(25 002)
Bad Debts Written Off	(1 744)	(619)
Balance at End of Month	$ 126 941	$ 133 948

* General Divisions Only.

General Accounting Divisions

ACCOUNTS PAYABLE

The number of Accounts Payable vouchers entered in September increased slightly over August. Total entered was 1,336 compared to 1,311 in August. This increase coincides with the number of new Purchase Orders issued which increased from 868 amounting to $163,819 in August to 881 amounting to $141,055 in September.

Total vouchers on hand at the end of September requiring additional supporting data before they could be considered complete was 748, compared to 763 at the end of August.

The inventory of Purchase Orders not completed applying to General Divisions as of September 30 increased from 789 amounting to $209,736 (unpaid balance) in August to 1,062 amounting to $223,849 in September.

Accounts Payable general ledger balance the end of September was $70,973.43 compared to $51,750.33 in August. This increase is in proportion to the increase in the amount of vouchers booked which was $756,565 in September compared to $550,079 in August. Details of the Accounts Payable balance, by months, is as follows:

October 1948	$ 30.00 Dr.
February 1949	407.85 Dr.
March 1949	30.03 Dr.
April 1949	25.00 Dr.
May 1949	118.88 Dr.
June 1949	56.50 Cr.
July 1949	12;931.42 Cr.
August 1949	1;384.44 Dr.
September 1949	59,981.71 Cr.
Total	$70,973.43 Cr.

The number of vouchers more than 60 days old increased slightly over August. There were 41 on hand at the end of September, amounting to $24,416.94 compared to 20 at the end of August amounting to $5,265.00.

Work is progressing on the audit of old Accounts Payable purchase order files. The decrease in personnel in this office during the last two months has resulted in slowing up of this audit. Approximately 12,000 files remain to be audited.

COST

General Division Operating reports for the month of August were issued on September 15, 1949.

Technical Divisions began segregating costs by Projects on Research and Development work on September 1, 1949. New methods of ledger posting were initiated by the Cost Division in order to maintain a complete and accurate breakdown of these charges. Reports issued on above projects will be in accord with both Accounting and Technical Divisions requirements.

General Accounting Divisions

COST (Continued)

Continued studies were made on Purchasing and Stores Divisions and a new basis for liquidating their costs was established. New studies were also made for General Accounting and Employee & Community Relations Divisions.

Liquidation procedures were reviewed resulting in minor changes in the liquidation forms used for assessments to other divisions.

GENERAL ACCOUNTS

General Ledger trial balances were received from all Accounting Divisions by September 19. Hanford Works Financial Statements were completed on September 20 and Consolidated Financial Statements were completed on September 23.

Considerable additional work was required during the month of September for August Statements both on General Ledger and on Financial Statements. All General Ledger Accounts were reviewed and provision was made for establishing the new Plant Accounts and Depreciation Reserves.

In accordance with A.E.C. Directive, all costs incurred prior to June 30, 1949 were transferred from our ledgers. This was done in August and all figures representing At Start of Fiscal Year and July 31 Balances were recast. Plant Accounts and Depreciation reserves were also booked in August effective June 30, 1949 and a similar recast made. Financial Statements for K.A.P.L. were recast to correspond with Hanford Practice. This recast was subsequently discussed with K.A.P.L. Accountant, who will submit future reports on this basis.

Advances from A.E.C. were reduced from $5,500,000 August 31, 1949 to $4,500,000 at September 30, 1949. Included in this reduction was the activity recorded on Advances received Prior to June 1, 1949. This portion now reflects an open balance of $40,012 which was a reduction of $3,692 during September.

The General Division is handling through non-payment Public Vouchers (Form 1034) the liquidation of Advances to Subcontractors. This is a procedure change over previous months when cash reimbursement was requested.

Original copies of June APV's were transferred to the Government as per arrangements agreed upon with A.E.C. and G.A.O. representatives. This is the first transfer made under the new reimbursement procedure and will now be made monthly.

MEDICAL ACCOUNTING

The accounts receivable balance of $133,948 is $7,006 greater than the August balance of $126,942. September sales in the amount of $83,693 decreased $6,498 from August sales of $90,191. In-Patient sales decreased approximately $5,000 accounting for the major portion of the decrease.

Beginning in September Industrial is being charged full fee schedule rates on Laboratory and X-Ray work performed for them instead of 66 2/3% of fee schedule rate as was done in the past.

MEDICAL ACCOUNTING (Continued)

Also beginning this month the 35% of Richland Medical salaries which were being charged to Industrial on the following basis:

20% to Operations Industrial
15% to Construction Industrial

is being changed to:

26% Operations Industrial
9% to Construction Industrial

The reason for this is the reduction in number of Construction personnel on the project. In the future this percentage will vary from month to month according to number of Construction personnel on the project.

PLANT ACCOUNTING

All details pertaining to Uninstalled Equipment (formerly Class "B" Property) have been transferred to the new Property Record forms. Although a number of the inventory books covering Installed Facilities have been received from the Atomic Energy Commission, the transfer of this information to the new forms has not yet been started. The task of transferring all the required information to these new forms will be rather difficult and will be time consuming as there are 40 volumes approximately the size of a standard loose leaf binder.

All July and August charges to Plant were placed in Property in Service - Unclassified Facilities. Classification of these charges, involving a considerable number of man-hours, is now in progress and should be completed shortly. Exception to this is a July entry transferring over $1,000,000 worth of major equipment items from Design and Construction to the Operating Divisions. This particular transaction is being reviewed by Design and Construction and entry will be made in October, which will alter the valuations in almost every instance. In order to allow ample time for analyzing September entries to Plant Accounts, all September entries will also be cleared through Unclassified Facilities.

The original appraisal entry charged into Unclassified Facilities, approximately $55,000,000, representing projects transferred to completed plant which was not unitized by the appraisal consultants. The Design group of the Design and Construction Division is currently engaged in unitizing these projects and they are being properly classified as necessary information is being made available.

SPECIAL ASSIGNMENTS

Report of review of SF Accountability in 300 Area was submitted. Meeting for the purpose of discussing this report was held with G. E. accountability and production personnel and AEC personnel. During the month recommendations contained in the report have been discussed in detail with production personnel.

Investigation of voucher systems for application to Accounts Payable and Payable items was begun. At month end a proposed voucher system had been designed and this proposed system will be presented to the Division Accountants for their review and comments.

General Accounting Divisions

PAYROLLS

During the Month of September there were 175 Removals from Payroll of which 5 were removals due to lack of work, and there were 158 Additions to the Payroll, including transfers from other units of the Company, resulting in a net decrease of 17 employees on the Payroll.

* * * * * * * * *

Under the General Electric Employees Savings and Stock Bonus Plan, 160 participating employees withdrew from the Plan 756 U. S. Savings Bonds having a Maturity Value of $38,200. U. S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in August were delivered to employees on September 23, 1949. There were 745 U. S. Savings Bonds and 3,127 Custody Receipts distributed to employees.

* * * * * * * * *

There were 24 time cards received late in the Weekly Payroll Division during the Month of September as follows:

Week Ended	Number
9/4/49	0
9/11/49	0
9/18/49	4
9/25/49	20
Total	24

The above represents an improvement over previous months, however, additional time is required in Payroll to process late time cards even though the number of late cards may be small.

* * * * * * * * *

The Addressograph Section of Weekly Payroll Division addressographed approximately 49,800 items for other divisions in addition to regular routine addressograph work.

* * * * * * * * *

A schedule of employees reaching retirement age was furnished to Employee and Community Relations Division segregated as follows:

1. Employees who will have reached Optional Retirement age at December 31, 1949 - 155 employees

2. Employees who will reach Optional Retirement Age during 1950 - 56 employees

3. Employees who will reach Normal Retirement Age during 1950 - 32 employees

* * * * * * * * *

Reimbursement Authorizations were received during the month covering the following:

1. Revisions to approved employment policies and wage and salary schedules for non-exempt employees in classifications excluded from the Bargaining Unit as certified by the National Labor Relations Board.

PAYROLLS (CONT.)

2. Additional classifications, grades and starting and progression rates which were not included in Reimbursement Authorization No. 63 covering Bargaining Unit employees.

3. Deferment of one week of a two week vacation until the following year.

* * * * * * * *

Pending issuance of formal reimbursement authorization, the Atomic Energy Commission authorized the Company by letter dated September 26, 1949 to announce to employees the revised Group Disability Insurance Plan.

* * * * * * * *

Although several questions of interpretation of the Union Agreement are still unanswered, work is progressing satisfactorily on the calculation of payments retroactive to April 11, 1949 to employees in accordance with Agreement. Therefore, no further increase in personnel is anticipated to complete the work within the original estimated time.

* * * * * * * *

The five remaining Du Pont employees who were on loan to General Electric Company were removed from G. E. Payrolls during the Month of September.

* * * * * * * *

In connection with the Charles E. Wilson 50th Anniversary Program, group meetings are being conducted by Supervisors for the purpose of explaining the objectives of the program and soliciting full participation of all Payroll Division employees.

A survey is being made of all paper work, reports and routines within the Payroll Division and a small savings has already been made in the preparation of the Force Report. The report, indicating the number of employees on the payroll, has been prepared each day. In the future the report will be prepared as of the end of each week.

Arrangements have been made to issue Sales Certificates to employees for the purchase of traffic appliances at the employees' place of work in the Areas and Pasco.

A system has been inaugurated in Payroll to stimulate interest and encourage employees to offer worthwhile suggestions concerning routines and practices within the Division.

An attendance program to reduce absenteeism has been inaugurated in the Payroll Division and an attendance "Contest" between the various sections has definitely created interest of employees in maintaining a good attendance record.

Delivery of Benefit Checks to employees under the Group Disability Insurance Plan has been expedited as a result of a new procedure installed in connection with filing of claims by employees, and the manner of forwarding checks to employees. Filing and processing of employees claims has been expedited by giving employees more detailed instructions for filling out the claim form and Benefit Checks are now forwarded directly to employees by the Payroll Division, whereas, they were formerly delivered through the Medical Division to employees.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - SEPTEMBER 1949

SUMMARY

There was one lost-time injury during the month which ended a run of 143 consecutive days without a disabling injury.

There were no losses from industrial fires during the month.

A Forms Control Engineer was appointed effective September 1, 1949. Initial results indicate that worthwhile savings can be realized from a complete review and study of all plant forms and associated procedures.

Effective September 28, 1949, Patrolmen were assigned to the 100-H Area Main Badge House to prepare for the change-over from Construction to Operations.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - SEPTEMBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	3	3 (a)		
Patrol and Security	580	584	4 (b)	
Safety and Fire Protection	150	151	1 (c)	
Office Services (General Services, Clerical Services, and Records Control)	254	242		12 (d)
TOTALS	987	980	5	12

NET DECREASE 7

(a) - Staff

1 - Secretary terminated.
1 - Secretary transferred from Safety and Fire.

(b) - Patrol and Security

4 - Rehired (Patrol)
2 - Transferred from Construction (Patrol)
1 - Returned from Leave of Absence (Patrol)
1 - Termination (Patrol)
1 - Retired (Patrol)
1 - Deceased (Patrol)

(c) - Safety and Fire Protection

1 - New Hire (Safety)
2 - Rehired (Fire Protection)
1 - Transferred to Staff (Safety)
1 - Termination (Fire Protection)

(d) - General Services

1 - Rehired
3 - Removed from roll due to Leave of Absence
2 - Transferred to Community Division
3 - Retired
2 - Terminations

Plant Security and Services Divisions

Clerical Services

10 - New Hires
9 - Terminations
5 - Transfers to other Divisions

Records Control Division

1 - Transferred from Construction Division.

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	15
Accumulated Exposure Hours since last Major Injury	599,285
Major Injury Frequency Rate (start-up to date)	0.851

	August	September	Year to Date
Major Injuries	0	1	9 *
Sub-Major Injuries	5	4	30
Minor Injuries	362	308	3212
Exposure Hours	1,264,899	1,176,944	11,635,224
Major Injury Frequency Rate	0.0	0.85	0.77
Major Injury Severity Rate	0.0	0.012	0.025
Minor Injury Frequency Rate	2.86	2.62	2.76

* Major Injury No. 63 3/4 retroactive to April 18, 1949.

Major Injury No. 63 3/4

April 18, 1949, at approximately 12:55 A.M., an employee of the Community Division, engaged at a dormitory received a fracture of the fourth lumbar vertebra when she slipped on the wet linoleum in the washroom of Dormitory W-21, striking her back against the upright supporting the booth door. The x-ray taken at that time disclosed no fracture. Following considerable treatment, further x-ray disclosed a fracture and on September 7, 1949 she was hospitalized. This accident is chargeable to the date of injury.

Major Injury No. 65

September 15, 1949, at approximately 9:35 A.M., an employee of the Electrical Division, working in the 1100 Area received electric shock and severe burns to the head and left hand when the back of his head came in contact with a live 6900 volt conductor.

Sub-Major Injury No. 154 1/2

September 8, 1949, at approximately 12:35 P.M., an employee of the 100-F Area Maintenance Minor Construction Group sustained a fracture of the right great toe when the end of a bench which he was assisting in moving slipped from his grasp and struck him. Employee was not wearing safety shoes.

Plant Security and Services Divisions

Sub-Major Injury No. 155

September 9, 1949, at approximately 12:40 A.M., an employee of the 200-West Area "S" Division sustained a contusion and fracture to the left ring finger when his finger was caught between the bottom rim of a drum and a fork blade. Two men were lifting the drum from the forks of a fork lift when the drum slipped and fell back onto the forks.

Sub-Major Injury No. 156

September 20, 1949, at approximately 1:00 P.M., an employee of the Technical Experimental Shop, 300 Area, received a fracture of the first metacarpel, right foot, when his instep was struck by a piece of falling angle iron.

Sub-Major Injury No. 157

September 27, 1949, at approximately 4:05 P.M., an employee of the "P" Division working in the 300 Area received a fracture to the left elbow when he slipped and fell on the shower room floor in 3707-A Building.

100 Areas Activities

Power and chain hoist and cable inspections have been resumed in the 100-B Area. All equipment was in a satisfactory condition.

Hazards involved in dismantling deareraters were investigated. A letter has been submitted to the Safety and Fire Protection Division office.

A set of operating rules and precautions were drawn up for use by the P-10 Group relative to operation of the monster.

A survey of safety meeting "Topics-of-the-Month" was made in the 100-D, 100-B and Riverland Areas. Results are being compiled for the Richland Safety Office.

A survey of replacement lens was made and a letter advising other Safety Engineers of stock was drawn up and distributed.

Power and chain hoist and cable inspections in the 100-D Area have been resumed by the Transportation Division. Defective equipment has either been repaired or taken out of service.

An inspection of the 105-H sprinkler system was made and report forwarded to the Safety Office

It was recommended that some means of ventilation be provided in the cabs of locomotives to eliminate the fumes and unusual heat developed by the motors. This is being investigated. It is also recommended that the hand-rail along the deck to the end steps be extended to guard the step cutout.

Several trips were made on various locomotives to observe the operating practices and procedures. All crews observed were performing their operation and duties with the utmost care and safety.

It was noted that where black-top has been laid around rail locations at the various 105 buildings, water will remain in the tracks. This could result in engines slipping on ice in cold weather. This should be cleared so that adequate drainage is provided.

Plant Security and Services Divisions

An inspection was requested of the 200 Area Maintenance on the Riverland water tower. The report received indicated that this tower is in a very dangerous condition and should be replaced or repaired in the immediate future. Action is under way to correct this hazard.

The Area Safety Activities Committee in the 100-F Area reported laxness of use of eye protection and hard hats in the construction of the experimental animal farm. However, the restriction on hard hats has been removed.

Injury trends were pointed out to the 100-F Area Council. The increase in the number of minors per period September 1 to 20 was compared to minor injuries for the month of August. Ratio to exposure may be the same since there has been an increase in Minor Construction employees.

The following conditions were discussed with the 100-F Area Council:

a. Six minors for the period 9-1-49 to 9-20-49 were due to employees not wearing protective equipment.
b. There was a delay in reporting six minor injuries during this period.
c. There has been a delay in forwarding Minor Injury Reports to the Safety Office.

The Program Committee in the 100-F Area is studying the possibility of combining a jumbo poster board with the score board on area majors and sub-majors.

An inspection of the dearerator towers and building installations in the 100-F Area was made for the purpose of making recommendations for dismantling. Items listed under corrections have been taken care of.

The 100-H Area is in the process of being turned over to the Operating Division and inspections have been made in various buildings almost daily. Reports of these inspections have been submitted to the Chief Supervisor of Safety and Fire. The unsafe conditions are known by the Operations Acceptance Committee. Arrangements to clear up same will be made by the Supervisor of each Division concerned after Operations has accepted the buildings and area from Construction.

The 200-West Area Council was asked to publicize and push the Topic of the Month for September. The activity created by the picture puzzle has been stimulating, and it is suggested that other similar topics be scheduled.

The need of supervisory training was expressed to the 200-West Area Council to assist in giving the supervisor the right approach to safety problems, education of employees, investigation of accidents, and accident prevention.

An interest in safety performance is being planned for an attempt to achieve the fourth no lost time injury year in the 200-East Area through a light publicity campaign.

The 200-East Area Council Housekeeping Inspection Committee held an area inspection during September.

A survey was conducted throughout both 200 Areas to determine the effectiveness of the Safety Topic of the Month. The results of the survey have been submitted to the Richland Safety Office.

Plant Security and Services Divisions

The survey now being made in the 300 Area on the Topic-of-the-Month plan is almost complete. The comments received are in general very favorable for the continuance of the plan.

The rat situation in the 300 Area has become critical. Plans for rodent control have been completed with the Public Health Section. Action is to be taken October 3, 1949.

Regulations have been circulated and enforcement will begin October 1, 1949, concerning a 20 M.P.H. speed limit within the 300 Area; also parking a vehicle within 20 feet of any building.

The report of the 300 Area Inspection Committee was reviewed. Hazards have been corrected in Building 313 to the extend of 10 out of 12 items. In Building 3717, some have been corrected, some not. In Building 321, all items have been attended to with the exception that the wearing of hard hats in required areas cannot be guaranteed 100%. At the next meeting of the Area Safety Committee, a report will be submitted outlining the excellent safety results achieved in Building 321.

The Safety Engineer in the 700-1100 Areas assisted Stores in setting up a procedure for cleaning, sterilizing, and repairing used safety glasses and goggles.

A proposed set of rules for Hi-Lift operation was submitted to the Stores Division.

A joint meeting of the Safety Division and the Industrial doctors was held on September 29 at 7:30 PM for the purpose of getting acquainted and a general discussion of the items and practices common to both Medical and Safety.

At a meeting with the Contract Engineers of the Project Engineering Division, it was decided that a specially prepared circular letter, setting forth safety requirements for a sub-contractor, would be mailed with the invitation to bid to each sub-contractor and the accepted sub-contractor would be interviewed by the Safety Division before signing the contract. This arrangement should improve the sub-contractors safety conduct on this project.

As suggested in the September meeting of the Program Committee of the Nucleonics Safety Council, the Safety Division conducted a survey to determine the value of continuing the Safety Topic of the Month and to determine whether the supervisor or foreman can get satisfactory results by promoting their own ideas for safety meetings.

FIRE PROTECTION

A study was made in the 300 Area of the dust condition in the new coal pulverizing room of the 384 Building. It was recommended that forced ventilation be installed.

Material and buildings in the White Bluffs Area are being excessed by Construction and are thereby becoming an operational responsibility for fire inspection.

Plans for the changes of 108-F Building and the P-11 project were reviewed.

The type of anti-freeze on hand for water pump can was found to be unsatisfactory for the new extinguishers. A new type recommended by the manufacturer of the extinguisher has been procured.

Plant Security and Services Divisions

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
Technical	300	1	Process Fire	None
Power	300	1	Spontaneous Ignition	None
Transportation	300	1	Motor Vehicle	None
Maintenance	200-W	1	Electric	None
Security & Patrol	Outer	1	Incendiary bullet	None

Industrial Investigations

Division	Area	No. of Fires	Cause	Loss
Technical	200-W	1	Heating unit	None
Maintenance	200-E	1	Welding	None
Maintenance	101	1	Spilling of flammable liquids	None
Security & Patrol	200-E	1	Electric	None

OFFICE SERVICES DIVISION

General Services

Laundering volumes were as follows:

Plant Laundry (Building 2723)

	August	September
Coveralls - Pieces	30,583	26,847
Towels - Pieces	9,509	8,164
Miscellaneous - Pieces	69,185	66,610
Total Pieces	109,277	101,621
Total Dry Weight - Lbs.	155,162	141,892

Richland Laundry (Building 723)

Flatwork - Pieces	71,135	59,485
Rough Dry - Pieces	35,777	29,400
Finished - Pieces	3,808	3,536
Total Pieces	110,720	92,421
Total Dry Weight - Lbs.	71,968	60,074

Monitoring Section (Building 2723-W)

Poppy Check - Pieces	78,308	67,110
Scaler Check - Pieces	95,296	76,775
Total Pieces	173,604	143,885

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Clerical Services

Telephone Exchange

All operators were interviewed during the month, and those who were to be retained were advised of the shift schedules they would work. All operators who are not to be retained in the Exchange were told of the arrangements made with Employment for interviews for placement in other work in the Plant.

There was a strike at Interstate Telephone Company of Kennewick for several weeks, and only emergency calls into Kennewick and Pasco were completed.

The new telephone directories were received and will be distributed on Saturday, October 1, 1949.

Due to a reduction in the usageof the Seattle and Portland leased lines, we have eliminated one of each so that we now have only two leased lines to Seattle and one to Portland.

	August	September
Lines Working as 1 - O Lines	633	631
Lines Working as 2 - O Lines	48	46
Lines Working as O PBX Lines	27	27
Lines Working as 1 - N Lines	20	20
Lines Working as 2 - N Lines	4	4
Lines Working as 2 OR Lines	1	1
Lines Working as 2 O-F Lines		1
Total Official Lines Working	734	730
Lines working as 1 - F Lines	122	125
Lines working as 2 - F Lines	16	15
Lines working as F-PBX Lines	9	9
Lines working as 1 - R Lines	9	9
Lines working as 2 - R Lines	1191	1185
"Both" 973		
"W" 115		
"J" 97		
Lines working as 2 - RF Lines	93	99
Lines working as 3 - RF Lines	1	1
Total Non-Official Lines Working	1441	1443
Vacant Lines	25	27
Total Lines n Multiple Bank	2200	2200

Mail Room

Volume was extremely heavy during the month due to the mailing of the telephone directories, organization charts, etc.

Plant Security and Services Divisions

	August	September
Pieces of Internal Mail Handled	206;491	340;500
Pieces of Postal Mail Handled	49;117	57,666
Pieces of Registered Mail Handled	1,019	930
Pieces of Insured Mail Handled	197	120
Pieces of Special Delivery Mail Handled	140	114
Total Mail Handled	256,964	399,330
Total Amount Postage Used	$ 1,321.62	$ 1,403.82
Teletypes Sent Out	1;331	957
Teletypes Received	1,330	934
Total Teletypes Handled	2,661	1,891
Total Number of Store Orders Filled	1,499	1,747

Office Equipment

A physical inventory of all office machines on the plant has been started along with the Atomic Energy Commission Property Section.

Arrangements were completed with Federal Prison Industries by the Atomic Energy Commission to refinish certain items of office equipment. Fifty desks and 74 chairs are being sent to them on a trial basis. If their work is satisfactory we will salvage much of the furniture now considered unusable.

	August	September
Office Machines repaired in shop	163	172
Office Machine service calls	236	275
Total Machines Serviced	399	447

Printing

The volume continues heavy in this section, but due to the additional personnel added during the month, we are beginning to reduce our work backlog.

	August	September
Multilith Orders received	335	243
Multilith Orders completed	343	236
Multilith Orders on hand at month end	37	54
Mimeograph Orders received	2330	2183
Mimeograph Orders completed	2330	2183
Mimeograph Orders on hand at month end	0	0
Ditto Orders received	1018	1153
Ditto Orders completed	1018	1153
Ditto Orders on hand at month end	0	0

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Stenographic Services

There has been an extremely heavy turnover of personnel in this section during the month as many stenographers were transferred to other divisions.

	August		September	
	Hours	Quantity	Hours	Quantity
Dictation and Transcription	0	0	0	0
Machine Transcription	14:30	38	4:30	8
Letters	112:25	188	144:30	330
Manual and Procedures	12:30	23	33:30	108
Duplicating - Stencils, Dittos	346:40	554	189:45	513
Special	522:50	577	343:05	1016
Training	81:20	—	271:00	—
Employees Terminated			16:00	
Total Hours	1,088:95		1,002:20	
Employees loaned to other divisions	785:15	—	1,141:30	—
Total Hours Available	1,874:10		2,143:50	

Records Control Division

Records inventory of the Manufacturing Divisions is 80% complete.

Two Inventory Clerks were assigned to inventory Atkinson & Jones Construction Company records. Atkinson & Jones records inventory is 75% complete.

All McNeil Construction Company records (75 transfer cartons) were received this month and are being checked against an inventory list to determine if all records were turned over to the Records Control Division.

J. A. Terteling & Sons turned over thirty-two cartons of records but still have more to turn in on two contracts which have been completed.

A Forms Control and Office Methods Engineer was appointed effective September 1, 1949.

During the month of September, approximately 160 forms were reviewed in detail. In the Security and Patrol Section, 34 forms were eliminated and three new forms created, resulting in a uniform plantwide clerical procedure. Time saving equivalent to one employee was effected.

A new termination procedure has been submitted to and accepted by the Employment Section. This new procedure will reduce one-half the time now required to process through termination, resulting in an annual savings estimated at seven to eight thousand dollars per year. This estimate is based on terminations which occurred during the year of 1948. Also, forms required in termination procedure were reduced from 3 to 1.

1212793

The Equipment Repair Order used by the Transportation Division, which due to design could not be produced by our Printing Plant has been revised and is now being printed on the project. It is estimated that this will result in the project saving $1,250.00 dollars per year.

	August	September
Cases of Records Received and Processed	129	224

Summary of Records Received and Processed in September:

Accounting Division	60	#5 Oxford Files
Construction Division	7	#1 " "
Manufacturing Division	7	#1 " "
Purchasing & Stores Division	39	#1 " "
Sub-Contractors:		
McNeil Construction Co.	77	#2 " "
" " "	2	#2 " "
J. A. Terteling & Sons	21	#2 " "
" " "	8	#1 " "
" " "	1	#5 " "
" " "	2	#8 " "
TOTAL	224	Transfer Cases

	August	September
Cases issued to various divisions for filing:	218	121
Persons viewing records:	75	27

PATROL AND SECURITY

General

Effective August 30, 1949, the 234-5 Building operation was placed on a 24-hour work schedule Monday through Friday of each week. Saturdays, Sundays and holidays will all be in operation on an off-shift basis.

The 221-U Building, 200-W Area, was designated as a permanent two-man post on September 9, 1949. Assignments will be as follows: One Patrolman assigned to the 221-U Building Badge House and one Patrolman assigned to the 221-U Building as a Foot Patrol.

Beginning September 12, 1949, the 100-H Area was designated as a storage point for classified material. Material of that nature was placed for storage on this same date.

The first of a series of security posters was posted in all Industrial busses on the project and will be posted monthly hereafter. These 81 posters, posted September 12, 1949, have the following inscription - "Make No Bones About It, Classified Information Must be Safeguarded at All Times. Security .... It's up to You".

An itensified [illegible] search program was placed into effect on September 14, 1949

at the 234-5 Building, 200-West Area.

Effective September 14, 1949, periodic checks of Road Block boxes will be made on the last Friday of each month.

As outlined by the Chief Supervisor of Security Patrol on September 20, 1949, a temporary alarm procedure was placed in operation on September 26, 1949 for use until the 234-5 Alarm Board System is in operation.

Beginning September 26, 1949, one Patrolman was assigned to the Instrument Warehouse in White Bluffs Monday through Friday on the Number 3 shift to control the entrance and exit of authorized personnel working on the Number 3 shift.

The Patrol Training School personnel started to use the emergency vehicle across the Columbia River from Hanford on September 28, 1949.

Effective September 28, 1949, one Patrolman was assigned to each shift in the 100-H Area Main Badge House to prepare for the change-over from Construction to Operations.

Beginning September 29, 1949, a Revised Red Tag Pass Procedure was placed into effect at the 105 Building, 100-H Area. Anyone who needs entry, and for whom no clearance has been provided, may gain entry by identifying himself to the "P" Division Area Supervisor and describing the reason and need for entry. The Supervisor will request a Red Tag Pass to be issued.

On September 29, 1949, the 212-N Building, 200-N Area, was placed on a standby basis. All clearances for the 212-N Building, as well as badges, pencils and keys, will be kept at the 212-P Building Badge House. It will be the responsibility of the Patrolman at the 212-P Building to issue badges and pencils to personnel going to the 212-N Building and to keep the badge and pencil register on these people.

At 12:01 A.M., September 30, 1949, all Construction clearances were void at the 100-H Area. In the future, an Operations clearance will be necessary to gain admittance to this area.

Effective at 8:01 A.M., Friday, September 30, 1949, persons leaving the 105 Building in the 100-H Area with material will be requested to sign the register and to describe the item removed. This is the same practice used in the other 100 Areas.

PATROL

The 200 Areas handled 62 process escorts between the areas.

Requests handled totaled 595, consisting mainly of opening doors, gates and providing escorts for employees of other divisions.

A total of 67 Unusual Incident Reports were received, consisting mainly of lost badges, pencils, contrabands picked up at barricades, traffic accidents and fires.

Patrol supervision handled one First Aid case during the absence of the area nurse.

Classified escorts totaling 73 were handled during the month.

Plant Security and Services Divisions

Practice evacuations were held as follows:

100-B Area	9-20-49	10:35 A.M.
100-D Area	9-21-49	10:35 A.M.
100-F Area	9-13-49	10:05 A.M.

Arrest Summary

	August	September
	0	0

Accident Summary

Total Accidents	4	3
Government permits revoked	0	0
Warning tickets issued	0	8
Verbal warning given	6	0
Citation tickets issued (traffic only)	0	1

Training

The courses for instruction at the Training School this month were:

	Hours
Pistol	2
First Aid	1/2
M-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 September 1949.

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 September, 1949.

The competitive Safety Program is being continued.

An instructor at the Training School attended the Supervisor's Training Course in Richland, September 19 through September 23.

Moving pictures for publication were taken of Security Patrol Activities at the Range.

The files at the Range were brought up to date and obsolete materials removed.

SECURITY

There were 206 Security Meetings held and attended by 2,957 General Electric employees during the month.

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Plant Security and Services Divisions

G. E. Security Bulletin No. 42 entitled "Three Security Reminders" was issued on September 13, 1949.

Employee Clearance

Class "Q" clearance received on old employees this month	1
Class "Q" clearances received on old employees to date	4,456
Class "Q" clearances received on new employees this month	46
Class "Q" clearances received on new employees to date	6,079
Class "Q" clearances received on both old and new employees since February 17, 1947	10,535
Formal "P" clearances awaiting change to "Q"	57
Authorizations issued this month	24
"Q" Security Orientation talks given this month to employees receiving "Q" clearance	85

Statistical Summary of Outstanding Area Badges

	August					September			
	A	B	C	Total		A	B	C	Total
100-B	627	1639	477	2743	100-B	607	1675	476	2758
100-D	750	817	527	2094	100-D	736	874	522	2132
100-F	775	1579	490	2844	100-F	804	1560	494	2858
200-E	991	1674	357	3022*	200-E	960	1716	348	3024*
200-W	1457	1622	339	3418	200-W	1440	1647	338	3425
300	1307	1601	238	3146	300	1313	1597	231	3141
200-N	44	866	126	1036	200-N	39	863	131	1033

*Includes 40 "A" Badges at Riverland Yards

*Includes 36 "A" Badges at Riverland Yards

Visitor or Temporary Badges

Area	August	September
100-B	411	428
100-D	822	846
100-F	696	716
200-E	605	637
200-W	469	534
300	1183	1229
200-N	966	978
Total	5152	5368

Plant Security and Services Divisions

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to AEC this month:	8	Personnel:	192
Total companies forwarded to AEC last month:	4	Personnel:	9
Total companies forwarded to AEC to date:	220	Personnel:	2,309
Total companies cleared for restricted data this month:	5	Personnel:	16
Total companies cleared for restricted data last month:	5	Personnel:	13
Consultant Comapny	1	Personnel	1

New companies forwarded to the Atomic Energy Commission this month:

Diabold, Incorporated
820 Third Avenue
Seattle, Washington

Republic Flow Meters
2240 Diversey Parkway
Chicago 47, Illinois

Farnes & Martig, Incorporated
417 N. E. Couch Street
Portland, Oregon

Charles T. Main, Company
80 Federal Street
Boston 10, Massachusetts

School District #400
Richland, Washington

Stainless Engineering & Equipment Company
544 Grand Avenue
Oakland, California

Number and type of clearance granted by the ATomic Energy Commission this month to vendors and consultants:

Formal "Q"	8
Formal "P"	16
Emergency "Q"	8
"P" only	7

[redacted]

HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING SEPTEMBER 30, 1949

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
ACCOUNTING DIVISION							
I. Visitorr to this Works							
R. Turner General Electric Company Schenectady, New York	Consultation on financial matters	F. E. Baker	9-26-49	9-30-49	X		
II. Visits to other Installations							
F. E. Baker to: Kellex Corporation New York, New York	Consultation on financial matters	H. H. Willis	9-8-49	9-9-49	X		
MEDICAL DIVISION							
I. Visitors to this Works							
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Medical consultation	W. D. Norwood, M.D. P. A. Fuqua	9-29-49	9-30-49	X		
CONSTRUCTION DIVISION							
I. Visitors to this Works							
W. L. Mayne Industrial Engineers Portland, Oregon	Work on boiler in 100-H Area	J. W. Mercke V. D. Nixon	9-13-49	9-15-49		X	100-H

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. A. Moncrieff Charles T. Main, Company Boston, Massachusetts	In furtherance of contract negotiations on Project C-342	J. R. Kelly	9-29-49	9-30-49	X		100-D 105
A. McDonald General Electric Company Seattle, Washington	Inspection of equipment furnished on order HWC-5459	R. M. Brennan H. A. Hauser	9-21-49	9-23-49		X	100-H 105
" "	" "	R. G. Kramer	9-2-49	9-16-49		X	100-H
DESIGN DIVISION							
I. Visitors to this Works							
R. Tower C. J. Yost Company Seattle, Washington	Consultation	A. E. Rhodes R. C. Hollingshead R. S. Perry	9-15-49	9-15-49	X		
G. Goddard Kewanee Manufacturing Company Seattle, Washington	Discussion of manufacturing problems in relation to procurement of equipment	A. J. Karnie	9-19-49	9-19-49		X	
J. D. Weaver Whiting Corporation Harvey, Illinois	Discussion "C" Plant Whiting crane	J. J. McCullough	9-26-49	9-26-49		X	
R. A. Moncrieff Charles T. Main Company Boston, Massachusetts	Contract discussion	J. W. Conley	9-28-49	9-28-49		X	
W. F. Uhl Charles T. Main Company Boston, Massachusetts	Contract discussion	J. W. Conley	9-28-49	9-28-49		X	
E. Long General Electric Company Schenectady, New York	Design consultation	P. E. Collins E. W. Seckendorff	9-29-49	10-14-49	X Top Secret		
II. Visits to other Installations							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. E. Kaveckis to: Instrument Society of St. Louis, Missouri America	Attend National Instru-- - ment Conference		9-9-49	9-18-49		X	
J. W. Conley to: Charles T. Main Company Boston, Massachusetts	Engineering consulta- tion	R. A. Moncrieff L. L. Ketchen	9-6-49	9-11-49	X		
W. E. Johnson to: Gen. Erg. & Consulting Lab. Schenectady, New York	Correlate design prob- lems with AEC sponsored developments	K. H. Kingdon	9-9-49	9-19-49	X		
W. E. Johnson to: General Electric Company Schenectady, New York	Discuss organizational methods	R. S. Neblett H. A. Winne	9-15-49	9-16-49	X		
W. E. Johnson to: Oak Ridge National Lab. Oak Ridge, Tennessee	Correlate design pro- grams with AEC sponsored developments	C. M. Rucker R. W. Cook S. R. Sapirie	9-12-49	9-13-49	X		
R. J. Schier to: Iowa State College Ames, Iowa	Information on Reactor Program - Project C-300	H. A. Wilhelm	9-26-49	9-26-49	X		
R. J. Schier to: Argonne National Lab. Chicago, Illinois	Information on Reactor Program - Project C-300	F. Foote	9-27-49	10-7-49	X		
R. J. Schier to: Knolls Atomic Power Lab. Schenectady, New York	Information on Reactor Program - Project C-300	K. H. Kingdon	9-28-49	9-29-49	X		
R. J. Schier to: Mass. Institute Technology Cambridge, Massachusetts	Material testing and development information Project C-300	A. R. Kaufman	9-30-49	10-3-49	X		
J. J. McCullough to: Crane and Company Chicago, Illinois	Technical consultation on connector program for Redox Design	A. M. Hauser, Jr.	9-15-49	9-22-49		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. J. McCullough to: Argonne National Lab. Chicago, Illinois	Discussion of laminated windows	S Lawroski	9-19-49	9-21-49	X		
I - continued							
G. R. Rede General Electric Company Schenectady, New York	Installation of H Dolly	D. Peterson	8-10-49	9-18-49	X		100-H 105
HEALTH INSTRUMENT DIVISION							
I. Visitors to this Works							
L. R. Donaldson University of Washington Seattle, Washington	Discuss plans for future studies of Aq. Biology Laboratory	H. A. Kornberg	9-14-49	9-15-49	X		
O. N. Biddulph Washington State College Pullman, Washington	Conference on future plans for Botany group	H. A. Kornberg	9-19-49	9-19-49	X		300 XXX
P. E. Church University of Washington Seattle, Washington	Meteorology conference	D. E. Jenne H. M. Parker	9-13-49	9-14-49	X		
II. Visits to other Installations							
H. M. Parker to: Kellex Corporation New York, New York	Inspection of facilities in connection with Hanford Works	B. R. Prentice	9-27-49	9-28-49	X		
H. M. Parker to: Jersey City Laboratory Jersey City, New Jersey	Consultation on H.I. problems in laboratory procedures	B. R. Prentice	9-27-49	9-28-49	X		
H. M. Parker to: Nat'l Research Council Lab. Chalk River, Ontario, Canada	Joint U.S.U.K. and Canadian Conference on permissible exposures	Health conference	9-28-49	10-1-49	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
H. M. Parker to: Argonne National Lab. Chicago, Illinois	Consultation on H.I. procedures	A. M. Brues J. E. Rose	10-3-49	10-4-49	X		
H. M. Parker to: American Roentgen Ray Society Cincinnati, Ohio	Meeting of American Roentgen Ray Society and lecture course on Radiation Dosimetry	- -	10-4-49 10-5-49	10-6-49 10-5-49		X X	
C. M. Patterson to: Kellex Corporation New York, New York	Consultation on H.I. problems in laboratory procedures	B. R. Prentice	9-27-49	9-28-49	X		
C. M. Patterson to: Jersey City Laboratory Jersey City, New Jersey	Consultation on H.I. problems in laboratory procedures	B. R. Prentice	9-27-49	9-29-49	X		
C. M Patterson to: Brookhaven Nat'l Lab. Upton, L.I., New York	Consultation on H.I. problems in laboratory procedures	F. P. Cowan	9-30-49	9-30-49	X		
C. M. Patterson to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on H.I problems	L. L. German	10-3-49	10-3-49	X		
R. E. Brown to: U. S. Geological Survey Portland, Oregon	Geology discussions	A. M. Piper	9-20-49	9-20-49		X	
N L. Dockum to: University of Rochester Rochester, New York	Instruction in radio-autographic technique	G. A. Boyd	9-26-49	9-30-49	X		
P. L. Eisenacher to: Thompson Rd. Plant Syracuse, New York	Attent G.E. Radiation In-strument Committee Meeting	G. Metcalf	9-8-49	9-8-49		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
P. L. Eisenacher to: Knolls Atomic Power Lab. Schenectady, New York	Exchange notes on instrument problems	L. L. German F. L. Vencill G. W. Dunlap W. W. Schultz	9-9-49	9-12-49	X		
P. L. Eisenacher to: Fort Monmouth, New York	Attend Radiation Council Symposium	- -	9-14-49	9-15-49		X	
P. L. Eisenacher to: New York, New York	Attend meeting Nat'l Research Council Subcommittee on instrumentation and Techniques	- -	9-16-49	9-16-49		X	
INSTRUMENT DIVISION							
I. Visitors to this Works							
K. E. Atwood Bailey Meter Company Seattle, Washington	Inspect instrument installations	W. M. Mathis E. Hilgeman	9-12-49	9-30-49	X		100-H 105
V. S. Rutherford Bailey Meter Company Seattle, Washington	Inspect instrument installations	W. M. Mathis	9-20-49	9-30-49	X		100-H 105
PROJECT ENGINEERING DIVISION							
I. Visitors to this Works							
J. F. Soderling J. F. Soderling Company Seattle, Washington	Gauging of components 313 Building	F. A. Bowman G. R. Moore	9-21-49	9-21-49	X		300 313
C. W. Burhans Minnesota Mining & Mfg. Company Seattle, Washington	In connection with Building 141-M of the Farm	D. M. Brown	9-8-49	9-8-49		X	100-F XXX

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Name - Organization	Purpose of Visit	[redacted] Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
MANAGEMENT							
I. Visits to other Installations							
J. R. Rue to: General Electric Company Schenectady, New York	Discuss problems involving both HW and Schenectady	R. S. Neblett	9-14-49	9-16-49	X		
C. D. Barker to: Atomic Energy Commission Washington, D. C.	Consultation on labor relations	C. Wilson F. Waller W. Williams	9-19-49	10-1-49	X		
D. W. McLenegan to: Knolls Atomic Power Lab. Schenectady, New York	Review prospective Technical needs and review education program	K. H. Kingdon L. L. Ferguson	9-20-49	9-22-49	X		
V. D Donihee to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Conference on SF Accountability for Los Alamos and HW.	N. E. Bradbury	9-21-49	9-26-49	X Top Secret		
C. J. Shortess to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Conference on SF Accountability for Los Alamos and HW	N. E. Bradbury	9-21-49	9-26-49	X Top Secret		
MANUFACTURING MANAGEMENT							
I. Visitors to this Works							
J. O. Davis Oak Ridge National Laboratory Oak Ridge, Tennessee	Consultation on metal rocovery	C. N. Gross	9-7-49	9-9-49	X		
H. E. Goeller Oak Ridge National Laboratory Oak Ridge, Tennessee	Consultation on metal recovery	C. N. Gross	9-7-49	9-9-49	X		
PURCHASING AND STORES DIVISION							
I. Visitors to this Works		[redacted]					

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. W. Nelson Layrite Concrete Products Co. Pasco, Washington	Deliver load of mortar sand to Maintenance	H. O. Monson	9-12-49	9-12-49		X	100-F XXX
D. Westermeyer Consolidated Freightways Pasco, Washington	Delivery load of pipe and fittings	H. O. Monson	9-22-49	9-22-49		X	100-F 108
D. Westermeyer Consolidated Freightways Pasco, Washington	Deliver load of fabricated steel	H. O. Monson	9-26-49	9-26-49		X	100-F 108
G Zenk Lee & Estes Pasco, Washington	Deliver essential materials	H. O. Monson	9-26-49	9-26-49		X	200-E XXX
C. Freauff Lee & Estes Pasco, Washington	Deliver essential materials	H. O. Monson	9-26-49	9-26-49		X	200-W XXX
F. B. Powe Lee & Estes Pasco, Washington	Load of 25 boxes of caps	H. O. Monson	10-3-49	10-3-49		X	100-H XXX
"S" DIVISION							
I. Visits to other Installations							
C. T. Groswith to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Secure information concering accountability methods.	R. D. Baker	9-21-49	9-27-49	X Top Secret		
TECHNICAL DIVISIONS							
I. Visitors to this Works							
G. A. Anderson Argonne National Laboratory Chicago, Illinois	Discuss future pilot channel test	J. B. Lambert	8-22-49	8-26-49	X		300 100-H 105 3706

Name - Organization	Purpose of Visit	[redacted] Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
A. R. Jamrog Argonne National Laboratory Chicago, Illinois	Discuss future pilot channel test	J. B. Lambert	8-22-49	8-26-49	X		300 3706 100-H 105
F. W. Thalgott Argonne National Laboratory Chicago, Illinois	Discuss future pilot channel test	J. B. Lambert	8-22-49	8-26-49	X		300 3706 100-H 105
J. R. Humphreys Argonne National Laboratory Chicago, Illinois	Discuss specific requests ANL-141	R. E Nather	9-16-49	9-16-49	X		300 3706 100-H 105
P. E. Brown Argonne National Laboratory Chicago, Illinois	Discuss specific requests ANL-141	R. E. Nather	9-16-49	9-16-49	X		300 3706 100-H 105
J L Waters Carbide & Carbon Chemical Corp. Oak Ridge, Tennessee	Metal recovery conferences.	R. H. Beaton	9-8-49	9-13-49	X		300 3706,321 200-W 221-T,231
F. W. Hurd Carbide & Carbon Chemical Corp. Oak Ridge, Tennessee	Metal recovery conferences	R. H. Beaton	9-11-49	9-13-49	X		300 3706, 321 200-W 221-T,231
S. J. Cromer Carbide & Carbon Chemical Corp. Oak Ridge, Tennessee	Metal recovery conferences	R. H. Beaton	9-11-49	9-13-49	X		300 3706,321 200-W 221-T,231
H. E. Goeller Oak Ridge National Laboratory Oak Ridge, Tennessee	Inspection of Redox operations	R. H. Beaton	9-9-49	9-9-49	X		300 3706,321
J O. Davis Oak Ridge National Laboratory Oak Ridge, Tennessee	Inspection of Redox operations	R. H. Beaton	9-9-49	9-9-49	X		300 3706,321
H. M Fraga Los Alamos Scientific Lab. Los Alamos, New Mexico	234-5 consultations	B. Weidenbaum	9-9-49	9-13-49	X Top Secret		200-W 221-T,231 272-Z,234,235

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. A. Bain Kellex Corporation New York, New York	Metal recovery process consultation	R. H. Beaton	9-27-49	9-29-49	X		
W. R. Peterson Kellex Corporation New York, New York	Metal recovery process consultation	R. H. Beaton	9-27-49	9-29-49	X		
II. Visits to other Installations							
G W. Watt (Consultant) to: Research Laboratory Schenectady, New York	Consultation regarding separations problem	J. Marsden	9-13-49	9-16-49	X		
F. E. Kruesi to: Oak Ridge National Lab. Oak Ridge, Tennessee	Technical consultation on P-11	A. D. Callahan	9-19-49	9-30-49	X		
R. Teats to: Detroit Gasket & Mfg. Co. Detroit, Michigan	Supervise extrusion of P-10 alloy	J. Emmons	9-30-49	9-30-49	X		
D. W Pearce to: Atlantic City, New Jersey	Attend ACS convention and recruit personnel	- -	9-18-49	9-23-49		X	
D. W. Pearce to: New Jersey Laboratory New Brunswick, New Jersey	Consultation on analytical chemistry	C J Rodden	9-26-49	9-26-49	X		
D. W. Pearce to: Knolls Atomic Power Lab. and Research Laboratory Schenectady, New York	Consultation on analytical chemistry	A. L. Marshall J. Marsden J. F. Flagg	9-27-49	9-29-49	X		
B Weidenbaum to: Los Alamos Scientific Lab. Los Alamos, New Mexico	234-5 consultations	M. Roy	9-14-49	9-20-49	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. M. Wagner to: Argonne National Laboratory Chicago, Illinois	Inspect Redox Operations	H. H. Hyman	9-16-49	9-16-49	X		
R M. Wagner to: Knolls Atomic Power Lab. Schenectady New York	Inspect Redox Operations	J. Marsden	9-23-49	9-23-49	X		
R M. Wagner to: Atlantic City, New Jersey	Attend ACS convention	- -	9-19-49	9-22-49		X	
W. E. Roake to: Argonne National Laboratory Chicago, Illinois	Inspect Redox Operations	H. H. Hyman	9-16-49	9-16-49	X		
W. E. Roake to: Knolls Atomic Power Lab. Schenectady, New York	Inspect Redox Operations	J. Marsden	9-23-49	9-23-49	X		
W E. Roake to: Atlantic City, New Jersey	Attend ACS convention	- -	9-19-49	9-22-49		X	
B. Weidenbaum to: Radiation Laboratory University of California Berkeley, California	Plutonium chemistry discussion	I. Perlman	9-6-49	9-9-49	X		

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PURCHASING AND STORES DIVISIONS
SUMMARY
SEPTEMBER, 1949

Following is a personnel summary indicating total number of employees of the Purchasing and Stores Divisions as of 8-31-49 and 9-30-49:

	Total Personnel as of 8-31-49	Total Personnel as of 9-30-49	Net Change
Exempt	46	46	0
Non-Exempt	257	256	Minus 1
TOTALS	303	302	Minus 1

The work load in the Purchasing Division increased approximately ten per cent over the previous month.

All shipments of coal to the Project were discontinued on the fifteenth due to the coal strike. There were indications, however, at month end that shipments would be resumed shortly.

As a result of negotiations between the Traffic Section and the carriers, a rate reduction was obtained on Ferric Sulphate which will result in approximate annual savings of $15,300.

Arrangements were concluded whereby Ferric Sulphate will be delivered in covered hopper cars as compared with the previous practice of requesting shipments in paper bags loaded in box cars which will result in approximate annual savings of $36,000.

Stores active inventories were reduced by a total of $192,276.50. This was accomplished by the disposal of obsolete materials and a continuing review and adjustment of stock levels.

The Stores Division was assigned responsibility for the control of all subcontractor-held inventories. All work in connection therewith will be handled as heretofore by subcontractor personnel but under the specific direction and guidance of Stores Division supervision.

Thirty-five representatives of Government agencies and private businesses were escorted through the project for the purpose of inspecting scrap and surplus property.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
SEPTEMBER, 1949

GENERAL

The work load increased during the month. 1,326 purchase orders were placed as compared to 1,267 placed in August. 2,177 purchase requisitions were received as compared with 1,998 received during August. Requisitions on hand at month end totaled 664 as compared with 533 at the end of the previous month.

A procedure for the review and approval of 'As Built' drawings for purchase purposes was developed with the Manufacturing Divisions. This procedure will materially improve our relationship with the vendors and insure the receipt of material which will meet our performance requirements.

Hooker Electrochemical Company and the United States Gypsum Company were awarded annual contracts to supply our requirements of Liquid Chlorine and Hydrated Lime respectively. Both contracts are for the period November 1, 1949 through October 31, 1950.

Invitations to bid were mailed requesting quotations on our estimated requirements of Sodium Bichromate and Ferrous Ammonium Sulphate.

All shipments of coal ceased on the fifteenth of the month due to the coal strike. Daily shipments of coal had been stepped up during the first half of September and as of the end of the month we had approximately three months' supply on hand.

A commitment was made with Stechert-Hafner, Inc., to cover our Plant Library book requirements for a six month period ending February 28, 1950. Monthly purchase orders will be issued to cover books received and invoiced each month. This will result in savings of approximately $100.00 per month.

During the month all non-exempt employees were rated and interviewed in accordance with the annual rating procedure set forth in Hanford Works Instructions Letter No. 50.

PERSONNEL

	Total Personnel as of 8-31-49	Total Personnel as of 9-30-49	Net Change
Exempt	22	22	0
Non-Exempt	23	23	0
TOTALS	45	45	0

Two non-exempt employees terminated and two replacements were added to the force. One exempt inspector was given termination notice on a 'Reduction of Force' basis.

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of Employees attending	45
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISIONS

STATISTICS

	G	D	Total
Requisitions on hand 9-1-49 (includes 46 assigned to Govt.)	503	30	533
Requisitions assigned during September	2,088	89	2,177
Requisitions placed during September	1,951	95	2,046
Requisitions on hand 9-30-49 (includes 47 assigned to Govt.)	640	24	664

		Number	Value	
HW Orders placed		1,252	$523,558.51	
HW Alterations issued		111	6,379.60	
	Total	1,363	$529,938.11	
HWC Orders placed		74	$ 20,403.32	
HWC Alterations placed		16	1,165.50	cr.
	Total	90	$ 19,237.82	
AEC Orders placed		171	$ 36,239.23	
DC Orders placed		10	38,398.50	

	OR	ORC	Total
Government Transfers	4	0	4

Open Orders

HW Orders		1,297
HWC & HWN Orders		151
Govt. Orders		14
	Total:	1,462

Number of new orders requiring inspection during month	9
Number of completed orders requiring inspection during month	35
Number of orders outstanding requiring inspection at close of month	46
HW orders expedited (Special Request)	220
HW orders expedited (Routine)	650
HWC orders expedited (Routine)	159

PURCHASING AND STORES DIVISIONS
STORES DIVISION
SEPTEMBER, 1949

During September, 1949, Stores active inventories (903) were reduced from $2,467,949.21 to $2,275,672.71, a total of $192,276.50. Spare parts inventory (904) was reduced from $1,524,329.49 to $1,519,949.33, a total of $4,380.16 for the same period. To summarize, Stores inventories (903 and 904) have been reduced by $724,278.35 since June, 1949. This was accomplished by the deletion of obsolete items and a continuing review of stock levels.

Effective September 26, 1949, the Stores Division assumed responsibility for the control of Subcontractors' inventories. All work in connection with inventories, setting up stock record cards, adjustments, and the issuance of catalogues will be performed by subcontractor personnel under the specific direction of General Electric Stores Division. A Supervisor and five exempt employees were assigned to the above function.

The increase in receiving reports processed during August continued throughout the past month. This increased activity is expected to continue as a result of lower stock levels.

The number of excess declarations forwarded to the Commission during the month decreased sharply as compared with past months. Personnel of the Surplus, Salvage, and Scrap Section is continuing the completion of inventories of equipment and material at the Pasco Warehouses. In conjunction with the inventory program at Pasco, no material or equipment is being accepted for storage there unless its status as true excess has been established.

The return from scrap metals sold during the month increased substantially, reflecting the market trend.

Thirty-five 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.

PERSONNEL

	Total Personnel as of 8-31-49	Total Personnel as of 9-30-49	Net Change
Exempt	21	21	0
Non-Exempt	225	224	Minus 1
TOTALS	246	245	Minus 1

SAFETY AND SECURITY

Inventory Control

Safety and Security Meetings Scheduled	1
Number of employees attending	30
Minor injuries	0

PURCHASING AND STORES DIVISIONS
STORES DIVISION

SAFETY AND SECURITY (Cont.)

Receiving, Warehousing & Disbursing

Safety and Security Meetings Scheduled	8
Number of Employees Attending	68
Minor Injuries	2

Surplus, Salvage & Scrap

Safety and Security Meetings Scheduled	—
Number of Employees Attending	6
Minor Injuries	126
	1

STATISTICS

Inventory Control

Number of items added to Stores stock	200
Number of items deleted from Stores stock	149
Items in Stores stock at month end	47,107
Store Orders Filled	16,417
Number of requisitions screened this month	2,072
Number of items furnished from plant sources this month	1,054
Inventory valuation (903-all captions, 906 and 912)	$2,275,672.71
Inventory valuation (Spare Parts) at month end	1,519,949.33
Total value inventories at month end, including Spare Parts	3,795,622.04
Value of Disbursements, not including cash sale items	150,497.84*
Value of Cash Sales	632.87
Value of materials declared excess	153,181.06
Value of materials returned to Stores stock for credit	2,075.44

*Includes $11,626.00 disbursed to Construction and CPFF subcontractors.

Receiving, Warehousing and Disbursing

Receiving Reports Issued	3,063
Emergency Store Orders Filled	3
Returnable containers on hand at month end	5,310
Returnable containers on hand over six months	1,102
Shipments processed (containers and material)	226

Surplus, Salvage and Scrap

Excess Account #10:10 Balance 8-25-49 $14,429,545.64

Receipts 8-25-49 to 9-25-49

Lumber	$ 1,534.78
Automotive Equipment	1,626,175.42
Machine Tools & Equipment	30,623.56
Office Furniture, Machines	16,589.00

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STATISTICS (Cont.)

Surplus, Salvage and Scrap (Cont.)

Household Furniture, etc.	$ 24.64	
Material & Supplies	1,451,630.54	
Miscellaneous Equipment	300,505.71	
Material in Process-not classified	1,291,753.51	
	$4,718,837.16	$4,718,837.16
		$ 19,148,382.80

Disbursements 8-25-49 to 9-25-49

On Project:		
Automotive Equipment	$63,679.05	
Machine Tools & Equipment	4,761.11	
Office Furniture, Machines	273.00	
Household Furniture, etc.	2.50	
Material & Supplies	10,168.99	
Miscellaneous Equipment	5,993.65	
Off Project:		
Lumber	114,794.02	
Automotive Equipment	730,859.75	
Machine Tools & Equipment	4,702.11	
Office Furniture, Machines	1,195.03	
Material & Supplies	11,490.82	
Miscellaneous Equipment	36,588.20	
	$ 984,508.23	984,508.23

Balance of Account #10:10 as of 9-25-49 (See attached list for breakdown of materials in this account by classification.)	$ 18,163,874.57
Total Receipts to Date	$ 21,735,303.03
Total Disbursements to Date	3,571,405.36

Scrap and Salvage Disbursed

Scrap Sales Completed	8
Scrap Sales in Process	14
Scrap Sale Revenue for the month	$ 17,403.22
Total Scrap Sale Revenue to Date	$111,809.19

PURCHASING AND STORES DIVISIONS
STORES DIVISION

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10:10

Class	Description	Monetary Value
1	Gun Emplacements, Fire Control Instruments	$ 1.25
2	Small Arms	1,429.02
3	Lethal Device Equipment	10.00
4	Ammunition	181.90
5	Flags, Bunting, Pennants, etc.	201.71
7	Fuel	606.87
8	Motor Vehicles: Electric Trucks, Tires, Tubes	257,657.93
10	Outboard Motors and all accessories	1,748.67
11	Pumps and Pump Parts	78,217.68
12	Marine Hardware	182.98
13	Engine and Fireroom Fittings	116.32
14	Lubricants	7,388.18
15	Electric Cable and Insulated Wire	18,226.66
16	Radio and Sound Signal Apparatus	12,925.02
17	Electric Apparatus	1,028,824.09
18	Instruments of Precision and Photographic Equipment	27,799.42
19	Blocks	12,976.68
21	Cordage	665.84
22	Wire Rope, Bare Wire, etc.	5,113.73
24	Canvas, Duck, Tenta go, etc.	859.11
26	Furniture	104,737.82
27	Textiles: Thread, Findings, Floor Coverings	43,529.12
29	Toilet Articles	36.79
30	Bathroom and Toilet Fixtures	10,226.62
31	Non-Electric Lighting Apparatus	1,505.58
32	Fire-Surfacing and Heat Insulating Materials	56,511.68
33	Gaskets, Hose, Packing, Sheet and Strip Rubber, Hose Fittings, Flexible Tubing	17,027.03
34	Belting, Harness, (Leather) etc.	1,056.20
36	Music and Musical Instruments	8.50
37	Special Wearing Apparel and Athletic Equipment	22,199.79
38	Brooms and Brushes	444.68
39	Lumber	1,490,398.02
40	Machine Tools	211,387.17
41	Hand Tools	24,204.15
42	Builders and General Hardware	53,596.96
43	Bolts, Nuts, Rivets, Screws, Washers, etc.	26,939.20
44	Pipe and Non-Flexible Tubes and Tubing	946,066.32
45	Pipe Fittings	522,863.29
46	Metal in Bars: Including Flat, Hexagon, Etc.	145,349.02
47	Metal in Plates and Sheets	12,193.63
48	Metal Shapes and Structural	19,622.27
51	Acids, Chemicals, etc.	29,731.71
52	Paints and Paint Ingredients	68,339.02
53	Pens, Pencils, Paper, Drafting Room and Printers' Supplies	24,094.39
54	Office Equipment	42,492.92

PURCHASING AND STORES DIVISIONS
STORES DIVISION
SEPTEMBER, 1949

RECAPITULATION BY CLASSIFICATION OF ACCOUNT 10:10 (Cont.)

Class	Description	Monetary Value
55	Clothing	$ 2,545.95
57	Laboratory Equipment	34,021.72
58	Fire Fighting Apparatus: Railway Equipment, Prefabricating Buildings, etc.	158,003.12
59	Building Materials: Asphalt, Brick, etc.	51,659.88
60	Boilers and Power Plants	59,709.94
63	Tableware	7,114.35
64	Kitchen Utensils and Apparatus	61,836.86
65	Ovens, Ranges, Stoves, etc.	27,752.61
66	Machinery: Pneumatic Tools, etc.	338,011.23
69	Animal and Hand-Drawn Vehicles	4,006.93
70	Agricultural Implements	2,642.93
72	Leather Boots & Shoes, Leather Clothing, etc.	576.77
73	Caps, Hats, Gloves, etc.	32.99
74	Infantry and Landing Force Equipment	796.83
78	Motorized Equipment & Heavy Construction Equipment	6,068,770.08
83	Airplane Accessories, Equipment and Parts	95.33
	Material in Process - Not Classified	6,016,602.11
	Total Account 10:10	$18,163,874.57

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
SEPTEMBER, 1949

GENERAL

As a result of our original proposal submitted to The Milwaukee Road September 17, 1948, which was reopened September 2, 1949, the North Coast-California Lines have established a rate of 72¢ per cwt. on Ferric Sulphate, in bags or in bulk, minimum 80,000 pounds, from Stego, California to Hanford, subject only to X-168 increase. At our request, the carriers secured approval from the Interstate Commerce Commission for short notice publication, and rate was published effective October 1, 1949. This will effect a savings of 17¢ per cwt., subject to X-168 increase, or approximately $216 per car on shipments in bulk, in covered hopper cars, and $144 per car on shipments in bags.

Arrangements were made whereby the greater portion of our Ferric Sulphate requirements, amounting to approximately nine million pounds for the period October 1, 1949 to September 30, 1950, will be shipped in covered hopper cars. The Purchasing Division requested this Section to arrange with the carriers to furnish sufficient covered hopper cars to take care of this movement. Direct negotiations with the Southern Pacific and Milwaukee Railroads resulted in an agreement that each line will furnish one half of the necessary covered hopper cars.

Savings to the project through receiving Ferric Sulphate in bulk in covered hopper cars compared with receiving this commodity in sacks in box cars are as follows:

	$2.00	per ton - Reduction in price
	6.00	per ton - Estimated savings in labor costs
Total	$8.00	per ton

If our entire annual requirements of Ferric Sulphate, amounting to nine million pounds, move in covered hopper cars, the total savings to the Project on basis of above figures would amount to approximately $36,000.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of September amounting to $5,719.20. This makes a total savings to date of $1,136,194.94.

PERSONNEL

	Total Personnel as of 8-31-49	Total Personnel as of 9-30-49	Net Change
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	8
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS
Savings Report

1. Rate reductions obtained from the carriers:

Commodity	Origin	Savings for September	Savings thru August	Total Savings To Date
Gas, Chlorine	Tacoma, Wash.	$ 90.00		
Soda, Caustic	Tacoma, Wash.	941.73		
Sulphate, Ferric	East Point, Ga.	$4,687.47		
		$5,719.20	$1,130,475.74	$1,136,194.94
2. Freight Bill Audit		73.26*	45,679.58	45,752.84**
3. Loss & Damage, & Overcharge Claims		1,026.50	74,281.30	75,307.80
4. Ticket Refund Claims		91.30	6,596.24	6,687.54
5. Household Goods Claims			13,865.38	13,865.38
		$6,910.26	$1,270,898.24	$1,277,808.50

* Includes $24.09 for the AEC
** Includes $19,360.31 for the AEC

Work Volume Report

Reservations Made	Rail	38
	Air	106
	Hotel	81
Expense Accounts Checked		63
Household Goods & Automobiles		
	Movements Arranged Inbound	5
	Movements Arranged Outbound	2
	Shipments Traced	3
	Insurance Riders Issued	6
	Furniture Repair Orders	4
Ticket Refund Claims		
	Filed	5
	Collected - Number	4
	Collected - Amount	$91.30
Freight Claims		
	Filed	7
	Collected - Number	20
	Collected - Amount	$1,026.50
Freight Bill Audit Savings		
	GE	49.17
	AEC	24.09
Freight Shipments Traced		33

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Cont.)

Work Volume Report (Cont.)

Quotations	Freight Rates	147	
	Routes	36	
Bills Approved	Air Express - GE	5	
	Carloading - GE	57	
	AEC	3	
	Express - GE	113	
	AEC	45	
	Rail - GE	552	
	AEC	5	
	Truck - GE	203	
	AEC	52	
Carload Shipments	Inbound	610	
	Outbound	49	

Report of Carloads Received

Newport, Kern & Kibbe	Asphalt	3	
Richland Concrete Co.	Cement	1	
Richland Transportation	Coal	60	
J. A. Traxell	Poles	2	
	Timber	1	
J. A. Terteling	Grease	1	
	Steel Bars	1	69
General Electric Company	Acids	1	
	Anti-freeze	3	
	Asphalt	6	
	Bismuth Metal	1	
	Caustic Soda	11	
	Cement	7	
	Chemicals	3	
	Chlorine	2	
	Coal	478	
	Express	1	
	Ferric Sulphate	4	
	Ferrous Ammonium Sulphate	1	
	Lime	3	
	Merchandise	3	
	Nitric Acid	11	
	Phosphoric Acid	2	
	Soda Ash	3	
	Sulphuric Acid	1	541
Total Entire Project			610

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

SUMMARY---SEPTEMBER, 1949

Open requisitions decreased from 206 at the beginning of the month to 174 at the end of the month. Total plant personnel decreased during the month from 7,522 to 7,519. Turn over rate, including terminations due to lack of work, during September was 2.13%. Turn over rate, exclusive of terminations due to lack of work, was 2.01%. Requirements for additional comptometer operators have now been met.

Three employees retired during September, two of which were on optional retirement. Forty-four visits were made to the Kadlec Hospital, and two visits were made to private homes for the purpose of contacting employees confined because of illness. Two employee deaths occurred during the month of September. Eleven awards, totaling $535.00, were approved by the Suggestion Committee during September. Planning for the programming of the new General Electric Health Insurance Plan has been completed, and an advance copy of the plan has been forwarded to all Hanford Works supervisors.

Ten meetings, in which 380 supervisory employees participated, were held by the Training and Program Development Group during September. There were 137 employees given orientation during the month of September.

September was an extremely active month in the Community Relations Division, as evidenced by the fact that the Nucleonics Department News Bureau released to the "Local List" of newspapers and radio stations a total of 40 separate news releases and photographs with captions.

It is significant to note that a large portion of this material concerned the new dial telephone system which is to be cut over early in October. Because it was necessary to disseminate a wide variety of information which telephone users should have prior to the cut-over, the News Bureau planned a very complete program of public information releases.

Public Relations wise, the News Bureau participated in two talks during the month. The Assistant General Manager addressed the Ellensburg Rotary Club, and was substituted for in an address before the Sunnyside Chamber of Commerce by the Community Relations Division Head. The News Bureau prepared publicity releases concerning the Assistant General Manager's Ellensburg talk, and this same release was used at Sunnyside.

Community Relations wise, the News Bureau has been responsible for release of all public information concerning National Fire Prevention Week, and has played a large part in preparation of material that will be submitted as part of the Community Fire Division's record book of the event.

Employee and Community Relations Division

Summary

The 67 leading daily newspapers, wire services, and radio stations in the Pacific Northwest served by the Nucleonics Department News Bureau received a total of 9 releases during the month.

Special Programs, which handles all material prepared for dissemination to employees in the form of booklets, posters, and other methods assigned from news material in Hanford Works NEWS, played a large part in the formation of the publicity program which preceeds the actual signing of applications for participation in the G.E. Group Health Insurance Plan. In addition to actually preparing the publicity news stories for release, Special Programs also prepared the new G.E. Group Health Insurance Plan booklet together with a letter to accompany the booklet when it is mailed to employees' homes. The letter will be signed by the Nucleonics Department General Manager.

In addition to the Plan booklet, Special Programs has also prepared a self-mailing promotion piece which will be sent to employee homes as a follow-up of the booklet, and will urge employees to sign up for participation prior to the deadline by which all applications must be in.

The Wilson 50th Anniversary Program contains several special activities of an employee information nature, and Special Programs was active during the month of September in the preparation of publicity materials to support these activities. One example is the special suggestion system poster which was prepared and placed on all suggestion boxes during the month.

Because Special Programs is assigned responsibility for public information concerning Kadlec Hospital, it was responsible for preparation during the month of local releases announcing the closing of the North Richland Hospital and the establishment of new medical-dental offices in the business section of North Richland. In addition, Special Programs is also handling release of information concerning new polio cases in Richland as they are diagnosed. A release of this type was used during the month to re-emphasize necessary precautions to be taken to avoid an increase in the polio rate.

Community Relations wise, Special Programs assisted in the promotion of Emily Post's "Motor Manners" booklet. The work of this included arranging for photographs and preparation of news releases.

The Women's Feature Writer prepared two women's pages which were published in the Works NEWS during the month. In addition, the feature story called "Pick Up Patterns" resulted in requests for 90 patterns.

Since the Women's Feature Writer also handles announcements of recreation features, the increasing interest in this particular type of information is significant. As a result of a short article announcing that additional "Canasta" rules were available, 70 requests were received for these from readers of the Works NEWS.

As a means of further aiding in publicity of the Community Chest Drive within the plant, the Women's Feature Writer prepared a two-page insert for the Works NEWS. This was inserted in the September 30, 1949, issue.

Employee and Community Relations Division

Summary

Two hundred fifty-nine requests were received during the month by the Women's Feature Writer for listing of rides or riders in the special column she prepares each week for the Works NEWS. The Women's Feature Writer also prepared a 2,000 word article for release by the News Bureau during the month. This feature, now complete with photographs and captions for the photographs, was requested previously by a Northwest newspaper, and will be furnished to that newspaper for publication at an early date. The article concerns construction of new Richland churches.

Five issues of the Works NEWS were published during the month of September. A total of 7,800 copies are being printed each week.

A safety puzzle entitled "What's Wrong with This Picture?" containing 61 examples of unsafe acts was published in the September 2 issue of Hanford Works NEWS. As a result of the exchange which we have with other plant newspaper editors, requests have been received from several of these editors, and from the Works NEWS Coordinator's office in Schenectady for permission to reprint the picture puzzle, and for the key answer sheet.

Publicity for the plant Community Chest Drive has made up a substantial portion of each week's Works NEWS during the month. This appears to have been time and effort well-spent, and serves to show how important the employee newspaper is in reaching employees with messages management desires them to receive.

Work was completed during the month by the Works NEWS on the start of a column in which questions of employees and answers to those questions will be published. The column, to be entitled "Can You Tell Me?" will be published the last Friday of each month. Preparation for publication of this column included the write-up of the plan which will be followed, and on which approval could be obtained from Nucleonics Department Management, and the preparation of a letter to all Supervisors announcing the new column in advance of the announcement in the Works NEWS.

The activities of the Labor Relations and Wage Rates Division have been 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 Office Workers Union withdrew their petition for investigation and certification without prejudice. Notices were received from the N.L.R.B. of petitions for the investigation and certification of the Technical Engineers & Architects Association, the Building Service Employees International Union and the International Brotherhood of Teamsters, Chauffors, Warehousemen and Helpers of America. A Decision and Direction of Election was received from the N.L.R.B. authorizing an election for all guards, including village patrolmen. The election was scheduled for October 11 and 12. Four meetings were held with the Council Grievance Committee. Meetings were held with supervisors to explain the wage system changeover procedure. Three reimbursement authorization requests were submitted to the A.E.C. for approval. Approval was received on the reimbursement of nine additional classifications.

EMPLOYEE AND COMMUNITY RELATIONS DIVISION

SEPTEMBER, 1949

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

Effective September 5, 1949, a General Clerk "D" assigned to the Investigation and Files Section was upgraded to a General Clerk "C", and reassigned to the Procurement and Procedures Section as a replacement for a General Clerk "C", who resigned effective September 23.

The opening created by resignation and reassignment was filled effective September 5, by upgrading a Stenographer-Typist "D" in the Investigation and Files Section.

Effective September 12, 1949, L. A. Munther was reclassified from an Employment Interviewer and Investigator "B" to an Employment Interviewer and Investigator "A".

Effective September 23, 1949, a Stenographer-Typist "C" attached to the Procurement and Procedures Section resigned to enter school.

Effective September 26, 1949, a General Clerk "D" was engaged for the Investigation and Files Group to replace a General Clerk "D" who resigned effective September 14, 1949, to enter school.

Effective September 26, 1949, a General Clerk "C" assigned to the Investigation and Files Section was reclassified to a General Clerk "A".

Employee Services:

Effective September 12, 1949, S. E. Linter, Section Supervisor, who had been on loan to the Labor Relations and Wage Rates Division since June 23, 1949, returned to his regular assignment.

Training and Program Development:

Effective September 5, 1949, a Stenographer-Typist "B" was upgraded and transferred to the "P" Division as a Stenographer-Typist "A".

Effective September 19, 1949, a Stenographer-Typist "C" was engaged.

Employee and Community Relations Division

Organization and Personnel

Community Relations

There were no organization changes in this division during the month.

Labor Relations and Wage Rates

One Section Supervisor, on September 12, 1949, returned to the Employee Relations Division from which he was temporarily loaned.

No. of employees on payroll	September, 1949
Beginning of month	81*
End of month	79
Net decrease	2

This decrease was due to voluntary terminations.

*On the August report, the number on payroll at end of month should have been shown as 81 instead of 80.

Employee and Community Relations Division

ACTIVITIES

Employee Relations

Employment:

	8-1949	9-1949
Applicants interviewed	1, 924	1, 576
Open Requisitions		
Exempt	0	0
Nonexempt	206	174

Of the 206 open requisitions at the beginning of the month, 139 were covered by interim commitments. Of the 174 nonexempt open requisitions at the month end, 104 were covered by interim commitments. At the end of September, there were no requisitions on file for exempt, nontechnical personnel.

	8-1949	9-1949
Employees added to the roll	266	157
Employees removed from the roll	129	160
Net gain or loss	+ 137	- 3

Of the 160 employees removed from the roll during the month, 9 were terminated due to lack of work, including 8 who were outside the bargaining unit.

Turn over rate for the month of September, including those who were terminated due to lack of work, was 2.13%. Turn over rate of employees, exclusive of those who were laid off for lack of work, was 2.01%.

During the month of September, 35 new requests for inter-Divisional transfers were received and reviewed by the Employment Office. As a result of these requests and others on file, 47 transfers were effected. In addition, 34 transfers were effected for employees who had received notice of termination due to lack of work.

The recruitment efforts made in Portland, Oregon, on August 31 and September 1, and in Seattle, Washington, on September 2 and 3, were only fairly successful. A total of 71 applicants were interviewed in the two cities, and employment offers were made to 6 comptometer operators and 8 stenographers. Supplemented by local recruitment, the requirements for additional comptometer operators have now been made.

Employee and Community Relations Division

All of the above named employees were participating in the Pension Plan, and were interviewed prior to their retirement and fully informed as to the benefits each would receive under this Plan.

The 200-West regular monthly Area Council Meeting was attended by a representative of the Employee Services Group.

Two employee deaths occurred during September, namely:

_____ Purchasing and Stores Division;
_____ Plant Security and Services Division.

In each of these cases the employees' families were contacted, and information relative to insurance benefits, social security forms, and pension refund were furnished at that time.

Suggestion System

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

	8-1949	9-1949	Total since 7-15-1947
Suggestions received	81	92	3, 817
Investigation reports completed	94	71	3, 632
Awards granted by Suggstion Committee	0	11	401
Cash awards	$ 0	$ 535	$ 4, 785

The September 23 issue of the Works News featured an award granted upon the revaluation of a suggestion previously granted a cash award of $ 50.00 in 1948 to N. L. Merkley, an employee in the "P" Division. The revaluation resulted in an additional cash award of $ 400.00.

Insurance and Compensation

Public Liability

_____ seeking damages in the amount of $ 42,912.00, Claim No. _____ -- The Travelers Insurance Company informed us during September that there was a possibility that this claim will be settled at a figure of approximately $ 3,000.00. Serious consideration will be given such a settlement in view of the fact that defense costs in such an action would amount to almost an equivalent figure.

_____, Claim No. _____ -- The plaintiff in this case, which arose out of a compensable injury which occurred on November 18, 1948, wherein plaintiff lost the sight of one eye upon being struck by a steel cable, is seeking damages in the amount

of $ 25,000.00. Full medical treatment was given plaintiff by physicians at Kadlec Hospital and also by specialists at Seattle and at the Mayo Clinic. Plaintiff alleges that the permanent partial disability settlement in the amount of $ 1,620.00 as provided by the Workman's Compensation Law was not sufficient compensation for the loss of the sight of an eye. He therefore instituted suit alleging negligence on the part of and the The claim was referred to the Travelers Insurance Company who arranged for a meeting between the plaintiff's lawyer, and officials of the explained the treatment rendered , and at the conclusion of this explanation plaintiff's attorney agreed that there was no negligence, and indicated that he would recommend to the plaintiff that the case be dropped.

Compensation

In conformity with instructions given to employers by the Department of Labor and Industries, it has not been necessary to report trivial injuries, such as minor scratches and bruises to the Department of Labor and Industries. According to law if an injury is not reported within one year of the date of injury, the injured's claim is not recognized. In some five instances it has been found that an unreported injury has developed into something serious over a year after the injury was incurred, and the employee has not been allowed to recover. This matter has posed a rather embarrassing situation upon the Company, and a study is being made to determine the best approach to the problem. Representatives from the Department of Labor and Industries visited the Hanford Works on September 28 for the purpose of discussing the problem, and they are working with us in reaching the best solution.

The number of claims reviewed by the Department of Labor and Industries for the first 9 months of 1949 was 12.66%. This is an increase of approximately 11% over the same period for 1948, and it is partially attributed to more comprehensive investigations and medical reports, as well as a more conservative attitude on the part of the Department of Labor and Industries.

Arrangements have been made whereby all claims concerning Operations personnel are transmitted directly from the Medical Division to the Safety Division for review and comments. It is felt that this arrangement will provide better investigations and reports through Safety, than has been experienced in the past. The employer's portion of the report will continue to be completed by the Insurance and Compensation Section.

-- The Department of Labor and Industries authorized a pension award to inasmuch as he resides outside the state of Washington, a recommendation has been made to the Department that this pension be settled for $ 5,000.00, rather than establish a pension reserve which would pay him $ 125.00 per month for the remainder of his life.

-- A pension reserve of $ 16,942.53 was established by the Statistics Section of the Department of Labor and Industries for in connection with his serious injury resulting in total permanent disability. The Company Medical Division was in accord with this order.

[redacted] -- An appeal for a rehearing by the Company to the Board of Industrial Insurance Appeals was made on this claim due to the fact that the examining physician stated that the subject was "perfectly capable of performing a gainful occupation and he would not restrict his ability, in a physical sense, to engage in hard labor". In this case the examining physician recommended a permanent partial disability award, as the claimant had been off work a year.

[redacted] -- A 10% permanent partial disability award was made in this case upon recommendation of the medical examiner. The Company protestes such an award as the medical examiner stated, "all motions of the hand and digits are normal". The examiner further stated, "with time the strength of the hand will return." As a result of the Company protesting, the Department has ordered the claimant to submit to a commission examination of two qualified surgeons for addtional rating.

[redacted] -- A 10% permanent partial disability award for unspecified injuries was made by the Department of Labor and Industries upon recommendation of the medical examiners. The Company has protested this award since the examiners in their report stated that [redacted] complaints "are entirely subjective. If there has been an injury to his neck causing pain, it must have been to the soft tissues only. Because of this possibility we suggest giving him 10% of the maximum allowed for an unspecified injury and the case closed. Because no further treatment is necessary the condition is fixed and the claimant is able to work". The Company appeal for a rehearing is based upon the statement of the doctors that there was a possibility that there may have been injury, and further that the complaints were subjective.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to 48 insurance and investigation agencies during the month of September.

Training and Program Development:

During the week of September 19 - 24, the 40-Hour Basic Supervisory Training Program was presented again on a plant wide basis, and a total of 38 supervisors attended this presentation.

A letter dated September 24, 1949, concerning the "Let's Talk It Over" program was prepared for the signature of Mr. Prout and distributed to all Advisory Board members. Also the Advisory Board was furnished with overall plans for the presentation of the program.

First copies of the Employee Relations Handbook for Supervisors were distributed locally during September, by issuance of same to members of the Advisory Board and other employees of higher supervision, totalling 103 in numbers. In addition, schedules have been completed for the dissemination of the handbook to all supervisors through the medium of group meetings. By month end

a total of 9 meetings had been held, and 342 handbooks distributed. Additional meetings will be held in October. Revisions for the handbook are now being prepared for subjects, including rating of employee--nonexempt, retirement procedure, wage rate administration, fire protection, and work order procedure.

During September there were 112 new employees and 25 re-engaged employees given orientation. Of this number 55% elected to participate in the Group Life Insurance Plan, and 70% elected to participate in the Group Disability Insurance Plan.

STATISTICS

Number of employees on rolls	8-31-1949	9-30-1949
Exempt	1, 615	1, 607
Nonexempt	5, 907	5, 912
Totals	7, 522	7, 519

ADDITIONS

	Exempt	Nonexempt	Total
New Hires	5	110	115
Re-engaged	0	25	25
Reactivations	2	14	16
Transfers (from other plants)	1	0	1
Actual Additions	8	149	157
Payroll Exchanges	11*	6**	17
Gross Additions	19	155	174

TERMINATIONS

Actual Terminations	16	114	130
Removals from Roll	5	25	30
Payroll Exchanges	6***	11****	17
Gross Terminations	27	153	177

Approximately 93% of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Returning to School (b) Personal Reasons (c) Another Job.

* Transferred from Weekly Salary Roll
** Transferred from Monthly Salary Roll
*** Transferred to the Weekly Salary Roll
**** Transferred to the Monthly Salary Roll

Employee and Community Relations Division

GENERAL

	8-31-1949	9-30-1949
Applicants interviewed	1, 924	1, 576
Photographs processed	5, 912	5, 159
Fingerprint impressions taken (in duplicate)	458	420
Procurement letters written	486	503

ABSENTEEISM STATISTICS
(Weekly Salary Roll)*

Male	1. 47 %	1. 54 %
Female	3. 07	3. 31
Total Plant Average	1. 86	1. 96

INVESTIGATIONS STATISTICS

Cases pending at beginning of month	996	1, 143
Cases received during the month	331	261
Cases closed	184	298
Cases pending at month end	1, 143	1, 106
Cases found satisfactory for employment	310	196
Cases found unsatisfactory for employment	7	1
Cases closed before investigation completed	12	19
Special investigations conducted	17	2

	8-1949	9-1949	Total since 9-1-1946
Claims received and reported to the Department of Labor and Industries	68	66	3, 021
Claims received and reported to the Travelers Insurance Company	12	17	365

* Statistics furnished by Weekly Payroll Division

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, 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).

9/1 The Community Patrol Chief quoted statistics about traffic fatalities among children and urged that motorists drive carefully in Richland.

9/1 A letter was sent to local editors with a photograph of C. E. Wilson, a feature story and a group of quotations from speeches by Charles E. Wilson to commemorate his 50th anniversary with the Company. All of the material except the letter was prepared by the General News Bureau. Information about the 50th anniversary observation was mailed to all Northwest media except in the immediate locality of Hanford Works by the General News Bureau.

9/1 A power outage scheduled for September 2 was announced by the Superintendent of the Electrical Division.

9/2 It was announced that a discussion of child safety would be presented over radio station KWIE by the Richland P.-T.A.

9/2 It was announced that 150 school boy patrolmen would resume duties at school intersections during the next week.

9/6 A photograph of the Community Manager with representatives of the Marine Corps League was distributed to local media. Twenty-five copies of the photograph were sent to the Marine Corps Convention Headquarters in Yakima for distribution in newspapers throughout the state. This was done in conjunction with the Marine Corps League annual state convention in Yakima before which the Community Manager was the principal speaker.

9/8 A news story quoting the Head of the Richland Patrol Traffic Section called attention to the large number of traffic deaths among teenage drivers and urged caution in Richland.

9/8 A story was distributed with a by-line for the Head of Community Safety which called attention to the re-opening of Richland schools and urged Richland drivers to be careful in school zones.

9/11 An informative release prepared on the speech given by the Community Manager at the Marine Corps League State Convention was distributed to local media. A representative of the Marine Corps distributed the story throughout the state.

Employee and Community Relations Division

9/12 A number of traffic fatalities in the nation was stressed in this article and Richland drivers were urged to drive carefully.

9/12 A group of photographs showing various phases of installation of Richland's dial telephone system were distributed to local media with appropriate cut lines.

9/12 A photograph of the Executive Committee for Richland's observance of National Fire Prevention Week which included several G.E. and A.E.C. officials wearing hats and mounted on a fire engine was sent to local media.

9/14 It was announced that a drive for Community Chest funds would be conducted throughout Hanford Works between September 30 and October 15.

9/19 The re-organization of the Project Engineering Division was publicized locally by the distribution of a photograph of the head of the division and the three superintendents who would report to him as a result of the change.

9/20 In conjunction with National Fire Prevention Week an informative release pointed out certain rules to follow in case of a fire in a home at night.

9/20 An informative release listed certain courses that will be offered in the fall session of Richland Adult Evening Classes.

9/20 A photograph showing the president of the Richland P.-T.A. broadcasting over radio station KWIE about child safety habits was distributed.

9/21 Two thousand child safety pamphlets entitled "Could You Stop?" were placed in parked cars by Richland Boy Scout Troop 49. A photograph of the troop was sent to local media.

9/21 It was announced that a dial telephone system would be cut in at White Bluffs on September 27 at 10 p.m.

9/21 Details about classes to be available in the Adult Evening School during the fall term were revealed.

9/22 Night classes offered by the Adult Evening School for the first time this fall were announced.

9/22 An informative release prepared on the talk given by the president of the P.-T.A. over KWIE was released to local media.

9/22 A list of the fire hazards that have caused most fires in homes recently were released in conjunction with National Fire Prevention Week.

9/22 A college credit course in Washington State History will be offered by the Adult Evening School it was revealed.

Employee and Community Relations Division

Employee Services:

The planning for programming the new General Electric Health Insurance Plan has been completed, and an advance copy of the plan, with a letter from the Manager of the Employee and Community Relations Division, has been forwarded to all Hanford Works supervisors. The advance copy to supervisors was the initial step in presenting the plan to all personnel.

On September 23, 1949, the Employee Services Group initiated a new service to all employees hospitalized at Kadlec Hospital by delivering their pay checks to them on pay day. By the month end weekly checks had been delivered to 15 employees who were confined either at their home or at Kadlec Hospital.

During the month of September, 44 employees confined to Kadlec Hospital were visited by a representative of the Employee Services Group. In addition, 2 employees who were confined at home were visited.

As set forth in Supplement 4 to Instructions Letter No. 23, employees absent because of pregnancy are expected to return to work within 8 weeks after confinement, if the absent employee's continuity of service and resulting employee benefit plans are to be protected, the Employee Services Group will contact each employee by letter currently off of the payroll, who were removed account illness--pregnancy during the past twelve months for the purpose of informing them of the above policy.

The Employee Relations Division again has been assigned the responsibility for conducting the annual Community Chest Drive for the Company. Accordingly, considerable time has been devoted during the month in making necessary arrangements for programming and publicizing this activity. The Drive will be conducted during the first two weeks of October.

An Instructions Letter providing for visitation of all employees absent due to illness or for unknown reasons was prepared and approved during the month, however had not been released by month end.

Eight visits were made to the Areas during September by the Employee Services Counselor, and during one of these visits Special Hazard Notices were posted in 100-H Area.

During the month of September, 8 letters were received on the same number of employees relative to their indebtedness. In these instances, the employees were notified of the receipt of these letters.

The following employees retired during September:

John H. Moseley, Plant Security and Services Division, (Optional);
Claire G. Sircolumb, General Accounting Division;
Benjamin M. Sutherland, Plant Security and Services Division, (Optional).

Employee and Community Relations Division

9/23 The appointment of an assistant superintendent of the "S" Division was announced through local media.

9/23 A $450 suggestion award made by the Hanford Works Suggestion Committee was distributed.

9/26 A photograph of fire trucks leaving station No. 1 was distributed with cut lines in observation of Fire Prevention Week to five local newspapers.

9/26 A portrait of the Assistant General Manager of the Nucleonics Department who was scheduled to speak to the Ellensburg Rotary Club during the coming week was mailed to local media.

9/27 Richland and Hanford Works telephone subscribers were urged to request dial telephone directories if they had not received them by October 5.

9/27 It was announced that the North Richland Medical Center would be closed after October 7.

9/27 Residents of Richland were invited to see a free movie about diabetes in Columbia High School cafeteria during the next week.

9/27 A photograph of the Head of H.I. Biology Division was sent to local media. He was scheduled to speak at Pullman, Washington on October 4 during the Annual Livestock Feeders Day Celebration.

9/28 An informative release stated that the Richland Chapter of the A.C.S. would devote their regular Monday night broadcast to Fire Prevention.

9/28 This informative release announced that Richland's dial telephone system would be cut in at 10 p.m. October 7.

9/28 The Head of Community Safety stated that copies of Emily Post's "Motor Manners" would be sent to every home in Richland within the coming two weeks.

9/28 The Chief of Community Patrol called attention to a Richland regulation that prohibits the discharge of firearms on the Government reservation.

9/29 The Assistant Community Fire Chief explained the procedures to be followed in cleaning up Richland homes in order to reduce danger of fire.

9/29 Community Patrol Chief stated that hunting will not be permitted on the Hanford Works Government reservation during the 1949 hunting season.

9/29 Some of the interesting facts contained in Emily Post's "Motor Manners" were revealed.

9/30 A description and some of the background of the new dial telephone directories was mailed to the local media.

Employee and Community Relations Division

VILLAGER only--In answer to an inquiry from the Richland VILLAGER concerning a rumor that the population of North Richland would be less than 200 by October 1, a statement by the Manager of the Design and Construction Divisions was obtained. He said that the 200 figure as of October 1 was altogether too small but a gradual reduction of sub-contractor forces would continue as the present phase of the construction program neared completion.

FILM SERVICE

During September, five films were obtained for the Triple-Teen group in Richland. The G-E film "By Their Works" was also shown by the Triple-Teen group during the month.

Four G-E films were supplied to the Visual Aids Department at Columbia High School for showing during September.

"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:

9/1 The appointment of J. R. Kelly as Acting Manager of G.E.'s Design Division at Richland was announced by the Manager of the Design and Construction Divisions.

9/12 This informative release announced that the J. P. Head Plumbing and Heating Company of Pasco had been awarded a contract to complete installation of North Richland's John Ball Grade School. Head's bid was $19,410.75.

9/16 Manager of the Hanford Works Manufacturing Divisions stated that the Project Engineering Division had been re-organized into three functional divisions.

9/23 The $450 suggestion award presented to M. L. Merkley by the Hanford Works Suggestion Committee was prepared for and distributed to the "General List" of media.

9/23 An informative release relating the progress made to date on Terteling's contract for paving and earthwork in Richland was mailed to the "General List".

9/24 It was announced that four businesses would go into operation in an investment business building in Richland's uptown commercial area on October 1.

9/28 Pre-construction cost estimated will be exceeded by only six-tenths of one per cent in the first phase of the Hanford Works construction program, it was announced by the Nucleonics Department Assistant General Manager. This release was based on a speech given before the Ellensburg Rotary Club.

Employee and Community Relations Division

9/28 An announcement was made that the Manager of G.E.'s Health Instrument Division would attend a three-nation conference on radiation tolerances at Chalk River, Ontario.

9/30 The appointment of A. J. Delong as Superintendent of the Community Public Works Division effective October 1 was revealed.

Spray painting of most Richland business houses was completed in September. Details about the painting were obtained for the local representative of the Spokane CHRONICLE.

The Assistant vice president of the Seattle First National Bank, who visited Richland last year and wrote the article about Hanford Works for the bank's monthly publication NORTHWEST INDUSTRIES, requested up-to-date facts and figures about the plant for use in an annual summary description of northwest industries. The information was accumulated and sent for that purpose.

When Mr. J. F. Huddle, a G. E. lineman, was severly injured through contact with a high voltage wire, the News Bureau provided newsmen with a description of the incident.

The News Bureau released several informative releases about National Fire Prevention Week during September. It also made arrangements for fire prevention photographs to be used as evidence of local observation of the week in a national contest. Arrangements were completed with radio stations KWIE and KPKW to publicize the week over the air.

In September photographs and news stories were distributed to local media concerning the "cut over" to a dial telephone exchange in Richland. The superiority of the dial exchange over the manual exchange was stressed.

A series of G.E. recordings, "Excursions in Science", were requested by the visual aids instructor of the Richland school system. A group of the recordings will be delivered to the schools through arrangements made during the month. The recordings will be made available to other schools in the vicinity by the Richland school system.

Extra copies of an issue of the MONOGRAM and of an issue of ADVENTURES AHEAD were placed in the five G.E. information display racks that are maintained by the News Bureau.

"Employee Information" - Special Programs

A promotion plan for presenting the new G.E. Group Health Insurance Plan to all Hanford Works employees was prepared through Special Programs. The promotion plan includes use of news stories in the Hanford Works NEWS and local newspapers, a new G.E. Group Health Insurance Plan booklet and a self-mailing promotion piece which will be sent to employees' homes, separate meetings for supervisors and non-exempt people during which details of the new Plan will be explained, preparation of a Plan Book for supervisors' use in presenting the new Plan to those whom they supervise, and posters.

Details of the promotion plan were worked out during September, and actual promotion activities are scheduled to start during the first week in October. Copy for the new G.E. Group Health Insurance Plan booklet was revised to make it applicable for use at Hanford Works. To expedite production of this booklet, artwork which was used in similar booklets in other Company plants was requested from the New York office and will be included in the Hanford Works booklet. Bids for the printing of this booklet were obtained by the Purchasing Division. The Walla Walla UNION-BULLETIN commercial printing shop was the successful bidder. Nine-thousand copies were ordered, rather than the 7,600 copies needed for the initial distribution to all employees, in that the cost of the addition 1,400 copies is negligible compared to the cost of this number of copies if ordered at a later date.

Copy page proofs of the forthcoming Hanford Works employees' manual, "You and G.E. at Hanford Works", were received from the printer, Craftsman Press of Seattle, and after proof-reading, were returned to the printer.

In line with the Charles E. Wilson 50th Anniversary celebration, Special Programs prepared the Suggestion System poster for use at Hanford Works during September. The Suggestion System theme for September, "Better Use of Minutes", was emphasized in the poster which was designed by the Community Relations Division commercial artist and printed in the 700 Area Printing Section.

Special Programs Section, in line with its function of handling community relations activities for Kadlec Hospital and the Medical Division, prepared a news release announcing the closing of the hospital in North Richland and the establishing of new medical-dental offices in the business section of North Richland. The story was released to local newspapers through the Nucleonics Department News Bureau and also appeared in the Hanford Works NEWS.

Special Programs assisted in the advance promotion activities for "National Diabetes Week", October 10-14, by preparing two appropriate news releases.

The first of a number of proposed informative articles on infantile paralysis was prepared for release during September. Arrangements were made with the Public Health Section that all future Public Health news releases will be prepared by Special Programs and released through the Nucleonics Department News Bureau.

A complete report on the "Adventures Ahead" promotion activities at Hanford Works was prepared by Special Programs during September.

Promotion of the Richland Child Safety Campaign during September included the preparation of five news stories, three pictures with captions, and a ten-minute radio script was presented during September over radio station KWIE. It featured four Richland School Boy Patrol Captains who presented their view of Richland drivers and the greatest traffic problems with which school boy patrolmen must cope.

The Richland Child Safety Campaign promotion also involved the preparation of Courtesy Parking Tickets which emphasize the need for driving carefully in Richland. The tickets feature a picture of a child and a Richland

patrolman about to cross a street. Printing of 1,000 of these courtesy parking tickets, which will be used by the Richland Patrol in cases of minor parking violations, was accomplished through the 700 Area Printing Section.

In assisting in the promotion of general community safety, news releases and pictures on the distribution of Emily Post's, "Motor Manners," were prepared by Special Programs for release through the Nucleonics Department News Bureau.

The supervisor of the Special Programs Section was appointed a member of the Employee and Community Relations Divisions Safety Coordinating Committee. In that capacity, he assisted in the formulation of plans for this Divisions' Safety Meetings during the forthcoming 12-month period, and in establishing a Safety Council.

The Special Programs supervisor also attended the September meeting of the Safety Program Committee and served as its secretary.

Assistance was rendered the Community Fire Division committee in charge of Fire Prevention Week activities within the community of Richland. Special Programs activities during September included: writing promotion material to be printed on pay envelopes for both exempt and non-exempt employees; assistance in planning and preparing copy for posters; planning publicity schemes involving participation of local civic groups; planning of displays; and general assistance in the planning of Fire Prevention Week programs in Richland schools.

"Employee Information" - Works NEWS

During the month of September, five issues of the Works NEWS were published with a total of 7800 being printed each week.

In the first issue of the month on September 2 the commemoration of Charles E. Wilson's 50th anniversary in the Company was announced by Vice President G. R. Prout in a front-page box. Likewise in observance of the same, an editorial appeared on page 2. In addition, a story appeared announcing that identical holiday, vacation, and absence benefits are applied to all Hanford Works non-exempt people. On the seventh page was run a safety puzzle entitled "What's Wrong with this Picture?" containing 61 unsafe acts, which was picked up by the Schenectady office and was distributed in mat form to all Works NEWS editors. Since its appearance, requests have been made from various Works NEWS editors for key sheets identifying the hazards in the picture, which were sent to them by the editor. Additional requests were made by Hanford Works people who desired to use them at safety meetings conducted throughout the plant. Inserted in the same issue was a biographical sketch of Charles E. Wilson. A column entitled "Security Slants" which will appear in all future issues was announced in this issue. The new column will be written by a member of the Security Office.

In the September 9 issue was contained a lead story announcing the Nucleonics Department would make a concerted effort during September, October, November, and December to obtain more worthwhile suggestions. Suggested methods were mentioned of possible ways to best utilize the

September topic, "Saving Minutes". A column entitled "You and Your Daily Diet", which deals primarily with the proper diet as the sane approach to promotion of good health, appeared in this issue as the start of four installments. With the windup of the softball season, sports writers for men and women bowlers introduced their columns again this year.

The start of the plant Nucleonics Department safety drive was announced in the September 16 issue. The second lead story which was originally intended to announce that Hanford Works people had but 56 days to go for the General Manager's safety award, was replaced just prior to press time with a story that a major injury occurred that day. Additional publicity was given the job operations improvement as a minutes saver in this issue.

In the September 23 issue an announcement was made of the highest suggestion award being made since the start of the suggestion system at Hanford Works. Included in the story was a statement by the Suggestions Committee Secretary to the effect that this suggestion was the type encouraged by Hanford Works people to submit during the emphasis on the better use of minutes, manpower, machines and materials. Considerable publicity was given the opening of the Adult Evening Courses at the Columbia High School with a full-page list of all courses and subject matter. The Works NEWS is giving advance publicity to the observance of National Fire Prevention Week during the month of October with cartoons, editorials and articles.

Statements appealing to Hanford Works people to give to the Community Chest by A.E.C. and G.E. Managers were included in the September 30 issue. An additional story announced that solicitation through the plant would start on its day of publication. Supplementary publicity for the Community Chest drive was given through editorial cartoons, picture of all drive captains and a special two-page insert made up by the special feature writer the the Women's Page. A special feature was included dealing with the filming of a newsreel on Security Patrol activities at Hanford Works with pictorial layout.

During the month a letter was submitted requesting the start of a column in October entitled "Can You Tell Me?" This column will deal with questions asked by employees on rumors and other matters affecting them, with answers to each question given by the authority responsible.

"Employee Information" - Women's Features

Three women's pages appeared in the Works NEWS issued during the month of September. On September 2, a feature appeared on "Pick Up Patterns" which were distributed to readers upon request. Ninety patterns were mailed out to readers as a result of this article. Also included in the feature were recipies and a picture of the G.E. roaster at a picnic. A fasion note on a multi-purpose jacket was added along with G.E. Consumer's Institute hints on laundry helps.

On September 16, the Women's page feature covered the fun to be found in sewing. A girl in the dormitory was shown working on her own clothing, pointing out that there is art and craftsmanship to be found in this type of work. A recipe for "Perfect Apple Pie" was printed and a short article about the G.E. magnet that automatically lifts the lids off cans as they are opened.

On September 23 the careers of Housemothers who work in the Hanford Works women's dormitories were discussed and elaborated upon. An informative story was printed on classes of interest to women which are offered in the Columbia High Adult evening school. Quickie lunch ideas were added from the Consumers Institute and a crochet pattern as offered.

Recreation features included a story about possible one-day trips which could be made to nearby points over Labor Day, and a feature on musical organizations in Richland with membership open to anyone wishing to sing. As a result of a short article announcing that additional "Canasta" rules were available, 70 sets of canasta were mailed free of charge to readers.

On September 30 a two-page insert was prepared and appeared with the Works NEWS. Sixteen photographs and captions covering the various Richland Community Chest Activities were used along with a 500 word editorial. The idea was to better acquaint Works NEWS readers with the work done by the Community Chest. One thousand extra copies of the insert were turned over to the Community Chest committee for use in their fund campaign.

Every week a column appears in the Works NEWS listing rides or riders seeking transportation to various week end and vacation spots. Two hundred fifty-nine requests were received during the month of September for rides or riders to the following destinations: Missouri, Kansas City, Denver, New York, Salt Lake, San Francisco, Los Angeles, Alabama, Seattle, Michigan, Cleveland, South Dakota, Nebraska, Illinois, Texas, Houston, Wyoming, Oklahoma, Portland, Virginia, West Virginia, St. Louis, Chicago, Yakima, Grand Coulee, Prosser, Spokane, North Carolina, Coeur d'Alene, Wenatchee, Ellensburg, and Ritzville.

A 2000 word article on construction of New Richland Churches was finished with photographs of churches now in progress of building. This article was written as a News Bureau release.

A photograph was secured and an article written about H. L. Henry, Assistant Area Supervisor for the "P" Division in 100-D Area, at the request of the Geneva Times, Geneva, New York.

Labor Relations and Wage Rates

Labor Relations

The activities of this division have been 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.

Office Employee's International Union

On September 1, 1949, a letter was received from the National Labor Relations Board stating that the petition for investigation and certification from the Office Workers Union had been withdrawn without prejudice.

Miscellaneous Union Activity

On September 9, 1949, this division received a notice from the N.L.R.B. of a petition for the investigation and certification of the Technical Engineers & Architects Association and the Building Service Employees Int'l. Union.

On September 26, 1949, a petition was received from the N.L.R.B. in regard to the Int'l. Brotherhood of Teamsters, Chauffers, Warehousemen and Helpers of America.

Guards Union

A Decision and Direction of Election was received from the N.L.R.B. on September 16, 1949, which stated that all guards, including village patrolmen, constitute a unit appropriate for purposes of collective bargaining.

It further stated that an election should be conducted within thirty days from September 14, 1949, the date of the Decision. An appeal of this Decision was considered but after it had been determined that the only recourse would be through the courts, it was decided that nothing could be gained by further delaying the election through litigation.

A meeting was held on September 27, 1949, with Mr. Rasmussen of the N.L.R.B. and Mr. Steinhaus of the Guards Union present. The election was scheduled for October 11 and 12.

Meetings were also held with Mr. Gese of the N.L.R.B. regarding petitions of Technical Engineers, Building Service Employees, and Teamsters Union. After he conferred with the Teamsters' representatives, we were advised that they were withdrawing the petition covering ambulance drivers and orderlies in the hospital. No agreement was reached with respect to petitions of Building Service Employees and Technical Engineers.

All seniority lists have now been received and transmitted to the H.A.M.T.C. Certain changes have been recommended by the H.A.M.T.C. and are being investigated.

Revised stewards lists were received from the H.A.M.T.C. and were transmit-

[redacted]

Twenty-six grievance reports were received during the month, bringing the total received since the bargaining unit was established to 114:

Manufacturing - Electrical	4
Manufacturing - Instrument	10
Manufacturing - Maintenance	6
Manufacturing - "S"	2
Manufacturing - Transportation	3
Manufacturing - "P"	1
Total	26

Employee grievance reports were regarding the following subjects:

Frozen Job & Rate	4
Job Classification	3
Jurisdiction	1
Rest Periods	1
Shift Assignment	1
Supervision	1
Upgrading	2
Wage Rates	10
Work Assignment	3
Total	26

The status of all grievances received to date is as follows:

Settled satisfactorily, Step I	33
Not Settled satisfactorily, Step I	81

Of the 81 grievances not settled at the Step I level, 44 had been settled satisfactorily at the Step II level. Only 5% of the total grievances received to date have been submitted by employees outside the bargaining unit.

Meetings:

Three Weeks Vacation

At the September 9 meeting with the Council Grievance Committee the proposed three weeks vacation plan was described, which would enable employees whose homes are located a considerable distance from Richland to take three weeks vacation during the year following a year in which they were eligible to take a two weeks vacation, but elected to defer the second week until the following year. The contingencies of the plan were also explained.

Wage Rates

During the period September 1, 1949, to September 30, 1949, employees in the Wage Rate Section were involved in work relative to conversion of rates and classifications from the old classification and rate system to the new. On September 10, 1949, information on retroactive wage rates and classifications for employees of all divisions other than the Manufacturing Division (delivered in August) was delivered to the Payroll Division.

Changeover forms for each individual employee affected by the conversion of rates from the old to the new structure, was furnished to the divisions, showing the employees rate and classification as of April 11, 1949. Attached to each individual sheet was a form showing all changes between the periods April 11 to August 15, 1949. A total of 4,204 individual employees were affected.

Many individual jobs were studied and classifications and rates determined. These studies involved numerous contacts and discussions with the supervisors.

Meetings have been held with supervisors to explain the wage system changeover procedure and to give a detailed resume of new rules and procedures arising out of the change in the system.

The following reimbursement authorization was approved by the Atomic Energy Commisssion:

Reimbursement Authorization No. 65, approved September 9, 1949, granting approval of additional unit classifications, rates and progression schedules as follows: Cement Finisher-Plasterer-Journeyman, Trainee and Helper, Boilermaker - Handyman; Plumber-Steamfitter - Handyman; Pipecoverer - Handyman; Packer, Seamstress-Finisher; Oiler; Laundry Truck Swamper; and Industrial Truck Operator - Heavy.

The following reimbursement authorizations were submitted to the Atomic Energy Commission for approval:

Request for reimbursement authorization submitted on September 21, 1949, relative to a change in a unit transfer rule involving reimbursement.

Request for reimbursement authorization submitted September 13, 1949, asking for a rate increase for Community and Area Fire Lieutenants and Captains.

Request for reimbursement authorization submitted September 13, 1949, requesting approval of a change in the working schedule of the Community Firemen from a rotating shift system of operation to a two-platoon system.

STATISTICS

Transfers from Weekly to Monthly Payroll	6
Transfers Approved	37
Job Reclassifications Approved	182
Automatic Increases	208
Merit Increases	6

COMMUNITY DIVISIONS

SUMMARY - SEPTEMBER, 1949

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End of Month
Community Administration	6	6
Community Accounting	27	28
Community Public Works	438	419
Community Safety	3	3
Community Commercial Facilities	16	15
Community Housing	39	40
Community Fire	132	133
Community Patrol	84	83
Community Activities	18	12
	763	739

Changes in the force of the Community Divisions during the month of September, 1949, were as follows:

	Reduced	Increased
Community Administration	-	-
Community Accounting	-	1
Community Public Works	19	-
Community Safety	-	-
Community Commercial Facilities	1	-
Community Housing	-	1
Community Fire	-	1
Community Patrol	1	-
Community Activities	6	-
	27	3

TOTAL DECREASE, September, 1949 = 24

GENERAL

Appropriation Request No. 66, "Cleaning of Coal Fired Furnaces", was approved by the Appropriations and Budget Committee and the informal Letter Request forwarded to the Commission.

Appropriation Request No. 61-R, "Maintenance of Prefab Roofs", was approved by the Appropriations and Budget Committee and informal Letter Request forwarded to the Commission.

Project C-345-R, "Attic Duct Insulation, Precut Houses", was approved by the Commission during the month.

A total of twenty-two fire alarms was answered - six in North Richland and sixteen in Richland.

Two hundred fifty applications for housing remain unfilled, which is an increase of forty.

Six new business establishments were opened for business during the month of September.

No appreciable changes were made in the activities of any of the Community Divisions during the month.

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10/11/49

COMMUNITY DIVISIONS
PUBLIC WORKS DIVISIONS
SEPTEMBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	Exempt	Non-Exempt	Total
August 31, 1949	57	381	438
September 30, 1949	56	363	419

Personnel Changes made during the month:

New Employees		None
Transfers from Medical		1
" Maintenance		4
Transfers to Transportation		1
" Maintenance		2
" Electrical		2
" Power		2
" Project Engineering	1	1
Terminations		14
Sick Leave		1

GENERAL

The inventory of materials located in the Maintenance Section has been completed and accounts established by the Community Accounting Division for the different types of materials. A procedure was written and approved to be effective September 26, 1949 to account for withdrawals from these accounts. A provision made in connection with the inventory accounts was that the account is to be reconciled by total valuation only and not by unit. This procedure will enable us to more accurately charge materials to jobs with little increase in detail required.

PROJECTS

C-254 - Painting Exterior of 514 Permanent Houses. Modification of directive to extend completion date and increase amount of subcontract was approved by AEC September 20, 1949. Project is approximately 82% complete.

C-274 - Central Storage for Fuel Oil. Design and cost estimate are complete. Request for extension of completion date to be submitted for approval.

C-282-R - Richland Village Dust and Pollen Control Program. Work is progressing satisfactorily. A release to the field will be made on street tree planting for work to start by October 15, 1949.

PROJECTS (Continued)

C-263-A, B, C and D - New Commercial Areas. The unit bid contractor started paving on September 15 on Haines Avenue and then over to the North Commercial Area which is approximately 80% complete. Inspection is being followed by three members of the Engineering Section.

C-345 - Insulation of Heat Ducts, Precut Houses. The directive date was September 2, 1949. Specifications were approved by the AEC September 20, 1949. Project was submitted to Design and Construction to obtain bids.

C-348 - Asbestos Siding Administration Building No. 703. Project proposal was revised September 6, 1949. Submitted to AEC for approval September 22, 1949.

"S" PROJECTS

147 - Addition to Fire Station No. 1. Design, plumbing and heating is complete. Carpentry and electrical is 80% complete.

149 - Addition to Fire Station No. 2. Design, plumbing, heating and air conditioning completed. Carpentry and electrical is 95% complete.

217 - Steam Line to Multiple Apartment. Design complete. Invitation to bidders issued September 27, 1949. Bid to be opened October 3, 1949.

229 - Furnace and Flue Cleaning - Conventional Houses. Reason sheet for appropriation request submitted for AEC approval September 22, 1949. Specifications approved by GE September 16, 1949.

240 - Roof Repair and Maintenance - Prefabs. Reason sheet for appropriation request submitted for AEC approval September 22, 1949. Specifications approved by GE August 25, 1949.

ENGINEERING SECTION

Organization and Personnel:

Number of employees on payroll:	Exempt	Non-Exempt	Total
August 31, 1949	16	11	27
September 30, 1949	16	10	26

Personnel Changes during the month:

Terminations	1

General

List of slow moving store's stock items were circulated for determination of our present and future requirements.

Numerous inspections were made with the Housing Division personnel to view various drainage problems.

Regular field inspections were made to insure compliance with building permit requirements.

ENGINEERING SECTION (Continued)

The following routine items were processed during the week:

Purchase Requisitions	49
Store Stock Requests	20
Store Stock Adjustments	4
Purchase Orders Expedited	14

During the month a total of 75 Engineering Service Requests were completed.

Technical information and instructions were furnished the following prospective facility operators and schools:

Proposed Radio Station
Washateria located in Central Commercial Area
Cafeteria Addition to Sacajawea School
Conversion of Village Food Store building to school offices

Administration engineering work in connection with roads, streets and grounds maintenance performed during the month was as follows:

(a) Field work on Duane Avenue was completed in prepartion for a project proposal.

(b) Traverse, topog, profile and cross-sections were run on the Casey Street improvement.

(c) A map was prepared to show the irrigation lines that will be under the dike.

(d) Assistance is being furnished to field crews and recommendations made to correct various drainage and grading problems.

Alteration permits were approved for the following during the month:

Richland Concrete Company	Install Motor	September 23, 1949
Sowell's Fountain Lunch	Install Sign	September 20, 1949
H.A.M.T.C.	Alterations to 108X	September 7, 1949
Robley Johnson	Alterations to Dark Room	September 20, 1949

Alterations completed during the month were as follows:

Safeway Store	Additional Floor Space
Richland Concrete Company	Install Motor
Sowells' Fountain Lunch	Install Sign
Seattle Tent and Awning Co.	Neon Sign
Desert Inn	Construct Private Dining Room and Bar
Village Pharmacy	Rearrange Fountain, Install Neon Sign

ENGINEERING SECTION (Continued)

Miscellaneous work done on leased areas include the following:

(a) Lot lines on Stevens were re-established and pipe markers set.

(b) Boundary and lease was computed and prepared for the Northwest United Protestant Church.

(c) A lease was prepared for multiple business building, Morgan and Olberg Drug Store and Parker Hardware.

(d) Preparing of map and cost for Masonic Temple location was started.

(e) Area for Junior Rider's Club was surveyed and plot plan made.

(f) Excavation permits issued for the month of September totaled 13.

MAINTENANCE SECTION

Organization and Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
August 31, 1949	18	158	176
September 30, 1949	18	158	176

Personnel changes made during the month:

Transfers from Maintenance Division	4
Transfers to Maintenance Division	1
" Electrical Division	2
Sick Leave	1

General

During the month 70 renovations were completed of which 49 were permanent type houses and 21 were prefabs. Seven of the permanent type houses were complete paint jobs. Thirty-two were partially painted, and 10 were cleaned only. Three of the prefab renovations were complete paint jobs, 14 were partially painted, and 4 were cleaned only. There were on hand at the end of the month 20 orders for renovations not completed.

There were completed during the month 1759 Service Order repair calls. They are as follows: Housing 1576, Concessions 53, Civic Activities 12, Patrol 8, Fire 3, Public Works 31, and General 76.

Service orders on hand at the end of the month are: Plumbing 25, Electrical 134, Glazing 10, Locksmith 15, and Carpentry 42.

MAINTENANCE SECTION (Continued)

A summary of shop work performed for housing included repair of 5 refrigerators, 8 ranges, 214 screen doors, 52 table top linoleum replacements, 15 floor linoleums, installation of tile board in 11 bathrooms, repair of 39 roofs, recovering of 2 davenos, and 15 chairs, repairing of 17 chairs, 10 awnings, and 2 cushions. Other work as replacements in homes included: 7 laundry trays, 8 bathtubs, 8 hot water heaters, 8 kitchen sinks, and 1 wash basin. Two shower stalls were repaired, 52 smoke pipes were replaced from furnace to chimney, rain gutters were made and installed over doors on 50 houses, and 50 oven racks were made for replacements.

Pre-heating season inspection and repair to oil furnaces is 95% complete and coal furnaces is 50% complete. Further attempts to service these homes will not be made except on a Service Repair call basis, to which work all furnace repair manpower is now directed. As these furnaces are now in use it is expected any difficulties of operation experienced by the tenants will be promptly made known by them to Tenant Service.

The oil and coal furnace repair work on Tenant Service orders is handled now in the same manner as all other such repair orders and cost figures on this type of repair will become available as of October 1, 1949.

A 4" valve at the steam pit in the men's dormitory area has been installed preparatory to a contractor's performance of the work on Community Divisions' Project No. S 217. "The extension of steam lines to serve the Multi-Unit Apartments."

The exterior painting program in Division I has progressed as follows: 58 houses completed (shakes sprayed, and vertical siding and trim brush painted 2 coats), 23 additional houses have been completed on shake spraying only. Work in Division I will continue as long as weather will permit.

Interior painting in September consisted of only 24 bathrooms on which it was necessary to patch and spot paint.

The Interior Painting Program of homes for the winter season is now being arranged so that a shift of forces can be made when inclement weather arrives.

The interior painting with all necessary preparatory carpentry repairs for Dorm M-15 is 98% complete.

The exterior painting program on Commercial facilities is now complete excepting the Richland Laundry which is 40% completed. In addition to the 23 facilities reported last month, 11 have been completed this month.

Steel welded body refuse wagons are now complete for orders on hand excepting one which is in process. Eight have been delivered for use at new facilities.

Work for Stores Division has included preparation for shipment of 57 railroad cars of lumber, miscellaneous equipment and material.

MAINTENANCE SECTION (Continued)

The periodical inspection was made on the fire alarm system at Kadlec Hospital and Public Health Building. Small stones were found in the Public Health Building fire alarm system and a strainer was installed to prevent reoccurrences.

The alterations and addition to the irrigation system at the cemetery this month and all existing risers located and repaired where necessary.

The installation of safety steel tread on the Bailey Bridge was completed September 30, 1949.

Reinforcing of the hutment floor of the 705 Building is 90% completed.

A complete survey of the electrical condition of the Pasco Depot has been completed. All possible repairs were completed. Others are being expedited with responsible groups, if not already in progress.

Economics Effected

(1) Use of the newly acquired "Drive it" power tool is expected will considerably reduce man hours on jobs involving anchoring any construction members, pieces, or equipment to concrete. Preliminary safety rules governing the use of this tool have been prepared and are held for final writing pending discussions of these rules in safety meetings.

(2) Experience has proved the comfort air washer to be practically maintenance free and therefore, when replacement of one desert cooler on the 760 Building was required, it was replaced with this trouble free type. It is planned that the other cooler in this building will be replaced in a like manner.

(3) One plumber - pipefitter was removed from the Tenant Order repair crew (transferred to Maintenance Division) and not replaced. Work here was reduced as a result of new house leases; the work backlog prior to that new lease date required keeping this employee on this work until this time.

(4) One electrician was upgraded from trainee class to journeyman as a result of hiring in the Electrical Division. Electrical work on tenant service orders is less in amount so that five men do what six were doing before. A transfer of one electrician from the tenant service repair crew to regular work order work made it possible to release this employee without replacement. This may also be attributed to effect of the new leases.

(5) Considerable costly maintenance is being eliminated by the installation of this new air conditioning units in the surgery wing of the Kadlec Hospital.

Community Public Works Division

UTILITIES SECTION

Organization and Personnel:

Number of employees on payroll:	Exempt	Non-Exempt	Total
August 31, 1949	9	60	69
September 30, 1949	9	58	67

Personnel changes made during the month:

Transfers to Power Division	2

Steam

On September 11, 1949 a second boiler was put in service at the Central Steam Plant to handle the added steam load due to increased heating steam requirements.

A considerable amount of maintenance on the Steam Distribution System has been required during the month. To facilitate this maintenance work it has been necessary to arrange for several minor steam shutdowns.

All overhaul work on boilers has been completed and all boilers are ready for service.

Steam Generated - September	15,972	M. lbs.
Coal Consumed - - September	2,458	M. lbs.
Coal in Storage - September 30	8,538.9	M. lbs.

At the 1131 Garage boiler house, operation of one boiler during the night shifts to supply heating steam to the garage building, was commenced on September 13, 1949.

On September 16, 1949 operation of a boiler at the Multiple Apartments to supply heating steam in the early morning and in the evenings each day was started.

Water

A. Domestic Water: On September 5, the windings on the "E" well pump motor and #1 chlorinator booster pump motor at 3000 Area burned out. This was caused by incoming power being single phased by a line disconnect going out and motor protection relays failing to operate. An investigation as to what caused motor protection to fail was made. It was found that the failure of the chlorinator booster pump motor protection was due to contacts being corroded. The switch controls on this pump are housed in the chlorinator room and are very frequently subjected to chlorine gas which is very corrosive. A program has been initiated for frequent inspection and cleaning of these controls. On inspection of the motor protection at the "E" well pump it was found that oversize heaters had been used.

UTILITIES SECTION (Continued)

This condition is to be corrected before the motor is returned to service. The motor for the chlorinator booster pump has been repaired and returned to service. Repairs to the "E" well pump motor has been completed and it is expected that the motor will be re-installed and returned to service in the near future.

Some water main leaks have been repaired during the month and several domestic water service connections to new Commercial Facilities were made.

DOMESTIC WATER SYSTEM

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	106.3666	3.546	206.9686	6.899
North Richland	117.9730	3.932	53.1712	1.772
Columbia Field	73.0705	2.436		
300 Area			36.8528	1.228
Total	297.4101	9.914	296.9926	9.899

B. Irrigation: Operations were normal throughout the month. On September 12, all irrigation stations were re-scheduled to be operated on a daylight basis only.

C. Pasco Warehouse Area: It has been necessary to make a considerable amount of repairs to the wooden water mains in the area. Both on the domestic and fire protection water systems. One rather severe break on the domestic water system was repaired during the month.

Sewerage

On September 8, the pump discharge sectionalized valve on the 30" forced main at the Sewage Lift Station became fouled and it was necessary to divert all sewage flow through the 14" forced main and subsequently through the #1 Disposal Plant. It was necessary to schedule maintenance work on this valve on the 12 - 8 Shift when sewage flow is at its minimum. On inspection the valve gate was found to be broken. The valve gate was removed and the valve gland blanked off. A new valve will be installed as soon as it can be conveniently arranged.

At the #1 Disposal Plant the orifices on the biofilter distributor arm were renewed during the month. The old orifices were badly worn, allowing uneven distribution over the biolfilter bed.

Total Sewage Flow Million Gallons	Average Daily Flow Million G.P.D.	Average Rate Of Flow Gals. Per Min.
105.200	3.507	2435

Community Public Works Division

LABOR SECTION

Organization and Personnel

Number of employees on payroll:	Exempt	Non-Exempt	Total
August 31, 1949	10	150	160
September 30, 1949	10	135	145

Personnel changes during the month:

Terminations	13
Transfers to Maintenance Division	1
" Project Engineering	1
" Transportation	1
Transfers from Medical Division	1
On Loan	3

General

Garbage and refuse collections continued as usual. Residential trash collection Wednesday of each week. Garbage collection for residential areas made twice weekly.

Garbage and trash collection is made in commercial areas daily except Sunday. Five new facilities were added to the commercial routes during the month. The above additions have not necessitated any additional man power.

Work on Project C-282 is progressing favorably. Seeding of area at Hetrick and Davison completed. Work continued on maintenance of Duane Shelter Belt.

Tree surgery and maintenance of Village trees and shrubs continued during September.

Seventy-seven yards of top soil delivered to Village Tenants at work order request from Tenant Relations during September.

Lawn irrigation to 181 acres of public lawns continued. This group is also responsible for the maintenance of vacant housing lawns in Village, which averaged 35 houses per week in September.

Mowing of public areas continued as usual throughout the month.

Eight shipments of personal furniture were handled. Four men required for handling government furniture and fixtures during September.

Walks and steps raised on A & J and Ranch type houses.

LABOR SECTION (Continued)

All septic tanks are being pumped out prior to winter weather.

Pipe along 3000 area ditch is being installed.

Road and street maintenance is progressing favorably.

Road materials used during the month:

Bitumuls (Emulsified Asphalt)	660 Gals.
Pre-mix Streets and Roads	295 Tons
3/4" Minus Crushed Gravel	711 Tons
Pit Run Gravel	475 Tons
6" Invasion Pipe for drainage	138 Feet
10 R.R. Ties - Garmoe Parking Lot	80 Feet
8 R. R.Ties - Paint Hut - Casey	64 Feet
200 R.R.Ties - Public Health Parking Lot	1600 Feet

Coal delivered from 700 Area Storage:

1131 Garage	65,175 Pounds
#2 Fire Station	4,000 "
1182 Building	5,000 "
Pasco T-201	3,000 "
Pasco T-54	1,000 "
700 Area Stock Pile from 413 Geo.Wash Way	5,000 "
	83,175 Pounds

COMMUNITY COMMERCIAL FACILITIES DIVISION

September, 1949

ORGANIZATION AND PERSONNEL	SEPTEMBER
Number of employees on payroll	
Beginning of month	16
End of month	15
Net decrease	1

COMMERCIAL FACILITIES

The following figures indicate trends in commercial activities as related to various basic items:

	August	September
Cafeteria meal customers	51,545	45,443
Percent of room-day occupancy - Desert Inn	64%	56%
Gallons of ice cream sold	6,168	4,274
Carnation milk & cream deliveries	73,249 Gallons	67,418 Gallons
Darigold milk & cream deliveries	2,980	3,068
Morning Sun Dairy milk and cream deliveries	37,315-Units	11,201 Gallons
Theater customer count	41,754	44,436
Gallons of gasoline sold	144,294	152,880

Total number of Commercial Facilities Operators' employees, full and part-time as of September 30 - 960. This shows a net decrease of 3 under last month's 963.

Northwestern Fuel Company opened for business on September 1.

Binyon Optometrists sublet space to the New York Life Insurance Company.

An Alteration Permit was issued to Robley L. Johnson on September 15, to make alterations on his darkroom. Work to be done at the expense of the Operator.

Remodeling of the building occupied by Carnation Milk was started September 15. Work is being done at Operator's expense.

Ernie's Restaurant and McVicker's Jewelry held their formal openings on September 16.

On September 19, an Alteration Permit was issued to Richland Concrete Company to install a 75 h.p. motor to operate a hoist with a drag line.

Wascher's Service Station opened for business on September 27.

Densow Drug opened for business on September 30.

COMMUNITY COMMERCIAL FACILITIES DIVISION

Alteration Permits were issued for installation of neon signs in the following facilities: Hanson Enterprises, Inc. - Sowell's Fountain Lunch

American Fuel Company opened for business in temporary quarters on September 15.

The following routine items were processed:

Work Orders	30
Patrol Orders	42
Back Charges	5

Klopfenstein's purchased Government-owned equipment used by them in their store.

CONTRACTS AND NEGOTIATIONS

Supplemental Agreements were entered into with the following firms:

Carnation Company. Supplemental Agreement #II, dated September 6, 1949 - authority for alteration and modernization of existing facility building.

Village Pharmacy. Supplemental Agreement #II, dated July 1, 1949 - amendment of basic Agreement to provide for fuel allowance to Operator.

Campbell's Food Market. Supplemental Agreement #II, dated July 1, 1949 - amendment of basic Operating Agreement to provide for fuel allowance to the Operator.

Amendment to Sub-Operating Agreement, dated September 1, 1949, was entered into between Greyhound Post Houses, Inc., and F. H. Moller and Ray Moller, Co-Partners, covering the establishment and operation of a Hertz Drive-Ur-Self auto rental service.

Hanson Enterprises, Inc. was authorized to sublet space to Sportlets, Inc. Sportlets, Inc. was formerly subleasing space in Frank Berry's Sporting Goods Store.

Hanson Enterprises, Inc. was authorized to sublet space to Samuel J. Patterson for Public Accountant and Income Tax service.

Commercial Facility Lease, dated September 1, 1949, was entered into with The Scott Publishing Company for the construction, maintenance and operation of an office for acceptance of subscriptions, receipt of classified advertising, collection and transmission of news stories, service of display advertising for merchants and distribution of newspapers to downtown street sales boys.

A hardware store award was made to Willard Parker, 7th and Pacific, Bremerton, Washington. Mr. Parker is expected to construct his own building.

Award of an automatic laundry building, with additional space for subletting, was made to Hugh Cannon and Chalmer Joseph, General Deliverly, North Richland, Washington. Messrs. Joseph and Cannon are expected to construct their own building.

COMMUNITY COMMERCIAL FACILITIES DIVISION

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:

Air Conditioning & Automatic Heating Shop
Auto Accesscries
Auto Agency
Beverage Store
Book & Staticnery Store
Drugstore
Dry Cleaning Shop
Electrical Appliances Store
Floor Coverings & Draperies Store
Fur Store
Gift Shop
Leather Goods & Luggage Store
Paint and Wallpaper Store
Photograph Supply Store
Self-Service Laundry
Sewing Center
Sporting Goods Store

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

September 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll	September
Beginning of month	39
End of month	40
Increase	1

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	T	Pre-Cut	Ranch	Prefab	Apt.	Tract	Total
Operations	2212	265		379	846	1133	64	40	4939
Facilities	144	6		29	82	130	2	10	403
Government	102	32		11	27	27	3	4	206
Kellex Corporation		5		2		2	1		10
Morrison-Knudsen	2			1					3
Atkinson Jones	13	17		6	13	3	1	1	54
J. Gordon Turnbull	1	2		4	3	9	1		20
Giffels & Vallet	2			2	7	7			18
J. A. Terteling & Sons			10	1	2				13
Newberry Neon Electric	1	1		2		1			5
Urban, Smythe & Warren	2	1		1	1	1	1		7
Graysport Construction								1	1
Newport-Kern Kibbe								1	1
Vernita Orchards								6	6
TOTAL HOUSES OCCUPIED	2479	329	10	438	981	1313	73	*63	5686
Houses utilized for special purp.								1	1
Houses assigned (leases written)	1	1		1	1	1			5
Houses assigned - awaiting tenants	20	3		11	18	18	1		71
Government houses - unassigned								**36	36
TOTAL HOUSES	2500	333	10	450	1000	1332	74	100	5799

* Occupancy figure includes 4 houses occupied by Bonneville Power in Priest Rapids and White Bluffs.

** This includes 32 tract houses boarded up for salvage.

1.

COMMUNITY HOUSING DIVISION

	Begin Month	Moved In	Moved Out	Month End	Difference
Housing Turnover During Month					
Conventional Type	2456	65	42	2479	Plus 23
Block Type	326	10	7	329	Plus 3
T Type	9	2	1	10	Plus 1
Precut Type	436	21	19	438	Plus 2
Ranch Type	973	41	33	981	Plus 8
Prefab Type	1299	55	41	1313	Plus 14
Apartments	72	4	3	73	Plus 1
Tract	65	0	2	63	Minus 2
	5636	198	148	5686	Plus 50

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	13	485	31	516
Men - Unoccupied				
Women - Occupied	15	*474	158	632
Women - Unoccupied				

Women's Dormitories occupied by:	
G. E. Office	1
Education	1
Apartments	1
	31

* 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	55
Exchanged houses	20
Moves (within the Village)	36
Total new leases signed	198
Turnovers	4
Houses sent to renovation	62
Houses assigned "As Is"	48
Terminations	82
Total Cancellations	148
Applications Perding	250

Tract houses J-708 L-856, K-719, K-753, K 790, K-786, K-741 formerly occupied by Graysport Construction Company were turned over to the Atomic Energy Commission for sale.

On September 29, 1949 a letter was sent to the fifteen occupants of Dormitory W-17 notifying them that the dormitory was to be vacated by October 14. Present plans call for this dormitory to be converted to apartments.

TENANT RELATIONS

The processing of Patrol Orders, Work Orders and Backcharges during the month is as follows:

	Issued from Aug. 26 to Sept. 29	Incomplete Sept. 29	Issued Previous Month
Service Orders	1905	226	2094
Work Orders	330	980	350
Backcharges	212	9	170

81 Conventional houses exterior sprayed shakes as compared to 15 the previous month.

58 Conventional houses exterior painting completed as compared to 20 the previous month.

24 Bathrooms repaired and spot painted.

240 Home fire inspections were reported and processed. 755 homes were visited.

2376 Pounds of grass seed were issued as compared to 1078 the previous month

ITEMS OF INTEREST

	Total Outstanding	Total Outstanding Previous Month
Laundry tubs	52	46
Bathtub replacement	43	43
Faucets	10	14
Sink Linoleum Replacement	80	150
Bathroom painting (tileboard)	66	10
Window Glass	10	24

Alteration permits issued during the month of September, 1949 totaled 88 as compared to 195 during the month of August.

Automatic washers	15	Sanding floors	4
Cooling pads in furnace	3	Construction of driveway	5
Construction of fence	11	Air conditioners	8
Construction of toolhouse	7	Construction of patio	1
Additional wiring	10	Construction of outdoor fireplace	1
Basement excavation	11	Install furnace stoker	1
Basement partitions	4		

788 Inspections were made during the month of September 1949. A breakdown of the inspections shows the following distribution:

Shades	92
Linoleum	70
Grass Seed	112
Sidewalks	31
Bathtubs	33
Topsoil	56
Walls	49
Lot Lines	47
Floors	19
Leaking basements	14
Miscellaneous	265

TENANT RELATIONS

In addition to the above tenants were contacted in regard to the exterior painting program and parking on lawns and seeded areas.

DORMITORY PROGRESS REPORT FOR SEPTEMBER, 1949.

Replacement of damaged guard posts completed during the month.

Some trimming of the dormitory grounds has been completed.

Sanding work is going ahead satisfactorily. M-13 will be completed shortly.

A new system for distribution of supplies has been put into operation All supplies have been transferred to the warehouse and are withdrawn as needed

Linoleum in laundry rooms is being replaced under washing machines. Water repellant paint is being put on linoleum under washing machines

Further consideration is being given to similar installation in shower rooms to eliminate damage from water to other parts of buildings.

M. S. WAREHOUSE MONTHLY REPORT FOR SEPTEMBER, 1949.

Orders handled for September 1949		Items
Recall orders	19	4045
Delivery orders	10	19
Dormitory Exchange Orders	14	36
Total Orders	43	4100

Received from Maintenance	45
Sent to Maintenance	39
Three-burner ranged exchanged in Village	6
Refrigerators exchanged in Village	8
Trips to Pasco	5

Tenant Relations Store:

Orders Disbursed	345
Items Disbursed	3079
Value	$18,480.14
Items Received	10,768
Value	$18,988.63

TOTAL M. S. WAREHOUSE INVENTORY $140.84[illegible].09

COMMUNITY SAFETY DIVISION
SEPTEMBER 1949

ORGANIZATION AND PERSONNEL

Number of employees on Payroll	September
Beginning of month	3
End of month	3

GENERAL

Fire Prevention and Protection survey is now underway. Work Sheets are in the hands of Commercial Facilities for the purpose of getting basic data on all Government-owned commercial buildings, evaluation, etc. As soon as these are completed, they will be forwarded to the Fire Prevention and Protection Section for completion.

Data is being gathered to be used in the Traffic Survey. This survey is planned to get underway around the 1st of November. A Mr. L.A. Bowman from Oak Ridge is due in Richland, October the 14th to make some studies on proposed plans for the next two years. This information will be incorporated with the Traffic Survey.

The Traffic Analysis for 1948 will be presented October the 10th by the Regional Director of the National Safety Council of the San Francisco office at a luncheon at the Desert Inn. More information as to the analysis of the summary will be available for the next months report.

The accident prevention Society of Richland of which the writer is a member has proposed that the three mayors of the Tri-City Area be invited to a November luncheon for the purpose of setting up the proposition to the three mayors to appoint a Tri-City Safety Committee. The purpose of this committee will be to coordinate all campaigns to cover the entire Tri-City, thus reducing accidents where possible in this area.

Extensive publicity has been given for the past month to the Safety Program by the local newspapers and radio stations. The names of these radio stations and newspapers have been submitted to the National Safety Council for a Safety Award for service.

This office was asked by the National Highway Users to release a story to the Associated Press, National News Services and the United Press regarding our planned program on distribution and publicity of the "Motor Manners". This story was released on October the 3rd, 1949 with photos by the Employees Relations Group. The "Motor Manners" were mailed out October the 7th. Some eight or nine newspapers have already carried the story. The Board of Education has accepted the "Motor Manners"as text for their Driver Training program.

The Village Safety Engineer received an invitation from the National Safety Council to attend the Safety Council Managers Meeting which is held in Chicago two days prior to the National Congress, which he will attend.

Community Safety

On September the 15th, the School Boy Patrol had a fifteen minute discussion on traffic over K W I E. September the 8th, Mrs. Irwin of the Richland P.T.A. Council and also one of the Directors of the Washington State P. T. A. talked over K W I E in regard to Child Safety, relative to the Child Safety Program of Richland.

Plans for Fire Prevention Week are given in a more complete form in the Fire Department monthly report.

COMMUNITY FIRE DIVISION

September 1949

Organization and Personnel

Number of employees on payroll	September
Beginning of the month	132
Returned from leave of absence (illness)	1
End of month	133

	Richland	North Richland
Response to alarms	16	6
Fire Loss (Estimated)		
Hanford Works	$ 5.00	0
Personal	12.00	$ 100.00
Investigation of minor fires and incidents	16	0
Safety meetings held	16	8
Inside drills	64	34
Outside drills	53	52
Alarm boxes tested	173	74

Miscellaneous Fire Department Activities:

1. Fire hydrants at Kadlec Hospital and Public Health Buildings were flushed.

2. Pump on Plant fire truck No. 47 was tested for 1131 garage.

3. Community Accounting personnel were given a conducted tour of Station No. 1 to have alarm system, apparatus and firefighting equipment explained and demonstrated.

4. Fire truck used to pump up and flush out sprinkler system at Public Health Building.

5. Maintained stand-by for controlled burning in three hazardous locations.

6. Trash and rubbish removed from around Richland fire hydrants by special detail.

7. Eighteen inspection tours made of the North Richland area.

COMMUNITY FIRE DIVISION September 1949

Fire Prevention

Fire Inspections:

700 Area Buildings	140
1100 Area Buildings	151
Commercial Facility Buildings (Gov't Owned)	142
Government Airport Buildings	10
Schools, Clubs and Churches	27
Dormitories	30
Homes	340
Total	840

Fire Extinguishers:

Inspected	1262
Installed	5
Recharged	7

Miscellaneous Activities:

1. Home Inspections:

   a. Inspections revealed that some ranch-style house tenants were operating forced-draft furnaces with controls set for summer use. A serious fire hazard is created by this carelessness. This was reported to Tenant Relations office and the hazard publicized in Hanford Works News.

   b. One tenant was found to have wired his house for electric heat and using a tampered fuse, having poured melted solder into a blown 15 ampre fuse. The matter was referred to Tenant Relations who instigated an electric inspection of the premises.

   c. Inspectors Ward and Campbell were detailed to inspect dormitories for three days and to assist in testing Kadlec Hospital sprinkler systems for another day.

2. Demonstrations:

   Inspectors Hayes and Ertel demonstrated the use of fire extinguishers to thirty employees of the Public Health Division on September 23rd.

3. Sprinkler Systems:

   a. Kadlec Hospital, Public Health and 703 Building sprinkler systems were inspected weekly.

2.

b. The Public Health Building sprinkler system was found to contain pebbles in the pipe-work. Maintenance employees with the assistance of Inspectors Hayes and Ertel, also with brief assistance by fire pumper and personnel, the entire system was back-flushed in accordance with National Board of Fire Underwriters recommended procedures. A strainer was installed in the supply main to avoid re-occurrence of the trouble. Inspectors were on this assignment for three days.

c. The five Kadlec Hospital sprinkler systems were completely tested on September 6th and 7th. Considerable more time than is standard was required for water to reach the test valve. Since Kadlec Hospital supervision is considering changing the dry to wet systems, no corrective action is contemplated until remodeling plans for the building materialize.

4. General:

a. Tested the fire alarm system in the Desert Inn twice during the month. Tests were satisfactory.

b. Conducted several meetings with the Chamber of Commerce Fire Prevention Week Committee in preparation of Fire Prevention Week Campaign.

c. Inspector Ertel assisted the Fire Department in resuscitation of John Huddle, lineman, injured in electrical accident September 15th.

COMMUNITY DIVISIONS

COMMUNITY PATROL

SEPTEMBER, 1949

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	September
Beginning of month	84
End of month	83
Net Decrease	1

Reason: 1 Removal from Payroll--Sick Leave

GENERAL

On September 1, 1949, Patrol began making frequent checks of the new LDS church structure to prevent children or vandals from trespassing or injuring themselves.

On September 9, 1949, Patrol began making a more intense observation of our school crossings during peak periods when School Boy Patrolmen were not on duty. In such cases traffic car patrolmen are assisting at these crossings.

Chief H. W. Strock attended the 56th Annual International Association of Chiefs of Police Conference in Dallas, Texas, September 9, 1949 through September 16.

Effective 12:01 AM, 9-15-49, the Trailer Compound in the south part of Richland, was released to the custody of the Richland Motor Company, who has assumed responsibility for its operation.

The North Richland Patrol changed from khaki to woolen uniforms on the 1st and 3rd shifts, effective 9-15-49.

Schedules for the new police training school to be held next month were announced on 9-22-49.

On September 26, 1949, Patrol issued a "No Hunting" mandate citing regulations in effect that "No Hunting" is to be permitted on the Hanford Works Project. This order was later changed to read that pheasant hunting would be permitted in certain prescribed areas near the Burning Ground.

A number of new business places have been added to our list during the month for routine facility checks.

Two Patrolmen, one from Richland and one from North Richland, were assigned to a weekly detail of picking up stray dogs in the Villages.

A dorm to dorm check with the dorm housemother was made daily on the graveyard shift, and twice on Saturday.

Routine checks of Columbia Camp were made by our North Richland Patrol on all shifts during the month.

A summary of our Fire, Safety, and Traffic hazards was made in the North Richland Area, and were reported to the proper authorities.

During the month of September, 10 prisoners were processed through the Richland Jail.

During the month of September, 70 gun registrations were taken by Richland Patrol.

During the month of September, a total of 118 Unusual Incident Reports were received, which consisted mainly of Public Intoxications, Public Nuisances, Domestic Troubles, and Thefts. Regular Traffic Violation and Offense Statistics are presented in separate tables attached to this report.

TRAFFIC

Traffic accidents increased from 10 in August to 15 in September. Volume counts taken at certain business district intersections showed approximately 12% increase in motor vehicle travel during the same period.

Surveys were conducted during September to determine warrant for need of traffic semaphore signals at locations named under Project C-210. Of nine volume counts made at these intersections, all were found to carry warrant for need of the traffic signals, according to specifications recommended by the Federal Public Works Agency.

Two parking lots in front of the Administration Building were resurfaced where needed and parking stall lines were painted. Repair and painting of the lots has provided a total of sixteen additional spaces and the congestion at the entrance and exits has greatly improved.

Due to an increase of traffic over Wright Avenue, a survey was conducted to determine the need of an arterial to carry traffic from the intersection of Wright and Duportail to Thayer Drive. This area was not posted with "Stop" signs and the unprotected intersections presented a right-of-way problem. Traffic counts were taken on Sanford and on Duportail. It was found that Sanford was carrying five cars for every one car over Duportail. These findings were submitted to REX BISSELL, PUBLIC WORKS DEPARTMENT, AND THE TRAFFIC COMMITTEE. All concerned voted in favor of converting Sanford into an arterial. The Village Safety Committee also voted in favor of the change when the results of the survey were presented to them. The necessary "Stop" signs were installed along Sanford from Thayer to Duportail. Signs were installed from this intersection to Wright Avenue, thereby giving traffic on Wright Avenue the right of way from Van Giesen Street to Thayer Drive.

Nine traffic safety lectures, one radio program, and several newspaper articles were published during September in line with the driver education program. Traffic violations increased approximately 30% in September over August.

The Schoolboy Patrol was re-organized in each of the elementary schools and each member has been supplied with all necessary equipment. A teacher from each of the schools was selected to assist the school patrol members with problems arising during school hours. A member of the Richland Patrol is supervising all school patrol activities.

The American Legion of Richland has agreed to sponsor a moving picture at one of the local theaters at least once each month for all members of the school patrol and furnish other entertainment in the form of picnics and parties.

TRAINING

Three Patrol Supervisors attended the regular Supervisory Training Course now being offered one week out of each month. They attended this course, September 19, 1949 through September 23.

Subjects covered in the lieutenant's training classes for the month of September were as follows:

Traffic
School Boy Patrol in Relation to Enforcement
Rights of the Accused in Arrest and Confinement
Emergency Barricade Procedures

Operations Orders issued by the department were discussed and reviewed in these classes and informal discussion of Police Problems current in the Tri-City Area were also held.

Advance training for Community Patrol members at the Small Arms Range for the month of September was divided into field instruction as follows:

Pistol	2 Hours
Machine Gun	2 Hours

Progress of scores and qualifications on the Army-L Course:

	July		August		September	
	No.	Percent	No.	Percent	No.	Percent
Unqualified	4	7%	3	5%	4	6%
Marksman	9	15%	10	18%	10	16%
Sharpshooter	5	8%	6	11%	8	12%
Expert	43	70%	38	66%	43	66%

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.

ACTIVITIES AND SERVICES (RICHLAND)

	July	August	September
Check on absentees	8	6	5
*Persons assisted	236	222	176
Doors and Windows found open in commercial facilities	46	89	47
Lost Children Found	11	12	15
Ambulance Runs	30	34	35
Lost dogs reported	4	7	8
Dog, cat, loose stock complaints	67	55	41
Persons injured by dogs	12	14	7
Bank escorts & details	38	45	40
Fires investigated	27	25	26
Miscellaneous escorts	33	38	160
Complaints investigated	106	143	134
Missing Persons reported	7	3	5
Totals	625	693	699

*Includes: Delivery of messages to residents who have no telephones; relay of messages; handling requests of out of town police; miscellaneous aids to

private parties; and opening trailer parking lot for individuals.

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	July	August	September
Check on absentees	2	0	0
*Persons assisted	164	122	126
Doors & windows found open in commercial facilities	14	11	68
Lost children found	1	1	4
Ambulance runs	5	0	0
Lost dogs reported	0	0	0
Persons injured by dogs	0	0	2
Dog & cat complaints	5	2	3
Bank escorts & details	14	14	27
Fires investigated	10	2	7
Miscellaneous escorts	14	21	17
Complaints investigated	13	13	19
Missing persons reported	0	0	0
Totals	238	186	273

*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

SEPTEMBER, 1949

Patrol		Entire Patrol 8-31-49	Entire Patrol 9-30-49
Patrol Supervisor		1	1
Captains		5	5
Lieutenants		8	8
Sergeants		11	11
Patrolmen		55	54
	Totals	80	79
Clerical			
Steno-Typists		2	2
Clerks		2	2
	Totals	4	4
	Grand Totals	84	83

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

September - 1949

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	10	15	0	0	0	1	3	2
North Richland	2	4	0	0	1	1	1	5
Totals	12	19	0	0	1	2	4	7

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	5	0	3	4	1	0	1	11
North Richland	2	0	0	2	0	0	0	2
Totals	7	0	3	6	1	0	1	13

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other V.		Totals	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	1	1	0	2	106	126	1	3	0	9	0	0	108	141
North Rich.	0	0	0	0	4	0	0	0	4	1	0	0	8	1
Totals	1	1	0	2	110	126	1	3	4	10	0	0	116	142

COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.		Totals	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	21	35	10	11	2	2	3	0	0	1	7	8	4	3	8	19	55	79
N. Rich.	4	5	2	5	0	1	0	0	0	1	1	0	0	0	4	6	11	18
Totals	25	40	12	16	2	3	3	0	0	2	8	8	4	3	12	25	66	97

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on September 19, 1949, at intersection of Thayer Drive and Williams Boulevard - 8,520 Cars.

12128 75

COMMUNITY PATROL DIVISION
RICHLAND JUSTICE COURT CASES

SEPTEMBER 1949

NAME	No. Of Cases	No. Of Convictions	Total Fines	Total Susp.	Sentenced To Jail	Sentence Suspended	License Revoked	Average Fine Paid	Cases Dismissed	Warrants Issued
							1	$77.50		
Drunken Driving *	1	1	$77.50				1	$37.50		
Reckless Driving	1	1	$37.50					$24.50		
Negligent Driving	5	5	$122.50					$10.37		
Speeding **	40	40	$415.00					$5.13		
Stop Sign ***	15	15	$87.00					$3.75		1
Imp Passing	2	2	$7.50					$7.50		
Def. Equipment	1	1	$7.50	$5.00				$6.25		
No Driver's License ****	6	6	$37.50	$10.00				$3.50		
Imp. Parking	3	3	$10.50					$7.50		
Invalid Lic. Plates	1	1	$7.50							
Negligent Riding on a Motorcycle	1	1	$27.50					$27.50		
F.T.Y.R.O.W.	1	1	$10.00	$7.50				$10.00		
F.T.S. & Identify	1	1	$12.50	$10.00				$12.50		
Public Nuisance	2	2	$17.50		1	1		$8.75		
Public Intoxication	1	1	$12.50					$12.50		
Drunk & Dis. Conduct	1	1	$12.50					$12.50		
Third Degree Assault	1	1	$37.50					$37.50		
	83	83	$940.00	$70.00	1	1	2	$304.75		1

Total Fines.....$940.00
Less Susp..... 70.00

Total Fines Paid $870.00

* 1 case reduced to Reckless Driving
* 1 Case reduced to Negligent Driving
** 4 cases included with other violations
*** 4 cases included with other violations
**** 1 case included with other violations

1 case; Larceny by Check - turned over to Superior Court, at Prosser, Wn.
1 case; Non-Support - turned over to Deputy Sheriffs from Yakima, Wn.
1 case, Rape - turned over to Superior Court, at Prosser, Wn.

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CRIME PREVENTION SECTION
MONTHLY REPORT
SEPTEMBER, 1949

Classification Of Offenses	Offenses Known or Reported to Patrol	Offenses Unfounded	Actual Offenses August	Actual Offenses September	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved	
Assault	2	0	3	2	1	1	2	
Breaking & Entering	2	1	2	1	0	0	u	
Attempted Brk. & Entering	0	0	1	0	0	0	0	
Burglary	0	0	3	0	0	1	1	a
Larceny (Except Auto & Bike)								
Over $50.00	11	0	9	11	2	3	2	
Under $50.00	17	0	21	17	0	12	8	b
Larceny by Check	4	0	5	4	4	0	1	c
Forgery	0	0	2	0	0	0	0	
Bike Theft	15	0	6	15	0	6	u	
Dest. of Personal Property	2	0	2	2	1	1	2	d
Dest. of Gov't. Property	2	0	3	2	0	0	u	
Loss or Theft of Gov't Prop.	2	0	2	2	0	1	1	
Trespassing on Gov't Prop.	0	0	1	0	0	0	0	
Unauthorized Use of Gov't. Equipment	0	0	1	0	0	0	0	
Investigation	8	0	1	8	1	6	7	e
Attempted Suicide	1	0	1	1	0	1	1	
Disorderly Conduct	1	0	0	1	1	0	1	
Drunkenness	2	0	7	2	2	0	2	
Disturbance	13	0	2	13	0	10	11	f
Vagrancy	0	0	2	0	0	0	0	
Public Nuisance	2	0	0	2	2	0	2	
Missing Persons	5	0	2	5	0	5	5	g
Offense Against Family & Children	7	0	5	7	0	7	8	h
Prowlers	5	2	5	3	0	1	1	
Sodomy	1	0	1	1	0	0	u	
Co-Habitation	0	0	1	0	0	0	0	
Indecent Exposure	1	0	1	1	0	1	1	
Indecent Liberties With Minor	0	0	2	0	0	0	0	
Indecent Language	0	0	1	0	0	0	0	

(Continued on Page Two)

Page Two—Monthly Report—Crime Prevention Section—September, 1949

Classification	Offenses Reported	Offenses Unfounded	Actual Offenses August	Actual Offenses September	Offenses Cleared By Arrest	Offenses Cleared By Other Action	Perpetrators Involved	
Unauthorized Soliciting	0	0	1	0	0	0	0	
Possible Secret Organization Member	0	0	1	0	0	0	0	
Altered Birth Certificate	0	0	1	0	0	0	0	
Vandalism	6	0	2	6	0	1	4	
Malicious Mischief	4	0	7	4	0	4	6	i
Pickup for Outside Agency	1	0	0	1	0	1	1	
Unattended Death	1	0	1	1	0	1	1	
Auto Theft	1	0	0	1	0	1	1	j
TOTAL	116	3	105	113	14	64	69	x

a. 1 Case Perp. by 1 Juv. Age 15
b. 1 Case Perp. by 2 Juv. Ages 14
c. 1 Case Perp. by 1 Juv. Age 14
   1 Case Perp. by 1 Juv. Age 7
   1 Case Perp. by 1 Juv. Age 9
   1 Case Perp. by 1 Juv. Age 14
c. 4 Cases Perp. by 1 Juv. Age 21.
d. 1 Case Perp. by 1 Juv. Age 16.
   1 Case Perp. by 2 Juv. Ages 8 & 10.
e. 1 Case Perp. by 2 Juv. Ages 12.
f. 1 Case Perp. by 2 Juv. Ages 5 & 6.
   1 Case Perp. by 3 Juv. Ages 14.
   1 Case Perp. by 2 Juv. Ages 18 & 19.
g. 1 Case Perp. by 1 Juv. Age 15
   1 Case Perp. by 1 Juv. Age 17.
h. 1 Case Perp. by 1 Juv. Age 16.
   1 Case Perp. by 1 Juv. Age 20.
i. 1 Case Perp. by 1 Juv. Age 6.
   1 Case Perp. by 1 Juv. Age 7.
   1 Case Perp. by 4 Juv. Ages 8, 9, 12, & 14.
j. 1 Case Perp. by 1 Juv. Age 14.
x. 1 of the Perp. Involved is Colored.
u. Represents Unknown

Value of Property Recovered for Month—$850.80 (6 Bikes)

Number of offenses known to police per 10,000 inhabitants in cities between 10,000 and 25,000 inhabitants:

Classification	Wash. Oregon & Calif. Six Months (Jan–June 1948)	Wash. Oregon & Calif. One Month Average	Richland and North Richland Six Months (Jan–June 1948)	Richland and North Richland August 1949	Richland and North Richland September 1949
Murder	181	.031	0	0	0
Robbery	3.47	.58	1.00	0	0
Aggravated Assault	1.75	.29	6.66	2.00	1.33
Burglary	35.69	5.95	4.63	2.00	.66
Larceny	127.06	21.18	47.16	27.33	30.00
Auto Theft	15.56	2.59	3.10	0	.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 Six Months (Jan–June 1948)	State of Washington One Month Average	Richland and North Richland Six Months (Jan–June 1948)	Richland and North Richland August 1949	Richland and North Richland September 1949
Murder	140	.023	0	0	0
Robbery	4.90	.82	0	0	0
Aggravated Assault	78	.13	6.66	2.00	1.33
Burglary	36.91	6.15	4.63	2.00	.66
Larceny	92.22	15.37	47.16	27.33	30.00
Auto Theft	18.15	3.03	3.10	0	.66

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

Classification	National Average Six Months (Jan–June 1948)	Richland and North Richland Six Months (Jan–June 1948)	Richland and North Richland August 1949	Richland and North Richland September 1949
Robbery	55.5	0	0	0
Burglary	59.9	8%	66%	100%
Larceny	45.2	13%	19%	13%
Auto Theft	71.6	0	0	100%

Note: Statistics of Juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower age groups because of the practice of some jurisdictions not to fingerprint youthful offenders."

COMMUNITY DIVISIONS

COMMUNITY-ACTIVITIES DIVISION
September

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of Month		16
Additions	0	
Terminations	4*	
End of Month		12

*Four summer part-time recreation employees

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel, as of September 30, 1949:

Administration	6
Clerical	18
Principals & Supervisors	16
Teachers	244
Health Audiometer	1
Building Custodians	49
Cooks	30
Nursery School & Ex. Day Care	10
Bus Drivers	2
TOTAL	376

CHURCHES

The following is a tabulation of full-time paid church personnel, as of September 30, 1949:

	Ministers	Staff	Total
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

	Ministers	Staff	Total
United Protestant - West Side	1	0	1
United Protestant - South Side	1	0	1
United Protestant - Northwest	1	0	1
	18	7	25

Rev. Marvin Ensign replaced Rev. Root as Pastor of the Free Methodist Church.

Rev. John Schindler replaced Rev. John Kelley as Assistant Pastor for Christ the King Catholic Church.

The Mid-Columbia Council of Churches, the Washington - North Idaho Council, and the International Council of Religious Education conducted a complete religious census in Richland and the Tri-City area. This census was taken to assure closer cooperation between churches and to urge greater attendance at all church services.

The Richland Lutheran Church Choir presented their first fall concert on Sunday, September 11, utilizing the new addition to the church which was recently completed. On September 18, dedication services were held for the new addition.

CLUBS AND ORGANIZATIONS

As of September 30, 1949, organizational personnel included:

Villagers, Inc.	7
American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	1
Red Cross	3
Castle Club	1
Post Office	56
Veterans Administration	2
Girl Scouts	2
	79

The Community Chest campaign for $52,900 for the 1950 operation of the eleven member agencies began September 30 and will continue through October 15. Chest members include: Boy Scouts ($6,000), Girl Scouts ($5,678), Camp Fire Girls ($3,700), Youth Council ($8,563 - includes Hi-Spot - $1,800), Youth Camp ($1,000), Welfare Board ($3,000), Health Council ($100), YMCA Hi-Y and Tri-Hi-Y ($500), Washington Children's Home Society ($2,400), Salvation Army ($600), USO ($490), and Campaign Expense ($869).

On September 13, 1949, the Atomic Energy Commission approved the policy regarding the renegotiation of organization leases. All organizations leasing Government buildings and land have been advised of the change in rental policy to be effective November 1, 1949. In general, this policy establishes a formula

wherein the organizations accept responsibility for interior maintenance other than for complete unit replacements. The revised rent will include a base rent of 6% of the valuation of the building, a flat sum for utilities and services other than electricity and steam, and a use rate for utilities and steam. This policy will reduce the amount of maintenance now being performed by the General Electric Company and will increase revenue.

During the month a historical summary was compiled regarding the relationships between School District #400 and the Community - Activities Division. This report includes procedures for construction and operation, board membership, and general policy information.

On September 2, an alteration permit was issued to the Castle Club to enlarge, at their own expense, the basement recreation room by removing a non-bearing partition. This alteration was approved by the Safety and Engineering Sections.

At the Annual Washington State American Legion Convention held in Seattle during the week of September 4, the Richland Post No. 71 received the highest honors in the State for the second consecutive year. Honors taken were as follows:

"Welsh Americanism Trophy" for outstanding community work.
"Department of Washington Publicity Trophy"
"Talbot Traffic Safety Trophy" - The American Legion sponsors the School Boy Patrol in conjunction with the Richland Patrol.

From September 8, through September 15, an emergency Polio Drive was held in Richland in conjunction with a nation wide drive. All contributions were requested to be mailed "c/o Postmaster". A total of $750.00 was received at the end of the drive, with donations still forthcoming.

On September 16, as approved by the Atomic Energy Commission, the Richland Riders Club was granted additional land and buildings due to increased activities.

All church buildings were inspected September 19. All other community buildings were inspected September 27 and 28. Marked improvement was evident as compared with previous observed conditions.

The exterior painting of the Richland Villagers, Inc. office building was completed September 21.

Three hundred eighty six persons attended the Fourth Annual Kiwanis Club Banquet on September 14. This annual program honors all employees and officials of School District #400, who were guests of the club.

The Richland Chapter of the S.P.E.B.S.Q.S.A. presented the "First Parade of Quartets" in the auditorium of the Carmichael Junior High School on Saturday evening, September 24, before a capacity crowd. Ten quartets from Washington and Oregon and the Richland Chorus participated.

The number and types of organizations presently served by the 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.

On September 20, 1949, the Recreation Advisory Committee held the regular monthly meeting. New organizations requesting approval include: Key Club, Columbia Duplicate Bridge Club, Disabled American Veterans Auxiliary, Beta Sigma Phi - Xi Lambda, Royal Order of Amaranth - Artemisia Court, Zadok Council of Royal & Select Masters, Rotary Club, and Orthopedic Guild (Second).

PARKS AND RECREATION

The Community - Activities Division Recreation Coordinator attended the annual convention of the National Recreation Association at New Orleans, Louisina, on September 12 to 16.

The Recreation Section assisted in planning programs and providing facilities for the following events:

"S" Dept. Recreation Association picnic - September 5
Kiwanis Father & Son Banquet - September 28
Richland Kennel Club Show - September 25
Telephone Division Picnic - September 1
Electrical Division Picnic - September 10
"P" Division Picnic - September 17
Public Health Division Picnic - September 20

On September 26, plans were completed for a community-wide Halloween celebration for the school children in Richland. The Lions Club plans to act as a steering committee for developing the program with the cooperation of other local service groups including the school Parent-Teacher Associations, and the Recreation Section.

The first Tri-City Championship Archery Tournament was held on Sunday, September 25, at the Community Archery Range in the Village Park. The tournament was sponsored jointly by the Tri-City Archery Club and the Community - Activities Division. Twenty-six archers competed.

Arrangements have been completed for weight lifting and fencing classes to be started in October as part of the Community Recreation Program.

Plans have been developed for a recreation program for both elementary and junior high school youth to be conducted at the schools each day after school hours. Supervision will be provided by the school personnel with overall supervision provided by the Community-Activities Division. This program will include recreational activities on the school grounds and/or in the gyms each Saturday morning.

Fall and Winter activities for high school youth and adult groups is in the development stage and the program will be started in October.

Patch seeding and fertilizing of the Memorial Softball Field was completed during the month. In connection with this work some filling and leveling was necessary to eliminate low areas and provide adequate drainage.

Assistance has been given to the "Hello Neighbor" program committee in coordinating various phases of the program including arrangements for rental of school buses for the guided tour of Richland, the free lunch at the Village Park, the parade of the Columbia Basin Shriners, and the football game sponsored by this organization on October 8.

Assistance was given to the Community Chest Committee in making arrangements and providing facilities for the Youth Rally held on September 30, in the down-town area in conjunction with the Community Chest Drive.

The Richland Park Swimming Pool closed September 5, 1949. Attendance figures at the pool were the highest yet attained since the pool operation started in 1944. The average daily attendance was 720 and the total attendance for the season, June 11 through September 5, was 54,060. The safety record for the season was also one of the best to date, since only one water rescue was necessary during the season and no ambulance call was required for any injury charged to the pool operation.

On September 20, the Recreation Advisory Committee approved the boundaries, names, and proposed equipment for the playlots, playgrounds, playfields, and recreation parks. This report was submitted to the Town Planning Board on September 27, 1949.

RICHLAND SUMMER RECREATIONAL PROGRAM ATTENDANCE REPORT
June 13 - September 3, 1949

	Average Weekly Attendance	Total Attendance
Apparatus	412	4,950
Athletics	398	4,778
Wading Pool	319	3,833
Ping Pong	252	3,025
Tether Ball	193	2,316
Dramatics	181	2,180
Handicraft	181	2,177
Softball	163	1,963
Badminton	158	1,903
Passive Games	150	1,808
*Dancing	148	893
Volleyball	138	1,544
Checkers, Dominoes	111	1,343
Croquet	109	1,312
Tennis	106	1,272
Ring Toss	66	802

	Average Weekly Attendance	Total Attendance
Horseshoes	49	598
Dodge Ball	40	480
Bean Bag	32	395
Rope Jumping	26	315
Sidewalk Tennis	26	313
Football	15	189
Storytelling	6	82
Tumbling	5	65
Basketball	2	33
Boxing	1	15
Nature	1	8
	3,278	38,592

The above figures were compiled from daily attendance records kept by playleaders in parks and playgrounds on week days, Mondays through Fridays, hours 9:00 AM to 5:00 PM.

* Dancing activity was for a six week duration only.

MAJOR ACTIVITIES DURING MONTH

September	7	Kiwanis School Banquet	Carmichael Jr. High School
	8-15	Emergency Polio Drive	Village
	13	Red Cross Mobile	Red Cross Building
	18	Teachers reception by U. P. Churches	Carmichael Jr. High School
	24	Parade of Quartets	Carmichael Jr. High School
	25	Archery Tournament	Municipal Archery Range
	30	Community Chest Drive	Village
	5	"S" Dept. Recreation Assoc. Picnic	Village Park
	28	Kiwanis Club Father & Son Banquet	Carmichael Jr. High School
	25	Kennel Club Dog Show	Village Park
	1	Telephone Division Picnic	Village Park
	10	Electrical Division Picnic	Village Park
	17	"P" Division Picnic	Village Park
	20	Public Health Div. Picnic	Village Park

GENERAL ELECTRIC COMPANY
HANFORD WORKS
COMMUNITY ACCOUNTING DIVISION

MONTHLY REPORT FOR SEPTEMBER, 1949

ORGANIZATION:

Employees - Beginning of Month	27	Exempt	6	Male	10
Transfer In	1	Non-Exempt	22	Female	18
Total - End of Month	28	Total	28	Total	28

1 permanent assignment was made in September to replace an employee transferred during the month of August.

Each employee was rated and a progress report submitted and discussed with the employee by the Supervisor during the past month.

ACCOUNTS RECEIVABLE

RENTS

	SEPTEMBER	AUGUST
House Leases Processed:		
New leases	212	188
Modifications	10	16
Cancellations	168	189
Active total house leases	5,689	5,645
Dormitory		
New assignments	160	191
Removals	184	160
Total occupancy	961	985

Rental revenue was as follows:	SEPTEMBER	AUGUST
Equipment	$ 23.18	$ 54.47 Cr.
Houses	256,084.84	252,850.25
Dormitories	13,768.54	13,128.98
Facilities	40,181.99	32,457.52
Total	$310,058.55	$298,383.28
Unoccupied house revenue loss	$ 2,987.66	$ 4,895.50
Unoccupied dorm revenue loss	2,028.96	2,668.52

There are still eight facility operators who still have equipment on a rental basis.

TELEPHONE

	SEPTEMBER	AUGUST
Number of work orders processed	128	181
Number of working phones	2620	2600
Revenue including services	$5,362.16	$5,325.19

Community Accounting Division

Final arrangements have been completed concerning the change in procedure for telephone toll billing to be handled by Interstate Telephone Company effective October 26, 1949.

No definite word has been received concerning the proposed revision in telephone rental rates submitted to the A.E.C. on August 15, 1949.

MISCELLANEOUS

There were 218 invoices issued during September accounting for $1,101.35 in revenue. This represents a slight increase over the volume of invoices issued last month. Revenue from dog licenses amounted to $15.00.

The following building permits were issued:

LESSEE	AMOUNT
Orville W. Wilmot	$ 133.20
Arthur and Leonard Daymonay	174.50
September fees	$ 307.70
Previously reported	3,428.91
Total to date	$3,736.61

Government owned equipment in Klopfenstein's Men's Store was sold at the agreed upon price of	$ 506.99
Previous Sales	91,760.76
Total to date	$92,267.75

Nineteen collection letters were written during the month resulting in the collection of four accounts totaling $529.82.

ACCOUNTS PAYABLE

STATISTICS

	SEPTEMBER	AUGUST
Accounts Payable Vouchers	251	219
Freight Bills Processed	14	13
Purchase Orders Received	47	51
Net Amount of Purchase Orders	$ 4,749	$ 5,421
Receiving Reports Received	61	70
Total Net Amount Disbursed	$28,379	$40,359

The material vouchers processed increased in September over August but the amount

The freight account was cleared to a zero balance and the Accounts Payable credit balance of $1,432.40 consisted of four debit items and six credit items, all but two of which are September items.

The contract with Newland Cafeteria concerning the supplying of meals to prisoners in the jail was approved, and the first payment was made in September.

A summary of Active Subcontracts is shown below:

SUBCONTRACTOR	SUBCONTRACT NUMBER	AMOUNT AWARDED	PAID THIS MONTH	TOTAL PAID	AMOUNT RETAINED
Frederickson,Dr.J.L.	---	*$ 577.50	$ 391.50	$ 577.50	$ -0-
Newland Cafeteria	---	* 0	0	0	-0-
Richland Maintenance	---	* 35,744.76	7,021.74	35,744.76	-0-
West Coast Painters	G-219	58,526.79	0	18,640.97	2,071.22
McAtee & Heathe	G-223	45,209.94	406.24	45,209.94	-0-
		$140,058.99	$7,819.48	$100,173.17	$2,071.22

* Total amount of contract will be total of estimates as submitted.

Community Divisions estimate of Cash disbursements for October amounted to $52,100 and estimated cash receipts were $87,800.

The compilation of the Community Division Business and Occupational Tax was completed and submitted to the General Division for consolidation.

COST

REPORTS

The August Operating Report was completed and distributed on September 19, 1949.

Further revisions in the report were agreed upon as follows:

1. Electricity, stationary and the telephone toll and leased line charges will be handled as direct charges and shown as a within-division cost on future reports.

2. Grounds Maintenance charges which formerly flowed through the Community Engineering Section of the report and thence to the prime report will be liquidated directly to the prime report without going into the Community Engineering Section.

The Comptroller's Appropriation and Project Report for August was issued on September 22, 1949.

Community Accounting Division

BUDGET

We were requested by and performed certain supplemental work for the A.E.C. Budget Office on the original budgets submitted to them.

Budget review forms are set up preparatory to working on the mid-year review which should be completed by November 20, 1949 for submission to the General Electric Appropriations and Budget Committee.

We are still well within our budget limits in relation to the Operating Reports but recognize that there is a great deal of cost to be incurred on subcontract and maintenance work which has been deferred for various reasons. This work is expected to increase in tempo in the near future.

WORK ORDERS

A summary of service order statistics is listed for information:

	NUMBER OF SERVICE ORDERS		TOTAL COST	
CRAFT	August	September	August	September
Plumbing	1,171	631	$ 2,989.64	$1,759.85
Electrical	1,451	1,424	3,921.45	3,345.86
Heating & Vent.	35	*	115.87	-0-
Glazing	325	109	1,196.75	440.72
Lock and Key	191	166	698.59	487.87
Carpentry	456	218	1,226.20	894.05
	3,629	2,548	$10,148.50	$6,928.35

* This craft discontinued the first portion of August to be resumed October 1st.

Statistics covering regular work orders:

	25th August	25th September	Net Change
Active Routine Orders	459	479	/ 20
Active Normal Orders	698	735	/ 37
	1,157	1,214	/ 57
Work Orders Received	573	711	
Work Orders Completed	518	654	
		57	

GENERAL LEDGER

The August trial balance and supporting financial statements were forwarded to the General Division for consolidation on September 16, 1949.

Community Accounting Division

An inventory account was established to control inventory items maintained in the Housing Warehouse and the items stocked by the Maintenance Division of Public Works. The total value of this inventory when established amounted to $179,492.

STATISTICS

	NO.	AMOUNT
Second Class Invoices Received	78	$149,127.30*
Second Class Invoices Issued	25	120,219.82

* This figure does not include the Plant and Equipment amount as of June 30, 1949 transferred to the General Division in September in the amount of $46,992,750.

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DESIGN DIVISION

SEPTEMBER 1949

PERSONNEL

Additions

1 Engineer
4 Senior Engineers
2 Draftsmen I
1 Draftsman III
1 Steno-Typist B
1 Steno-Typist C
4 Senior Engineers on loan
1 Junior Engineer on loan
1 A-J Engineer on loan

Separations

1 Division Manager
1 Assistant Division Engineer
2 Senior Engineers
1 Junior Engineer
1 Draftsman I
1 Reproduction & Photo Assistant A
1 Secretary B
2 Steno-Typists A
1 Steno-Typist B
1 A-J Engineer on loan

Total Number of Employees on Payroll

	Beginning of Month	End of Month	Net Increase or Decrease
Design Division	251	250	- 1
On Loan to Design Division	12	17	+ 5
	263	267	+ 4

PILE AREA "C" - PROJECT C-300

The project proposal for Phase II of Pile Area "C" development which was submitted to the Atomic Energy Commission on August 12, 1949, still has not been approved.

The funds previously authorized (for Phase I) in the amount of $250,000.00 were substantially expended or committed on October 1; however, a special appropriation of $40,000 was obtained from the local Atomic Energy Commission office to continue our activities to November 1, 1949. It is hoped that approval will be obtained by that date.

[redacted]

This lack of approval is delaying the placing of orders for expensive test equipment to be used primarily for heat transfer experiments. All purchase orders are being held up until the project proposal has been approved - thus the experimental phase of this program is suffering a serious delay.

Two meetings of the Pile Area "G" Coordinating Committee were held during the month of September. The minutes of these meetings are contained in documents HDC-1432 and HDC-1449. This Committee has approved the decision reached earlier by the 100 Area Design Section regarding the 3-X System to be used on this new reactor.

The progress that has been realized during the past month on the various sub-projects under development is summarized briefly as follows:

Heat Transfer

The south end of the 189-D Building has been selected as the site for these tests, pending official confirmation from the Operating Divisions. The results of these tests will be extremely valuable in reviewing the operating power level of the present piles. The data obtained will be of paramount importance in establishing the power level of the new "G" reactor.

Third Safety Device

It has been decided that engineering effort will be concentrated on the design of a Third Safety System consisting of small balls retained in storage hoppers within the biological shield, operating in conjunction with a special liquid injected through the pile in special process tubes. It is planned to use the sheet rod slots in the graphite as the passage through which the balls will flow.

Sheet Rod Development

The first phase of the sheet rod tests has been completed. These tests were run with the graphite stack bowing up to a maximum of four inches to assimilate the maximum graphite growth condition anticipated. It was reassuring to note that the rate of descent of the sheet rod was essentially the same for all conditions from a perfectly straight configuration of the graphite blocks to the 4" bowed condition.

A prototype sample of a step block is being installed in the test set-up for Phase II of the drop tests.

Shielding

The entire shielding program for the "G" reactor was reviewed and re-evaluated. It is anticipated that a much simpler and relatively less expensive shield can be developed for the "G" reactor than is used on present piles. The results of this review of the shielding program are contained in document HDC-1437. A second report (document HDC-1440) of asphalt as a shielding material was issued in September.

PILE AREA "G" - PROJECT C-300 (continued)

Sheet Rod Material

In view of the great number of possible materials that can be used for sheet rods, and the different cooling requirements of each of these materials, it was felt necessary to confine our activities from a design standpoint, to the most promising material and alloying agent. As a result, a titanium-gadolinium material has been selected as the most promising solution to our sheet rod material problem. The basis of this selection is contained in report HDC-1438. However, our metallurgical program will include a thorough investigation of physical and nuclear properties of a great many materials and alloying agents.

The sheet rod material that was selected from a design standpoint will not require water cooling, which will be a marked advantage.

Process Tubing

The creep tests are now well under way. These tests are being run at pressures of 400 p.s.i. and at 600 p.s.i., with the tubes immersed in a bath at a temperature of 200° F.

A design meeting was held to establish the design requirements of the process tubes, gun barrels, and nozzles. As a result of this meeting, a relatively firm design program was established.

Recirculation Water System

The test program is to be run in the "H" pile. The program has been reviewed with the Technical and Operating Divisions and is in the final planning stage. The Technical Division is providing a considerable amount of assistance in the entire recirculation program.

Work on the 100-G Area by the Power, Water and Mechanical Group, under present arrangements, is confined exclusively to work on the experimental process water recirculation system for use with selected tubes of a production unit. This work consists of the sizing of equipment and piping, preparation of preliminary floor plans, preparation of piping arrangements, securing cost estimates, preparation of specifications, and preparation of purchase requisitions.

During September two preliminary floor plans were prepared. One contemplated the occupancy of all space in one experimental room; the other contemplated the occupancy of one-half of this space to indicate rearrangements involved if only one-half of the experimental room can be used for experimental recirculation equipment. Sketches were prepared for a single unit retention tank and for the twin unit type of retention tank for purposes of comparison. Purchase requisitions were prepared for securing bids on retention tank facilities of the twin unit type. Field trips were made. Preliminary sizes of equipment were submitted to the cost estimating group for use in the preparation of preliminary cost estimates.

[redacted]

PILE AREA "G" - PROJECT C-300 (continued)

Rapid Scanning of Process Tube Temperatures

Further work is being done in the rotary mercury-jet scheme of commutating for rapid scanning of process tube exit temperatures. Accelerated tests are being run on the mercury-copper reaction and they are favorable to date. The mercury switch is sealed to prevent a health hazard and enclosed in an inert gas to reduce chemical action.

100-DR WATER PLANT - PROJECT C-342

The Subcontract G-274, with Chas. T. Main, Inc. for the design of the "DR" Water Plant has been completed and Atomic Energy Commission approval obtained. Document HDC-1418, "Design Criteria for 100-DR Water Plant," has been completed and forwarded to Chas. T. Main, Inc., for their review. Representatives of Main will be in Richland on October 7 to inspect the site, examine existing installations, and become acquainted with our procedures. Additional engineering manpower will be provided to carry out this program.

PILE AREA "H" - PROJECT C-165-A

Approximately 92% of the acceptance tests have been completed for Area "A", and 80% for Area "B". As of October 5, ten buildings had been accepted by the Operating Divisions. There are very few problems that are now being submitted to the Design Division for disposition.

The principal activity of the Electrical Group in 100 Area work during the month of September consisted of design assistance in the field in preparing the 100-H Area for start-up. The considerable amount of complicated electrical equipment in the horizontal rod drive, and in other applications in the area, was placed in service with a minimum of delay and difficulty.

The operating portion of the Technical Manual covering the use of the pile controls was completed. Two engineers from the group conducted a training session for the benefit of the 105-H Building supervision in which they covered the principles of operation and the manner of using the electrical controls for the piles.

Some time was spent on a study of the protective relay system in the 100-H Area, the result of which was a recommendation to the Electrical Division on the setting of these relays.

REPLACEMENT PILE "DR" - PROJECT C-206-A

All General Electric Company drawings have been checked for "as built" condition. Similarly, all Giffels & Vallet drawings except the eleven on 107-DR have been checked for the same condition.

[redacted]

234-5 BUILDING PROGRAM - PROJECT C-198

Phase I. A report on the start-up and initial test of the ventilation system for the 234-5 Building, written by the Power, Water and Mechanical Group, was issued September 9, 1949.

Designs and drawings were made by this Group for an improved all weather atmospheric reference to be installed as a part of the ventilation system for the 234-5 Building. Design changes were made and work orders issued by the subject Group as required to provide wood covers for valve pits and valve handle changes and extensions at various locations in and about the 234-5 Building.

Phase III. Design work was done in September on ventilation systems for rooms 147 and 179, Building 234-5. This special work was put ahead in the work schedule at the request of the 234-5 Section.

ENLARGING 251 SUBSTATION - PROJECT C-295

Design work on this project was advanced to 70% completion. There are only four drawings yet to be completed on the substation portion. Work on the East Area lines is deferred indefinitely.

Construction work on the substation building progressed satisfactorily. The portion of the work at this site assigned to the Atkinson-Jones Company is expected to be substantially completed by October 14. Machinery was set in motion to terminate the subcontractor's work at this time. The few remaining unfinished items will be completed by the General Electric Company.

The Project Proposal, Part II, was completed. It contained the final estimate which was made from the almost completed file of drawings.

A cost record system was set up for the project. This system provides an up-to-date record of costs by accounts, the last few weeks of which are estimated. The estimates, however, are based on information in the possession of the Field Engineer, and are considered to be quite accurate. Data were developed on which to base the transfer of costs erroneously made to Project C-198 and it is expected that within two weeks the cost records on the project will be entirely in order.

SOLAR EVAPORTATION OF LABORATORY WASTES - STUDY GET-13

The study of solar evaporation of laboratory wastes was stopped September 15, 1949, by PM-1727, for the reason that the study is no longer of immediate interest to the Technical Division in its construction program. A closing report of the work accomplished before cancellation of the study has been issued as PM-1740 dated September 23, 1949.

ADDITIONAL SERVICES FOR 300 AREA - PROJECT C-190

Work by the Power, Water and Mechanical Group was done during September on the checking of "as built" drawings and on the preparation of property appraisal information in connection with Additional Services for the 300 Area. This Group also prepared Part IV of the project proposal for Project C-190, which was submitted for approval September 30, 1949.

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DEVELOPMENT OF NEW AREAS FOR COMMERCIAL FACILITIES - PROJECT C-288

Liaison work for Architect-Engineer, Design Division, Public Works, and Atomic Energy Commission on the plans for these projects has continued. The revised scope of work and plans showing the new scope of work were presented to the Atomic Energy Commission for approval.

The preparation of the new project proposal defining the new scope of work is being delayed by additions and alterations to the work. Until such time as this revised scope of work is "frozen" so that further changes are prevented, it will be impossible to say definitely when the new project proposal will be completed. The "freezing" of this scope of work is also important, in order not to delay the construction contractor by frequent, necessary revisions to the drawing schedule, which has recently been required.

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PROJECT & RELATED PERSONNEL - SEPTEMBER - 1949

	8-31-49		9-30-49	
GOVERNMENT EMPLOYEES				
Civilian Personnel - ATOMIC ENERGY COMMISSION	329		330	
Civilian Personnel - G.A.O.	8		8	
TOTAL		337		338
RICHLAND VILLAGE PERSONNEL				
Commercial Facilities (Includes No. Richland)	1146		960	
Organizations, Clubs, Etc.,	82		79	
Schools	352		376	
Churches	25		25	
TOTAL		1605		1440
CONSTRUCTION SUB-CONTRACTORS				
Atkinson & Jones	1601		983	
Newberry Neon	421		137	
Urban, Smyth, Warren Co.,	462		254	
Kellex Corp.,	314		327	
Giffels & Vallet, Inc.,	35		29	
Morrison-Knudsen Co.,	1		1	
National Carbon Co.,	55		37	
J. A. Terteling & Son	126		225	
McNeil Construction Co.,	9		-	
Haughton Elevator Co.,	3		-	
E. J. Bartells Co.,	52		81	
Combustion Eng. Co.,	1		-	
National Blower & Sheetmetal	5		-	
Scott - Buttner	6		-	
Howard P. Foley	31		36	
No. Electric Mfg. Co.,	17		10	
Newport - Kern - Kibbe	51		19	
Great Lakes Carbon	134		134	
Graham, Anderson, Probst & White Inc., & J. Gordon Turnbull	34		36	
McCorkle Const. Co.,	42		58	
Dayley Bros.	36		28	
Edmund P. Erwen	18		15	
J. P. Head	3		2	
Bailey Plumbing and Heating	-		20	
John H. Foster	-		3	
TOTAL		3457		2435
GENERAL ELECTRIC PERSONNEL		7522		7519
GRAND TOTAL		12921		11732

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